SYDNEY ZOO
PLANTING STRATEGY
CUMBERLAND PLAIN WOODLAND COMPONENT

Prepared by
Geoff Duggan
Geogenic Landscapes

for
Client
Jake Burgess
Sydney Zoo

ABN 92 504 165 023
0409122951
drystonewalling@bigpond.com
www.geogenic.com.au

Prepared 19th January 2016

SYDNEY ZOO PLANTING STRATEGY - CUMBERLAND PLAIN WOODLAND COMPONENT

Geoff Duggan of Geogenic Landscapes is highly skilled in landscape design, project management, construction and horticulture with almost 30 years' experience. He has specialised in botanic garden and open space master planning, thematic design, living collection development, on-ground horticultural implementation, ecological restoration, civil, building development projects and facilities management within the within the Royal Botanic Gardens & Centennial Parklands Trusts. For the last fifteen years until 2015, he led the landscape and horticultural development of The Australian Botanic Garden, Mount Annan, set within the critically endangered Cumberland Plain Woodland. Similarly, his skills set was put to use planning botanic gardens in sensitive ecological communities within the National Parks network within Vietnam and Laos.

'Hands on' horticultural / landscape skills and ability have been the foundation of his career, which is combined with academic achievement in landscape architecture and strategic planning skills.

Recently, he formed his own Landscape / Horticulture design, construction and consultancy team with his wife Genevieve, who also holds formal qualifications in horticulture and bush regeneration with extensive experience working within the Cumberland Plain Woodland vegetation community of the Australian Botanic Garden, Mount Annan in South West Sydney.

Sydney Zoo planting strategy - OUTLINE
In general the plant selection has been identified as planting dominated by fast growing pioneer plants to help condition the soil and give quick impact. Native area 3.6Ha will be the most densely planted. It will be diverse in make up, combining plants with fast growth rates, ornamental qualities, insect and bird attracting, variety of open hot dry aspect to cool shaded and moist microclimates and offer opportunities for plant interpretation including Aboriginal interpretation. Native area 1.8Ha will be more sparsely planted than area 3.6Ha. Low growing, robust grass and shrub species with a mixture of some of the more ornamental species have been identified. Additionally, Eucalyptus molucanna will dominate the car park islands because of its capacity to deep root causing less damage to parking area and plant root systems. Native hydro seed 31.286Ha needs further discussion on desired tree canopy density. Three companies have been identified as having experience in this field with Cumberland Plain Woodland revegetation projects. They are Cumberland Plain Seeds http://www.cpseeds.com.au/, Greening Australia https://www.greeningaustralia.org.au/ and Toolijooa Environmental Restoration http://www.toolijooa.com.au/

Acacia species used across all areas as nurse plants can be selectively culled if required after a few years when 3-4m in diameter as some of the Eucalyptus species come through. This foliage can be used as suggested for feed. A succession plan will be a combination of what comes through via seedbank in soil plus supplementary planting to increase some diversity in the herb and grass layers. I suggest ripping a small section of soil in a few locations asap to see what may come up via the existing soil seed bank this year.
- Native area 3600m2 at 4.75 plants per square metre. Includes tree canopy of 3 trees per 100m2 plus 4 Acacia species per 100m2 to be used as nurse plants to be removed within 5 years.
- Native area 1800m2 at 3.47 plants per square metre. Includes tree canopy of 3 trees per 100m2 plus 4 Acacia species per 100m2 to be used as nurse plants to be removed within 5 years.
-Native Hydro seed area 31,286m2. 0.07 plants per square metre. (**This area needs further discussion)** Includes tree canopy of 3 trees per 100m2 plus 4 Acacia species per 100m2 to be used as nurse plants to be removed within 5 years.

Additional plants have also been added for their qualities as described above and also present on the site.

Site soils
The existing soil is a very important resource. A slashing program should be implemented asap where all construction will take place. This should be done frequently enough to ensure the biomass is kept to a minimum and to ensure weed seed does not increase. Vegetation mixed in with topsoil recovery stockpiles can lead to anaerobic breakdown, exposing the soil to toxicity problems. From our first look during the site visit, there is about 75mm average of good A horizon soil. It would be highly advantageous to set this soil aside, vegetation free in stockpiles as low as possible. This will be an important resource for your gardens as well as being a potentially good source of endemic plant seed. Tree protection zones TPZ should be established and fenced off during all construction works around areas identified to maintain vegetation cover. This fence line will extend 1M beyond the tree drip line. It is recommended that a Horticultural Consultant, restoration Ecologist or Bush Regenerator with a minimum of TAFE Certificate III in Land Management and significant experience (minimum of five years) in managing restoration projects be onsite to direct machinery operators. Areas identified for reintroduction of Cumberland Plain species where the soil has been damaged and compacted through construction works should be deep ripped 300 - 500mm along the contours if possible. Gypsum at recommended rates 2.5t/Ha should be applied and incorporated into the top 10mm of the deep ripped soil. At least 100mm layer of the A horizon stockpiled soil should be spread out on top, taking care not to compact the deep ripped soils. This can then be followed by a 10mm layer of compost followed by mulching. Low phosphorus compost suitable for Natives come in a range of products including Greenlife from ANL Australian Native Landscapes, Vitagrow from Menai Sand and Soil, Low Phosphorus compost from M Collins.
To each planting hole a low phosphorus fertilizer can be added to the recommended rates governed by pot size Eg Nutricote Pink.
Car park areas adjacent to islands could incorporate structural soils under the parking area. This would be a mixture of 75 - 25mm ballast plus 25% coarse sand. This improves overall plant vigour for the Eucalypt shade trees in this area.

Mulching
Use eucalypt or leaf mulch, be wary of seed source from mulched exotic plants. Mulched native fig trees are good to use as well. Ensure the mulch is well aged to avoid nitrogen draw down. Place mulch to a depth of 50 - 75mm, do not mulch against the trunks of plants. Trial leaving small patches of bare soil or windrows around 25cm wide to allow for endemic seed to germinate and grow, this will encourage a grass and herbaceous layer. This should be monitored closely for weed seed germination.

Pre-Planting grow out strategy
Trees can be ordered and grown under contract now, by companies such as Greening Australia. Focus on tree species and larger shrubs first and their availability. The decision will come down to a cost benefit analysis. A more established looking garden with larger plants will cost more due to nursing these plants for an extended period. It should not affect the planting densities as the plant sizes I have indicated are about 75% of actual size fully grown. Most of the grass species and smaller shrubs etc can be ordered a little later and delivered in tube stock. Additionally seed collection and availability may affect production, however 18 months is a good lead time for this size project. You will need to try and firm in a planting date as accurately as possible to avoid further holding costs and also avoiding plants becoming root bound in their pots. There is also the potential of transplanting some plants and growing these on. These will be identified by the growing contractor but could include difficult to propagate plants.

Existing and re vegetated Cumberland Plain Woodland (CPW) vegetation management

A comprehensive, detailed, site specific and ongoing Cumberland Plain Woodland Management Plan will be an initial requirement from Zoo Horticultural staff following appointment. It will be guided by the recommendations and guidelines within the former Department of Environment and Conservation (NSW). (2005). Recovering Bushland on the Cumberland Plain: Best practice guidelines for the management and restoration of bushland. Department of Environment and Conservation (NSW), Sydney. Ruth Burton.

Three key approaches to managing the identified CPW remnants will be to retain all existing native vegetation identified, protect any existing vegetation and manage in perpetuity the identified CPW remnants. These works will be funded as part of the ongoing maintenance program of the Zoo.

An assessment of the existing CPW stands, indicate its current condition as degraded with a mostly exotic under storey, and very little mid storey. This remnant CPW vegetation identified to be retained (REHAB AREAS PLAN) will be managed as part of the overall vegetation management plan for the Zoo.

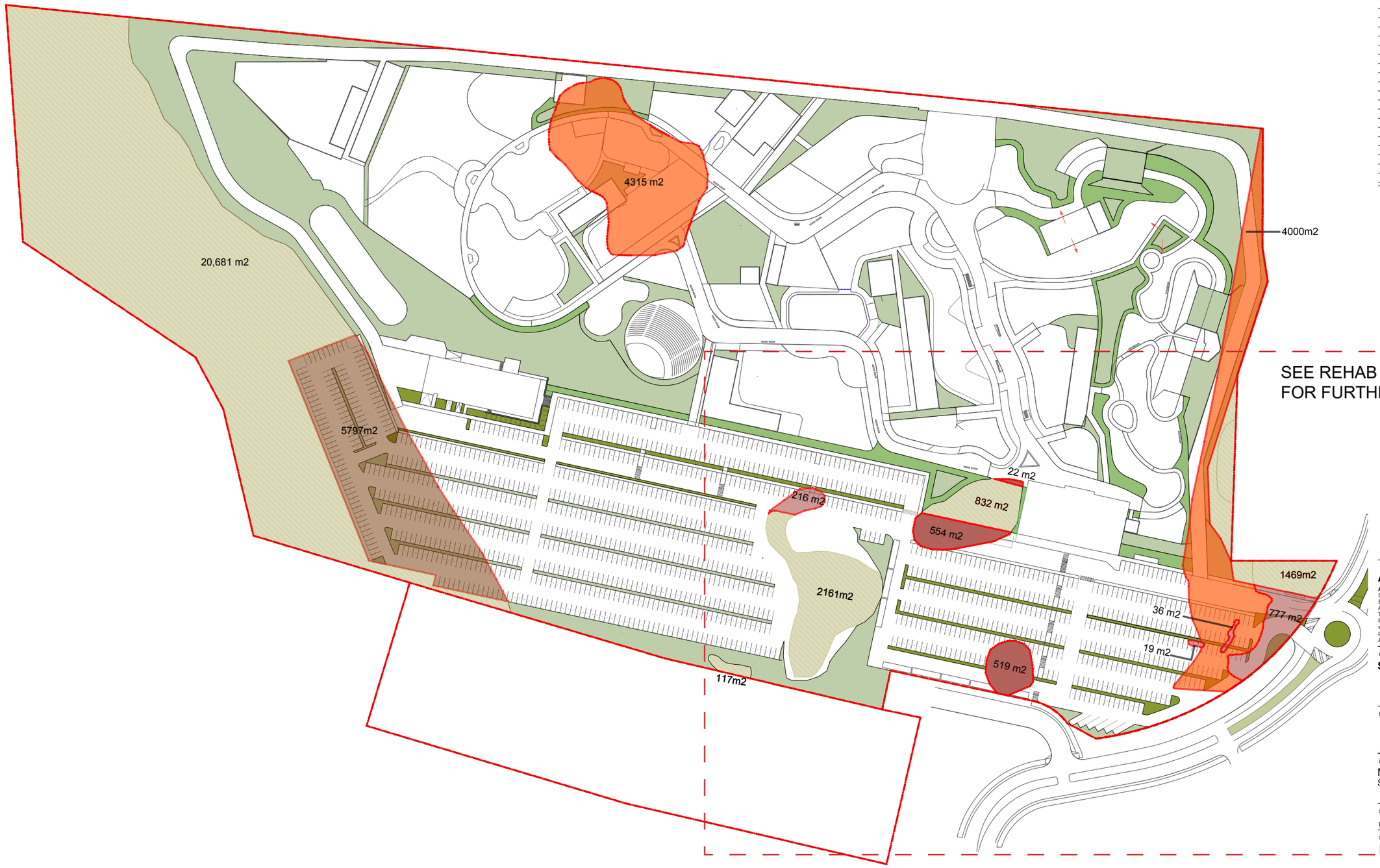
Management will initially protect the identified CPW stands from further degradation. This will include appropriate fencing barricades during construction and buffer zones around the areas to further reduce damage or contamination of these areas immediately. This will exclude machinery and equipment access and limit foot traffic. Additionally, run- off protection during construction will including contour grading where possible and silt barrier fencing to minimise soil and waterborne potential disease contamination. All machinery entering the site during construction will need to undergo a visual inspection by Zoo staff for cleanliness to limit potential for soil borne disease transfer from off site.

Once construction of the car park is completed, management of the CPW will include weed control, animal control and the regeneration of the natural vegetation. Weed control will include identifying and removing weed species already growing, weed sources, removing future weed problems as they arise. Animal control will need further assessment on the potential impact of pest and diseases. This will include specific natural and feral animal control measures where required, examples such as rabbit control, monitoring Grey Box psyllid outbreaks etc. Regeneration works supported by targeted planting of locally provenanced species to ensure genetic integrity will be done through contract or within the recruited Zoo Horticultural staff. These staff should have as a minimum TAFE Cert III in Bush Regeneration or Land Management and significant experience in working in Cumberland Plain Woodland vegetation communities. Similarly the revegetation and reestablishment of CPW works should be carried out as part of the Hydro or direct seeded contracts and other areas directly planted by suitable contractors or staff as stated above.

	Activity	Threats	Management
Planning	Retain existing vegetation	• Loss of habitat • Impacts of Zoo Master Planning	• Assessment of ecological significance • Surveying areas for signifaicance and retention • Mapping identified areas for influence on Zoo Master Planning
Immediate	Protect existing vegetation remnants	• Trampling of vegetation during car park construction • Rubbish dumping during construction • Trampling by foot traffic • Soil borne disease transfer • Waterborne disease transfer	• Construction site type mesh fencing to be installed around perimeter of identified areas of significance, including buffer zones during carpark construction. • Inspections carried out on all construction machinery for cleanliness by Zoo staff prior to entry on site • Contours and silt barriers to be installed to minimise soil and water run off into areas of significance • Bollard type fencing to be installed around perimeter of identified area to discourage foot traffic and rogue car parking opportunities upon completion of car park construction
Once car park complete	Manage vegetation in perpetuity	• Untrained or ill informed staff for ongoing management • Weed invasion - woody weeds, annual grasses, perennial grasses, herbaceous weeds, Scramblers and ground covers • Feral animals • Pest and disease • Isolated vegetation island effect • Loss of resources to continue CPW management in perpetuity	• Recruitment of suitably qualified and experienced staff or contractor to develop detailed site specific and live document for the ongoing vegetation management of the CPW. This will include measuring, monitoring and developing yearly programs. • Targeted weed control and management strategy • Woody weeds - controlled by cut and paint or tree injection methods with Glyphosate herbicide product, all seedlings will be hand pulled or spot sprayed with Glyphosate based herbicide. • Annual Grasses, perennial grasses, herbaceous weeds and scramblers should all be monitored closely and targeted prior to the production of seed. The usual method of removal will be hand weeding and or spraying with appropriate herbicide during growth periods. Individual plants to be bagged and removed off site to an appropriate location. • Revegetation and regeneration to be carried out by suitably qualified staff, supplementary targeted planting will be carried out with locally provenanced species • Further framework planting and Hydro or direct seeding within the vicinity will be encouraged with locally provenaced species to provide wider vegetation links and corridors across the zoo site. • Pest and disease monitoring and control will be to be carried out by suitably qualified staff and where needed apply for specific licences to carry out preferred control methods such as pesticide applications for Grey Box psyllid control. • Other vegetation management programs such as the use of fire in ecological burns will need specific site management programs by Zoo staff • Funding is committed to ensure management in perpetuity through ongoing recurrent budget as part of the maintenance program for the Zoo.

LEGEND

- SITE BOUNDARY
- EXISTING VEGETATION TO RETAIN (AS SHOWN)
- NATIVE PLANTING (3600m2)
- NATIVE PLANTING TYPE 1 (1800m2)
- NATIVE PLANTING HYDROSEEDED GRASSES (31,286m2)
- EXISTING CUMBERLAND PLAIN VEGETATION TO BE REMOVED **2367M2 (0.24hA)**
- EXISTING RIVER FLAT EUCALYPT FOREST VEGETATION TO BE REMOVED **5797M2 (0.58Ha)**
- EXISTING DERIVED NATIVE GRASS VEGETATION TO BE REMOVED
  NOTE: POOR CONDITION, NO OFFSET REQUIRED
  8315M2 (0.83Ha)



STATUS

FOR INFORMATION

NOTES

Check all dimensions and site conditions prior to commencement of any work, the purchasing or ordering of any materials, fitting, plant services or equipment and the fabrication of any components.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the landscape architect for clarification.

WARNING

DIAL BEFORE YOU DIG www.1100.com.au

Services shown on this drawing are approximate only. The exact location is to be confirmed on site by contractor prior to commencement of work.

REV	DATE	AMENDMENTS
A	1/12/15	FOR INFORMATION
B	4/12/15	FOR INFORMATION

ASPECT Studios™
ASPECT Studios Pty Ltd
Studio 61, Level 6, 61 Marlborough St
Surry Hills NSW 2010
Australia
T 02 9699 7182
F 02 9699 7192
www.aspect.net.au
aspectsydney@aspect.net.au
ABN 11 120 219 561

CLIENT

SYDNEY ZOO

PROJECT

DRAWING

Masterplan
Sheet 1 of 1

DRAWN	CHECKED	SCALE @ A1
BK | CD	KL	1:1000

DRAWING NO. REVISION

NATIVE PLANTING TYPES

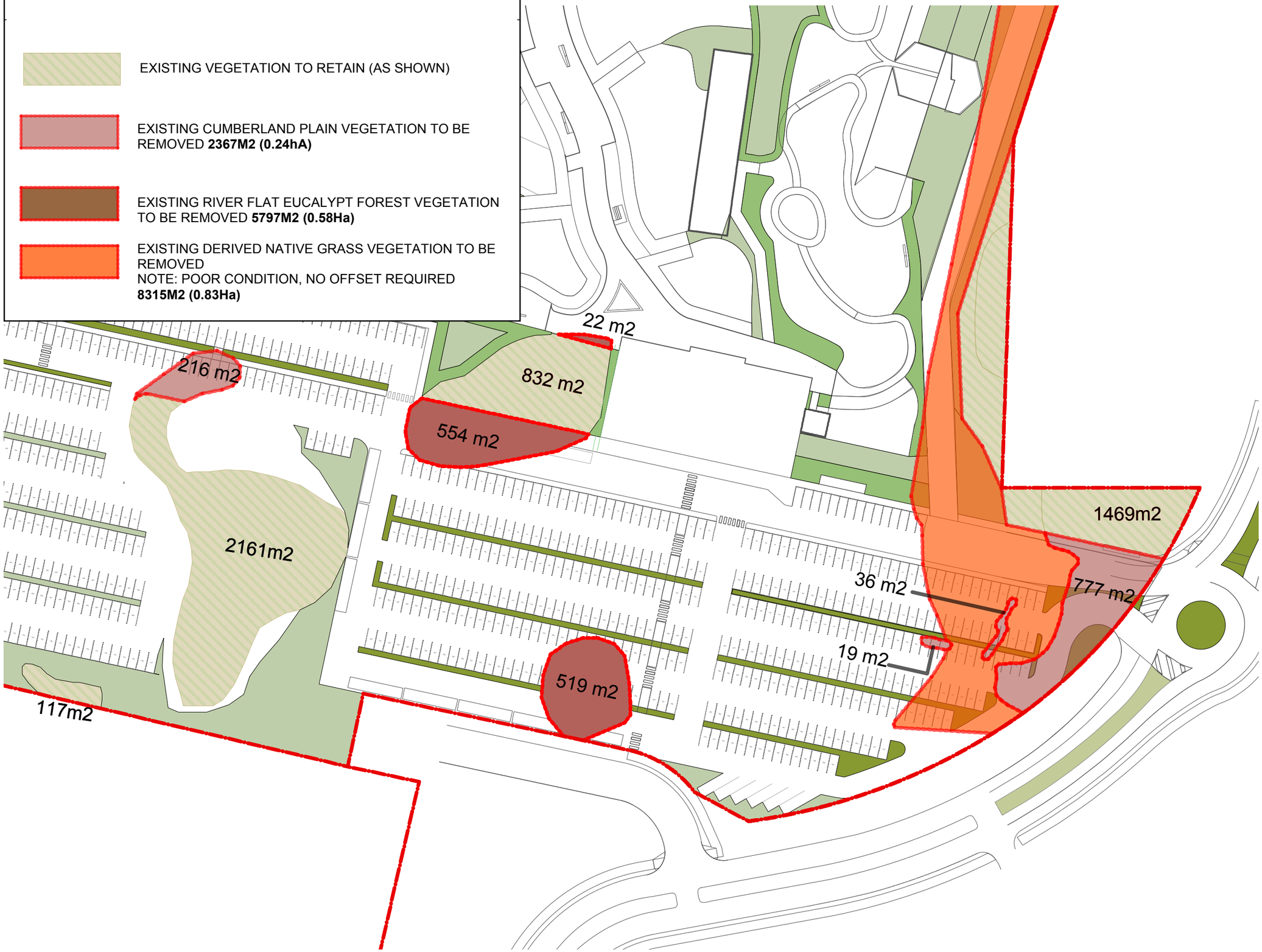
LEGEND

EXISTING VEGETATION TO RETAIN (AS SHOWN)

EXISTING CUMBERLAND PLAIN VEGETATION TO BE REMOVED **2367M2 (0.24hA)**

EXISTING RIVER FLAT EUCALYPT FOREST VEGETATION TO BE REMOVED **5797M2 (0.58Ha)**

EXISTING DERIVED NATIVE GRASS VEGETATION TO BE REMOVED
NOTE: POOR CONDITION, NO OFFSET REQUIRED
8315M2 (0.83Ha)



ASPECT Stud

ASPECT Studios Pty Ltd
Studio 61, Level 6, 61 Marlborough St
Surry Hills NSW 2010
Australia
T 02 9699 7182
F 02 9699 7192
www.aspect.net.au
aspectsydney@aspect.net.au
ABN 11 120 219 561

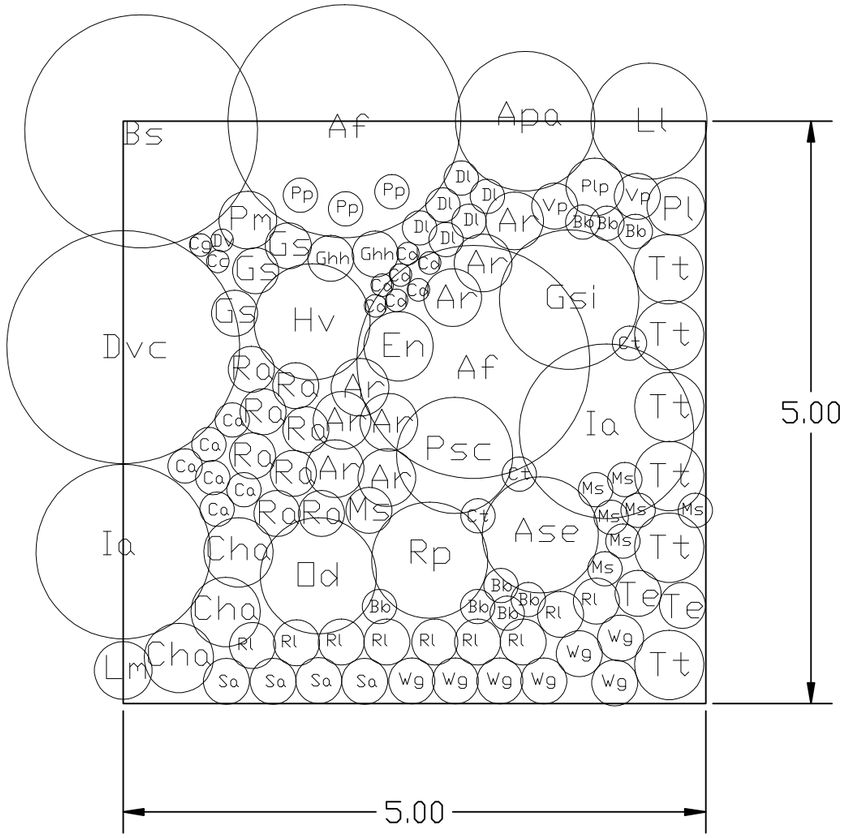
CLIENT

SYDNEY ZOO

PROJECT

DRAWING

REHAB AREAS



Planting area Native 3600m2

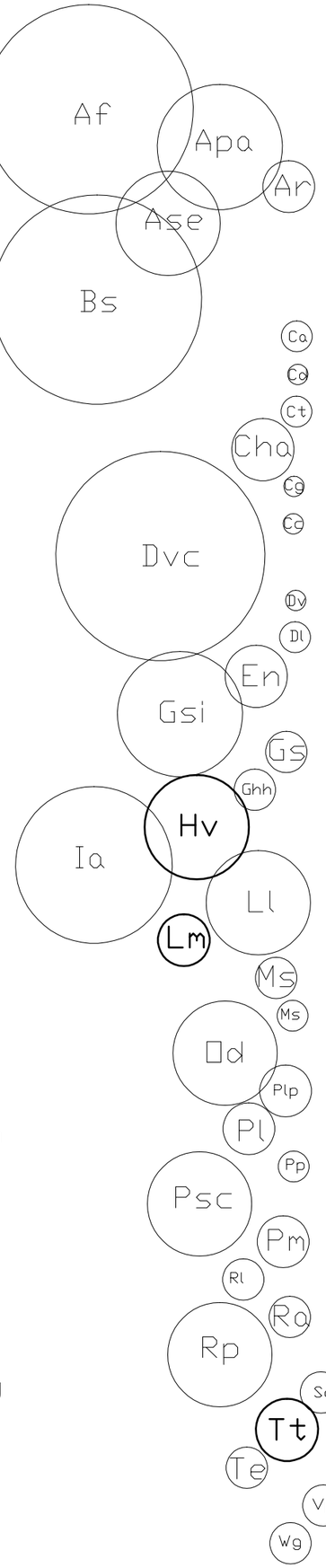
As indicated on the supplied plan (NATIVE PLANTING TYPES) this planting type will be close to paths and be part of the zoo experience. It will be diverse in make up, combining plants with fast growth rates, ornamental qualities, variety of open hot dry aspect to cool shaded and moist micro climates and offer opportunities for plant interpretation including Aboriginal interpretation. Canopy planting of Eucalyptus molucanna , E. tereticornis, Melaleuca stypheliodes at a ratio of 3:2:1 for this area based on 3 trees per 10x 10 m grid.

E. molucanna has been selected for areas adjacent to carpark because of its deep rooting structure, Melaleuca used in places where there is more moisture. Acacia parramattensis and A. decurrens at a ratio of 1:1 will provide quick growth rates, condition soil by fixing nitrogen and provide protection to other plants. These Acacias to be removed within 5 years.

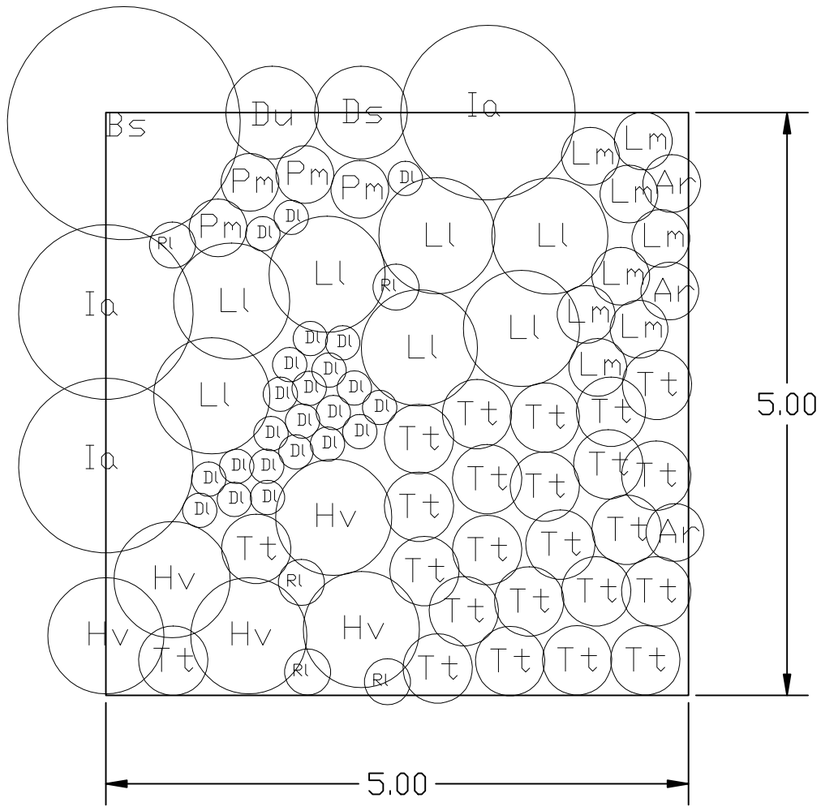
Based on a 5m x 5m grid as shown, (used for stail estimating only), 117 low shrubs and grasses are identified to provide an overall planting density of 4.68 plants per m2 for the 3600m2 area.

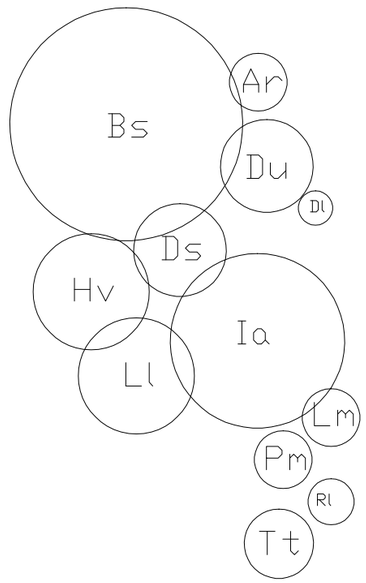
With the additional Eucalypt species of 3 per 10m2 plus 4 Acacia species per 10m2 will give a planting density of 118.75 plants per 5m x 5m grid. **Therefore the overall planting density will be 4.75 plants per m2 for the 3600m2 area.**

Shrub and grasses plant schedule 3600m2 / 25m2 = 144 x the above schedule
Eucalypts and Acacias plant schedule 3600m2 / 100m2 = 36 x tree rates as above



Planting area Native 3600m2	
Quantity	Name
2	Acacia floribunda
1	Acacia parramattensis
8	Aristida ramosa
1	Atriplex semibaccata
1	Bursaria spinosa
6	Centella asiatica
7	Cheilanthes distans
3	Chloris truncata
3	Chrysocephalum apiculatum
1	Clematis glycinoides
1	Commelina cyanea
1	Davesia visosa ssp. cuneata
1	Desmodium varians
6	Dianella longifolia
1	Einadia nutans
1	Gahnia sieberana
3	Geranium solanderi
2	Goodenia hederacea ssp. hedracea
1	Hardenbergia violacea
2	Indigophera australis
1	Lomandra longifolia
1	Lomandra multiflora ssp.multiflora
1	Mentha satureioides
7	Microlaena stipoides var. stipoides
1	Ozothamnus diosmifolius
1	Plectranthus parviflorus
1	Poa labillardieri var labillardieri
3	Pratia purpurescens
1	Prostanthera scutellarioides
1	Pultenaea microphylla
9	Ranunculus lappaceus
8	Rhodanthe anthemoides
1	Rubus parvifolius
4	Scaevola albida
6	Themeda triandra
2	Tricoryne elatior
2	Veronica plebeia
7	Wahlenbergia gracilis





Planting area Native 1 1800m2	
Quantity	Name
3	Aristida ramosa
1	Bursaria spinosa
1	Davesia ulicifolia
23	Dianella longifolia
1	Dillwynia sieberi
5	Hardenbergia violacea
3	Indigophera australis
7	Lomandra longifolia
8	Lomandra multiflora ssp.multiflora
4	Pultenaea microphylla
5	Ranunculus lappaceus
24	Themeda triandra

Planting area Native 1800m2

As indicated on the supplied plan (NATIVE PLANTING TYPES) most of this planting type is located with the car parking area, It will require sight lines to be maintained and also subjected to foot traffic. Low growing, robust grass and shrub species with a mixture of some of the more ornamental species have been identified. Additionally, Eucalyptus molucanna and E. tereticornis for shade and planting structure at a ratio of 2:1 for this area is based on a 10x 10 m grid. E. molucanna has been selected for the carpark islands because of its deep rooting structure. Acacia parramattensis and A. decurrens at a ratio of 1:1 will provide quick growth rates, condition soil by fixing nitrogen and provide protection to other plants. These Acacias to be removed within 5 years.

Based on a 5m x 5m grid as shown, 85 low shrubs and grasses are identified to provide an overall planting density of 3.4 plants per m2 for the 1800m2 area.

With the additional Eucalypt species of 3 per 10m2 plus 4 Acacia species per 10m2 will give a planting density of 86.75 plants per 5m x 5m grid. **Therefore the overall planting density will be 3.47 plants per m2 for the 1800m2 area.**

Shrub and grasses plant schedule 1800m2 / 25m2 = 72 x the above schedule
Eucalypts and Acacias plant schedule 1800m2 / 100m2 = 18 x tree rates as above

Shrub and grass plant schedule 3600m2

288	Acacia floribunda
144	Acacia parramattensis
1152	Aristida ramosa
144	Atriplex semibaccata
144	Bursaria spinosa
864	Centella asiatica
1008	Cheilanthes distans
432	Chloris truncata
432	Chrysocephalum apiculatum
144	Clematis glycinoides
144	Commelina cyanea
144	Davesia viscosa ssp. hederacea
144	Desmodium varians
864	Dianella longifolia
144	Einadia nutans
432	Geranium solanderi
288	Goodenia hederacea ssp. hederacea
144	Hardenbergia violacea
288	Indigophora australis
144	Lomandra longifolia
144	Lomandra multiflora ssp. multiflora
144	Mentha satureioides
1008	Microlena stipoides var. stipoides
144	Ozothamnus diosmifolius
144	Plectranthus parviflorus
144	Poa labillardiera var. labillardieri
432	Pratia purpurescens
144	Prostanthera scutellarioides
144	Pultenaea microphylla
1296	Ranunculus lappaceus
1152	Rhodanthe anthemoides
144	Rubus parvifolius
576	Scaevola albida
864	Themeda triandra
288	Tricoryne elatior
288	Veronica plebeia
1008	Wahlenbergia gracilis

Tree plant schedule 3600m2

72	Acacia decurrens
72	Acacia parramattensis
54	Eucalyptus moluccana
36	Eucalyptus tereticornis
18	Melaleuca styphelioides

Shrub and grass plant schedule 1800m2

216	Aristata ramosa
72	Bursaria spinosa
72	Davesia ulicifolia
1656	Dianella longifolia
72	Dillwynia sieberi
360	Hardenbergia violacea
216	Indigophora australis
504	Lomandra longifolia
576	Lomandra multiflora ssp.multiflora
288	Pultenaea microphylla
360	Ranunculus lappaceus
1728	Themeda triandra

Tree plant schedule 1800m2

36	Acacia decurrens
36	Acacia parramattensis
36	Eucalyptus moluccana
18	Eucalyptus tereticornis

Supplementary tree planting in this area will require further discussion.

Tree plant schedule 31,286m2

Ratio x 939 total

10%	94	Angophora subvelutina
10%	94	Corymbia maculata
5%	47	Eucalyptus amplifolia
5%	47	Eucalyptus baueriana
30%	281	Eucalyptus moluccana
30%	281	Eucalyptus tereticornis
10%	94	Melaleuca styphelioides

Acacia plant schedule 31,286m2

Ratio x 1251 total

50%	625	Acacia decurrens
50%	625	Acacia parramattensis

Native hydroseed area Native 31,286m2

This area has been identified as being hydro seeded. Alternatively this area could also be direct seeded. To establish biodiversity as much seed source can be taken from the extended plant schedule. Rates will be recommended by the chosen company. Companies with extensive experience on Cumberland Plain Woodland are Cumberland Plain Seeds http://www.cpseeds.com.au/ and Greening Australia https://www.greeningaustralia.org.au/. Toolijooa Environmental restoration http://www.toolijooa.com.au/ .Cumberland Plain seeds have a particular emphasis on Native Grass land restoration. Greening Australia can collect local seed and use their own seedbank for direct seeding to establish Cumberland Plain woodland understory species including Grasses.

(Supplementary tree planting in this area will require further discussion)

As per the previous specifications, tree planting density can be based on 3 tree species per 10 x 10 grid with supplementary Acacia parramattensis and A. decurrens at a ratio of 1:1 The Acacias will provide quick growth rates, condition soil by fixing nitrogen and provide protection to other plants. These Acacias to be removed within 5 years.

Tree species of 3 per 10m2 plus 4 Acacia species per 10m2 will give a planting density of 7 plants per 10m x 10m grid. **Therefore the overall planting density will be 0.07 plants per m2 for the 31,286m2 area.**

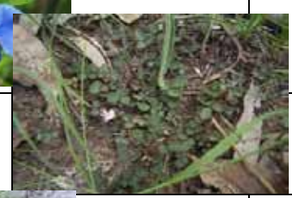
Tree plant schedule 31,286m2 / 100m2 = 312.86 x tree rate as described above. Producing a total of 939 tree species plus 1251 Acacia spp.

Sydney Zoo planting schedule

Species	Symbol	Common Name	H X W 3/4	Type (Tree/Shrub /Grass /herb /fern/Gcover/climber	Flower period	Flower colour	Misc	Recommended	Other comments			
Angophora bakeri	Ab	Narrow-leaved Apple	6 x 5	Tree	Late summer	white	Street tree dry sandy soils	N				
Angophora floribunda	Af	Rough-barked Apple	10 x 10	Tree	August to Feb	Cream	Along water courses grows well on shallow compact soils	Y				
Angophora subvelutina	As	Broad-leaved Apple	12 x 10	Tree	Summer		River flats	Y	tough plant when established			
Corymbia maculata	Cm	Spotted Gum	15 x10	Tree	May - Sep	white	while young insect control train to one leader fast growing	Y	can drop limbs			
Eucalyptus amplifolia	Ea	Cabbage Gum	12 x 10	Tree			Frost hardy suited to heavy soils					
Eucalyptus baueriana	Eb	Blue Box	12 x 10	Tree			Water seeker	N				
Eucalyptus crebra	Ec	Narrow-leaved ironbark	12 x 8	Tree			slower growing than maculata	Y				
Eucalyptus eugenioides	Ee	Thin-leaved Stringybark	12 x10	Tree								
Eucalyptus moluccana	Em	Grey Box	15 x 10	Tree			Deep roots / car park	Y				
Eucalyptus tereticornis	Et	Forest Red Gum	15 x12	Tree				Y				
Acacia decurrens	Ad	Sydney green wattle	5 x 3	Small tree	late winter spring	Bright Yellow balls	Fast growing pioneer plant	Y	takes over removal before to big			
Acacia floribunda	Af	White Sally	3 x2	Small tree	late winter spring	Pale yellow rods	Fast growing pioneer plant	y				
Acacia parramattensis	Ap	Parramatta wattle	5 x 3	Small tree	Summer	pale balls	Fast growing pioneer plant	y	takes over removal before to big			
Acacia implexa	Ai	Lightwood	4 x 1.5	Small tree	Summer	pale balls	Fast growing pioneer plant	y				
Bursaria spinosa	Bs	Blackthorn	3 x 2	Shrub	Summer	White	Fast growing pioneer plant	y	very attractive if regularly pruned			
Daviesia ulicifolia	Du	Gorse bitter pea	1 x .8	Shrub	May to Jan	yellow orange pea flowers	Prickly	y				
Dillwynia sieberi	Ds	Prickly Parrot Pea	1 x .8	Shrub	Sep to Nov	yellow orange pea flowers	Prickly	y				
Dodonaea viscosa subsp. cuneata	Dv	Wedge-leaf Hop-bush	1.5 x 1.5	Shrub			Fast growing pioneer shrub. Traditionally used by Aboriginal Australians to treat toothache, cuts and stingray stings.	y				
Indigofera australis	Ia	Australian Indigo	1.5 x 1.5	Shrub	Sept Nov	Bright Purple	The Australian aborigines crushed the leaves and added these to water to kill or stun fish and eels	y	very attractive in flower after prune right down to ground level			
Pultenaea microphylla	Pm	-	.5 x .5	Shrub	Late winter spring	yellow orange pea flowers		y				
Aristida ramosa	Ar	Purple Wiregrass	1 x .5	Grasses			Tussocky perennial to 1.2 m high	y				
Aristida vagans	Av	Threeawn Speargrass	.6 x .4	Grasses			Erect tufted or rhizomatous perennial to 0.8 m high	y				
Bothriochloa decipiens	Bd	Redleg Grass	.6 x .4	Grasses				n				

Species	Symbol	Common Name	H X W 3/4	Type (Tree/Shrub /Grass /herb /fern/Gcover/climber	Flower period	Flower colour	Misc	Recommended	Other comments			
Bothriochloa macra	Bm	Red Grass	.6 x .4	Grasses			Red grass is a warm-season perennial grass that has green or reddish leaves. It grows close to the ground with little foliage higher than 10 cm if left un-mowed or un-grazed. It produces slender reddish-purple flowering stems, which grow up to 80 cm in summer and early autumn. red grass is extremely hardy and can withstand long periods of drought. During the winter, red grass enters a dormant period.	yes				
Chloris divaricata	Cd	Slender Chloris		Grasses			Occurs on a variety ofsoils, often in disturbed habitats	y				
Chloris truncata	Ct	Windmill Grass	.3 x .3	Grasses			The plant spreads moderately fast, but is relatively hard to propagate	y				
Chloris ventricosa	Cv	Plump windmill brass	.8 x .5	Grasses			Glabrous tufted perennia l widespread on clay soil	y				
Carex appressa	Ca	Tall Sedge	1 x .5	Grasses			full sun, boggy conditions, fast growing, long lived, very hardy plant 50cm apart	y				
Cymbopogon refractus	Cr	Barbed-wire Grass	1 x .3	Grasses				y				
Cyperus gracilis	Cg	Slender Flat-sedge	.3 x .3	Grasses				y				
Dichelachne micrantha	Dm	Shorthair Plumegrass	1 x .3	Grasses			Tufted, year long green perennial with dense, fluffy inflorescences	y				
Echinopogon caespitosus var. caespitosus	Ec	Tufted Hedgehog Grass	.8 x .4	Grasses			Poor sandy soils. Species of open habitat	y				
Echinopogon ovatus	Eo	Forest Hedgehog Grass	.5 x .4	Grasses			rhizome spreading Widespread in wet sclerophyll woodland and by creeks. Flowers Aug.-Jan. Fruits Jan.-May.	y				
Eriochloa pseudoacrotricha	Ep	Early Spring Grass	.8 x .4	Grasses			A widespread native species which tends to intergrade with E. crebra annual or short lived perennial to 1 m high	y				

Species	Symbol	Common Name	H X W 3/4	Type (Tree/Shrub /Grass /herb /fern/Gcover/climber	Flower period	Flower colour	Misc	Recommended	Other comments			
Juncus usitatus	Ju	Common Rush	1 x .8	Grasses			While it can be a nuisance in poorly drained pastures its fine, arching stems have led to its use in landscaping and wetland rehabilitation. Due to its adaptation to waterlogged soil it can be an early indicator of dryland salinity. can be the dominant component of its habitatcommonly found in association with other sedges and rushes, grasses and other native and weedy wetland species. It also occurs under Casuarina cunninghamiana, Eucalyptus camaldulensis and other eucalypts	y				
Lomandra filiformis	Lf	-	.5 x .2	Grasses	Oct to Nov	cream to bright yellow	compact perrenial herb becomes noticeable at flowering time. Grows in sparse clumps	Yes . Seed could be difficult to collect				
Lomandra longifolia	Ll	Spiny-head Mat-rush	1 x 1	Grasses				y				
Lomandra multiflora subsp. multiflora	Lm	-	.5 x .5	Grasses	Spring	creamy, yellow flowers occur in clusters around the base of the leaves during spring.	Ideal feature in a rockery or as a foreground plant	y				
Microlaena stipoides var. stipoides	Ms	Weeping Meadow Grass	.5 x .3	Grasses			Damp shady areas provides good habitat and seed for native birds and can be used as an ornamental in rockeries or under trees	y				
Poa labillardieri var. labillardieri	Pl	Tussock Grass	1 x .5	Grasses	Spring and summer		dense perennial tussock moister areas. Poa grass was used by Aborigines as a fibre source to make string for nets and for bags, baskets and mats and it makes for an attractive rockery plant [38]. The plants are an important food source and provide habitat for wildlife	y				

Species	Symbol	Common Name	H X W 3/4	Type (Tree/Shrub /Grass /herb /fern/Gcover/climber	Flower period	Flower colour	Misc	Recommended	Other comments			
Rytidosperma caespitosum	Rc	Ringed Wallaby Grass	.8 x .4	Grasses			generally restricted to sunny habitats, from grassland to desert	y				
Rytidosperma racemosa var. racemosa	Rr	-	.3 x .3	Grasses			common on disturbed habitats, where it can be locally common, usually in lightly shaded habitats, often found under trees, occasionally in full sun.	y				
Themeda triandra	Tt	Kangaroo Grass	1.2 x .6	Grasses	Oct to Dec	Bronze during summer	Full sun If a neater appearance is required, the clumps can be cut back in early spring to encourage new green growth.					
Brunoniella australis	Ba	Blue Trumpet	.1 x .1	Gc and Cl	Mis Spring - early summer	Mauve - Blue	Moist full sun	y				
Centella asiatica	Ca	Indian Pennywort	.1 x .3	Gc and Cl			Creeping perennial herb wet grassy areas Pharmaceutical properties and cooking	y	 			
Clematis glycinoides	Cg	Old Man's Beard	3 x .1	Gc and Cl	Aug to Nov	white	Headache vine climber	y				
Commelina cyanea	Cc	Creeping Christian Wandering jew	.1 x .2	Gc and Cl	warmer months	Blue flowers	Wetter shaded areas of forests, leaves were eaten by the first white settlers in Australia, to alleviate scurvy from lack of vitamin C. There are lots of references all over the internet to Commelina cyanea being edible.	y	 			
Desmodium varians	Dv	Slender Tick-trefoil	.1 x .1	Gc and Cl			Prostrate or climbing herb. Aboriginal insect repellant	y				
Dianella longifolia	Dl	Blueberry Lily	.8 x .3	Gc and Cl		Dark blue star followed by purple berries	full sun or part shade, most soil conditions, dry conditions, fast growing, long lived, very hardy	y	  			
Dichondra repens	Dr	Kidney Weed	.1 x .3	Gc and Cl				y				
Geranium solanderi	Gs	Native Geranium	.5 x .4	Gc and Cl			Edible roots, full sun	y				

Species	Symbol	Common Name	H X W 3/4	Type (Tree/Shrub /Grass /herb /fern/Gcover/climber	Flower period	Flower colour	Misc	Recommended	Other comments			
Glycine clandestina	Gc	Twining Glycine		Gc and Cl	throughout the year	pink to blue	Moist shaded	y				
Glycine microphylla	Gm	Small-leaf glycine		Gc and Cl			Moist grassy areas in scrublands. Stoloniferous stems	n	can become a nuisance growing over other plants and difficult to remove because of tubers			
Goodenia hederacea subsp. *hederacea*	Gh	Ivy Goodenia	.6 x .4	Gc and Cl	August to April	yellow	Part shade prostrate or upright	y				
Hardenbergia violacea	Hv	Purple Coral Pea	3 x 1	Gc and Cl	winter to spring	purple	fast growing low maint full sun to part shade	y				
Phyllanthus virgatus	Pv	-	.4x.4	small shrub			medicinal	y				
Pratia purpurascens	Pp	Whiteroot	.15 x .3	Herbaceous			medicinal. Damp sheltered position	y				
Plectranthus parviflorus	Plp	Cockspur flower	.4 x .5	Herbaceous	All year	blue and white	habitat is shady areas but can grow in full sun	y	can thin out long stems over time			
Veronica plebeia	Vp	Creeping Speedwell	.1x.4	Herbaceous	oct to Jan	pale blue		y				
Wahlenbergia gracilis	Wg	Sprawling Bluebell	.4x.4	Herbaceous	spring flowering	blue	very attractive when in flower and will drop seed and spread grow on mass	y				
Additional plants not on the list												
Scaevola albida	Sa	Fan flower	.2 x .4	Ground cover	Spring	White to pale blue		y				
Rhodanthe anthemoides	Ra	Chamomile sunray	.25 x .4	herbaceous shrub	Long flowering period from Winter to early Autumn			y				
								y				
Melaleuca styphelioides								y				
Hakea sericea								y				
Acacia pubescens	Apu	Downy wattle	1.5 x 1.2		Spring	Yellow		y				
Solanum								y				
Chrysocephalum apiculatum	Cha	common everlasting, Yellow buttons	.3 x .6	Low shrub GC	Summer to Autumn	mass yellow	Sunny position. Cuttings can be taken from site	y				
Ranunculus lappaceus	Rl	Buttercup	.4x.4	Herbaceous	Spring and summer	yellow		y				
Rubus parvifolius	Rp	Australian Raspberry	1.5 x 1	Scrambler			Keep pruned	y				
Cheilanthes distans	Cd	Bristle cloak fern	.3 x .2	Fern				y				
Ozothamnus diosmifolius	Od	Rice flower	1 x 1	shrub	All year	Mass white		y				
Mentha satureioides	Ms	Native pennyroyal	.2x.4	GC	Spring	White		y				
Atriplex semibaccata	Ase	Berry saltbush		GC	Spring and summer			y				
Einadia nutans	En	Climbing salt bush	.5 x .75	Gc	Bright red berries early Autumn			y				
Prostanthera scutellarioides	Psc	Mint Bush	1 x 1	Shrub	Spring	Purple		y