









DISCLAIMER

The Sumatran Tiger Vegetation Report has been compiled by Green & Dale Associates Landscape Architects & Zoo Designers for Taronga Zoo.

This document outlines the Existing and Proposed Vegetation for the planned Sumatran Tiger Adventure project. This plan was developed with a view to providing a high quality landscape that invokes the experience of Asian rainforest habitats whilst using as many Australian species. The aim is to stimulate an authetnic aesthetic experience for visitors of the Sumatran tiger enclosure whilst being environmentally sustainable and enabling local biodiversity.

This vegetation report provides a description of the intended landscape design including the identification of existing and significant vegetation as well as describing the planting thematics for each exhibit. Issues identified during the consultation process have been considered including the transplanting of significant trees where possible.

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1.0 INTRODUCTION

Sumatra's rain forests are quite diverse and contain levels of species diversity comparable to those of the richest forests in Borneo and New Guinea and are much richer than Java, Sulawesi, and other islands in the Indonesian Archipelago.

Large, buttressed trees dominated by the Dipterocarpaceae family characterize Sumatra's lowland rain forests. Woody climbers and epiphytes are also abundant. The lowland rain forests of Sumatra support 111 dipterocarp species, including 6 endemics. The emergent trees, which can reach 70 m tall, are also dipterocarps (Dipterocarpus spp., Parashorea spp., Shorea spp., Dryobalanops spp.) and, to a lesser extent, species in the Caesalpiniaceae family (Koompasia spp., Sindora spp., and Dialium spp.). Dipterocarps dominate the canopy layer as well. Other canopy and understory tree families that are common include Burseraceae, Sapotaceae, Euphorbiacae, Rubiaceae, Annonaceae, Lauraceae, and Myristicaceae (Whitten et al. 2000).

Ground vegetation usually is sparse-mainly small trees and saplings of canopy species-and herbs are uncommon. Figs (Moraceae) are also common in the lowland rain forest. There are more than 100 fig species in Sumatra, and each species usually is pollinated exclusively by a single figwasp (Agaonidae) species. Sumatra once contained pure stands of rot- and insect-resisting ironwood (Eusideroxylon zwageri) forests. Ironwood is a member of the laurel family and is distributed throughout southern Sumatra, Kalimantan, and the Philippines.

Ironwood forests are dominated by Eusideroxylon zwageri but may have also contained Shorea, Koompasia, or Intsia species as emergents (Whitten et al. 2000).

Other plants common to these forests are epiphytes. Common epiphyte families found in Sumatra include Orchidaceae, Gesneriaceae, Melastomaceae, Asclepidiaceae, and Rubiaceae. Rubiaceae. (WWF - Southeastern Asia: Island of Sumatra in Indonesia).

The overall objective of the design team is to create a high quality experience, re-creating an "authentic" rainforest that is ecologically based. The tropical rainforest of South Sumatra, using the Way Kambas National Park (near Lampung) as a template, provides the main basis for the project.

Whilst many of the Sumatran plants are not readily available in Australia, it is intended to use plants that are from the region (including tropical north Australia), and provide a 'rainforest environment' unique to Taronga Zoo. This will entail retention of the site's existing large canopy trees where possible and introducing rainforest planting where possible.

WALLS



2.0 OVERALL CONCEPT

The Overall Landscape Concept Plan as shown provides an overview of the general planting that is proposed for the new Sumatran Tiger enclosure at Taronga Zoo, NSW.

The new enclosure consists of 4812 square metres of which 3565 requires landscaping with the remainder area to be hardscaped (paving or other).

The landscape design seeks to integrate realistic village architecture with a Sumatran rainforest Landscape, for both the visitor and the Sumatran Tiger. The landscape depicts the habitat of the Way Kambas National Park, in Western Sumatra, and a village built in traditional Lampung wood style of Sukadarno Village houses.

The existing site is ideal for representing a tropical rainforest due to its mature plantings of subtropical vegetation. The challenge for the design team is to maintain all-important vegetation during construction of major structures and infrastructure for the project.



3.0 EXISTING VEGETATION

This plan outlines the existing vegetation that is marked for either retention, removal or transplantation.

Seventy-seven (78) trees have been nominated for removal due to the following:

- Being an unsuitable species for the intended planting theme of Sumatra,
- A majority of the trees are within the construction footprint or too close to construction to enable successful retention.

Thirty nine (39) trees have been nominated for retention due to the following:

- They are suitable for the Sumatra theme, being tropical Australia, Malay Peninsula species.
- These trees will be subject to tree protection measures to ensure they remain viable during construction and beyond. Refer to tree protection.

Seventeen (17) trees have been nominated for relocation/transplanting:

- To allow construction to take place.
- These trees are to be incorporated into the proposed design.
- Other trees that can be transplanted, but unsuitable for use in the proposed design will be relocated to a designated location within Taronga Zoo, to be confirmed by the Taronga Zoo Horticultural department.

All trees, which have been nominated for retention, will require protection throughout development, as they may be the proposed works. Details of the likely impacts and mitigation measures which may be appropriate are provided in the Arboricultural Assessment Report, prepared by Tom Hare, Consulting arborist, April 2015.

Information on existing vegetation and onsite assistance has been provided by Peter Donoghue, Landscape Construction Officer, Capital Works Infrastructure and Operations.











TREE IDENTIFICATION

		RAN TIGER ADVENTURE PROJECT TAR	ONGA ZOO 2014					
		& Dale Associates 21 April 2015	ENTUDE DOO LEGT TO SELECT	A 700 5				
		G PLANTING (SUMATRAN TIGER ADV	_			T ===	I == I	
TREE NO.	CODE	BOTANICAL NAME	COMMON NAME	QTY	CONDITION	RETAIN	REMOVAL	TRANS.
1/2 94	Ac	Acer pentaphyllum (244L)	Chinese Maple Tree	2	Unsuitable spp		4 (TO ()	2 (T01,02)
	Aj	Albizia julibrissin	Pink Silk Tree	7	Good	F (T00 00 11 /7 /0)	1 (T94)	
8 ,9,10,11, 62,67, 68,	Am	Aleurites moluccana	Candlenut	4	Excellent	5 (T08,09,11,67,68)	2 (T10,62)	/ (T02.0/.0E
3 /4/ 5/21	Ap	Arenga pinnata	Sugar Palm	3	Excellent	2 (T12 12 1/)		4 (T03,04,05,
12/13/14 15	Ar Ba	Archontophoenix cunninghamiana Brachychiton acerifolius	Bangalow Palm Illawarra Flame Tree	1	Good Good	3 (T12,13,14) 1 (T15)		
16	Bd	Brachychiton discolor	Lacebark Tree	1	Good	1 (113)	1 (T16)	
8,95,96,101,102,103,104	Во	Bambusa oldhamii - Clump	Oldhamii	7	Good	4 (T95,102,103,104)	1 (110)	3(T18,96,10
126,19	Cf	Caesalpinia ferrea	Leopard Tree	2	Good		1 (T19)	1 (T126)
6,22	Ca	Caryota spp.	Fishtail Palm	2	Good		1 (117)	2 (T06, 22
23	Cd	Cedrus deodara	Deodar Cedar	1	Unsuitable spp		1 (T23)	2 (100, 22
24	Cs	Celtis sinensis	Hackberry	1	Unsuitable spp		1 (T24)	
25 ,26,27	*C	Cedrus /Cupressus spp.	Паскрепту	3	Unsuitable spp		3 (T25, 26, 27)	
28 ,29, 30	Сс	Cupressus cashmeriana (242L)	Bhutan Cypress	3	Unsuitable spp	 	3 (T28,29,30)	
31,32, 33	Er	Eucalyptus robusta	Swamp mahogany	3	Poor	+	3 (T31,32,33)	
34,54	Ee	Euodia elleryana	Corkwood	2	Good	+	2 (T34, 54)	
36	Fe	Ficus elastica	Rubber Bush	1	Poor		1 (T36)	
37	Fl	Ficus lyrata	Fiddle-leaf Fig	1	Good	1 (T37)	1 (130)	
38-48 incl, 53	Fm	Ficus macrocarpa var. hillii	Hill's Weeping Fig	12	Excellent	3 (T38,39,53)	9 (T40-48 incl)	
49	Fmi	Ficus macrophylla (178L)	Moreton Bay Fig	1	Good	1 (T49)	7 (140-40 met)	
50,51,52,55,56	Fr	Ficus rubiginosa	Port Jackson Fig	5	Excellent	3 (T50,51,52)	2 (T55,56)	
57,58,59	Fo	Ficus obliqua (179L)	Small-leaved Fig Tree	3	Excellent	3 (130,31,32)	3 (T57,58,59)	
60	Gb	Gingko biloba	Gingko	1	Good		3 (137,30,37)	1 (T60)
61	Gf	Glochidion ferdinandı	Cheese Tree	1	Good		1 (T61)	1 (100)
63,64,65,66,69,70-72	Нр	Harpullia pendula	Tulipwood	7	Good	2 (T66,69)	5 (T63,64,70,71,72)	
73	Hd	Hovenia dulcis (268L)	Japanese Raisin Tree	1	Good	1 (T73)	3 (100,04,70,71,72)	
74,128	Hf	Hymenosporum flavum	Native Frangipani	2	Good	1 (170)	2 (T74,128)	
75 - 77	Jp	Juniper spp.	rianio i rangipani	3	Unsuitable spp		3 (T75, 76, 77)	
35	Lch	Livistonia chinensis		1	Fair		1(T35)	
78	Li	Ligustrum indicum	Privet	1	Fair	1	1 (T78)	
78/79	Lc	Lophostemon confertus	Queensland Bush Box	2	Good	1	2 (T79,80)	
81/82	Ma	Magnolia spp.	Queenstand Bush Box	2	Unsuitable spp	1	2 (T81, 82)	
83	Md	Mallotus discolor	Yellow Kamala	1	Excellent	1 (T83)	2 (101, 02)	
84	Mh	Malus halliana (283L)	Hall's Crabapple	1	Unsuitable spp	1 (100)	1(T84)	
85,86, 87	Mg	Melaleuca quinquenervia (71L)	Broad-leaved paperbark	3	Poor	2 (T85,86)	1 (T87)	
88	Мр	Murraya paniculata	Mock orange	1	Good	2 (100,00)	1 (T88)	
89	Мс	Michelia champaca	Golden Champaca	1	Good	1	1 (T89)	
90/91	Mu	Musa abassinian	Banana	2	Good	1	1 (107)	2 (T90,91
92/93	0a	Olea europaea subsp. Africana	African Olive	2	Unsuitable spp	1	2 (T92,93)	2 (170,71
20	Pr	Phoenix roebelenii	Pygmy date palm	1	Good	1	2 (172,70)	1 (T20)
97/98	Pc	Pyracantha crenulata	Firethorn	2	Good	2 (T97, 98)		1 (120)
135	Ri	Rhaphiolepis indica	Indian Hawthorn Clump	1	Good	1(T135)		
99/100	Sb	Salix babylonica	Willow Weeping	2	Unsuitable spp	.(.100)	2 (T99,100)	
17	Sf	Semiarundinaria fastuosa (254L)	Narihira Bamboo	1	Good	<u> </u>	_(177,100)	1 (T17)
105 - 107	St	Stenocarpus sinuatus (175L)	Firewheel Tree	3	Good	1 (T105)	2 (T106,107)	1 (117)
108 - 117	Sr	Syagrus romanzoffiana	Cocos Palm	10	Good	8 (T110-117 incl)	2 (T108,109)	
118	Tc	Thunbergia coccinea (267L)	Scarlet Thunbergia	1	Good	5 (1.10 117 lifet)	1 (T118)	
119	Tl	Tristaniopsis laurina	Water Gum	1	Good	<u> </u>	1 (T119)	
120, 122, 123, 124	Vi	Viburnum spp.	ater ourn	4	Unsuitable spp	 	4 (T120-124 incl.)	
07,125,127,129-134 ,136	Us	Unknown spp		10	Poor		10 (T07,125,127,129-134 incl,	
		TOTAL		12/		39	136) 78	17
		TOTAL THE DETAINED		134	200/	37	18	17
		TREE RETAINED		39	29%	 		
	ļ	TREE REMOVAL TRANSPLANTING TREE	+	78 17	58% 13%			

4.0 SCHEDULE OF EXISTING VEGETATION

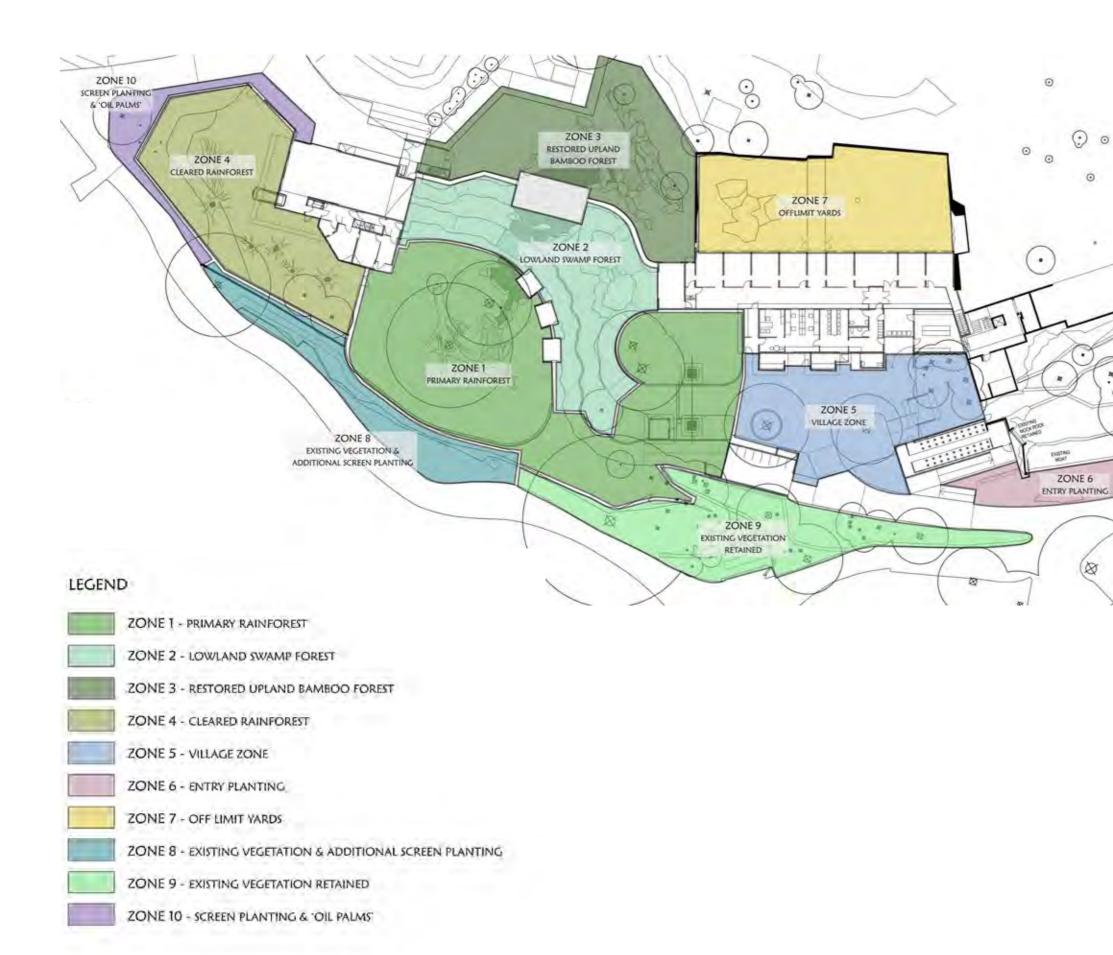
This shown table indicates the existing vegetation that is marked for removal, transplantation or retention. Note that each tree has a number and is listed according to it's number in both the table and the previous plan on page 2.

The total quantity of existing trees has been counted as 134. The percentage breakdown for removal, transplantation and retention of these existing trees is as follows:

- * 13% marked for Transplantation
- * 58% marked for Removal
- * 29% marked for Retention

There are a number of existing trees listed as historically significant as per the original Tree Survey. These are shown as follows:

- * 2 x Acer pentophyllum 244L
- 3 x Cupressus cashmeriana 242L
- 1 x Ficus macrophylia 178L
- * 3 x Ficus obliqua 179L
- * 1 x Hovenia dulcis 268L
- * 1 x Malus Halliana 283L
- 3 x Melaleuca Quinqunervia 71L
- 1 x Semiarundinaria fastuosa 254L 3 x Stenocarpus Sinuatus 175L
- 1 x Thunbergia caccinea 267L



5.0 PLANT ZONES

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This plan indicates the proposed planting zones for the Sumatran Tigers enclosures.

The main planting zones are as follows:

Zone 1	Primary Rainforest
Zone 2	Lowland Swamp Forest
Zone 3	Restored Upland Bamboo Forest
Zone 4	Cleared Rainforest
Zone 5	Village Zone
Zone 6	Entry Planting
Zone 7	Off Limit Yards
Zone 8	Existing Vegetation, Additional
	Screening
Zone 9	Existing Vegetation Retained
Zone 10	Screen Planting & 'Oils Palms'

6.0 PLANT ZONE DESCRIPTIONS

The following descriptions provide an thematic overview of the four main exhibit area:

ZONE 1 - PRIMARY RAINFOREST



ZONE ONE PRIMARY RAINFOREST

Mature rainforest dominated by large Ficus tree, dense evergreen cover of rainforest vegetation. Fallen tree limbs found around Ficus tree allows the tiger to climb onto the overhanging branches. Along the wire mesh walls of the exhibit Bamboo and Brush cherry form a strong evergreen edge. Strong groundcover of Swamp Lilies, Pollia, Flax Lily and Palm Grass.

ZONE 2 - LOWLAND SWAMP FOREST



ZONE TWO LOWLAND SWAMP FOREST

Dense swamp forest trail leading down to a wetland with rock edges, with Pandanus-Melaleuca dominated forest, grasses and transplanted Sugar palms. The swampy grasslands and forests also provide important habitat for many water birds, Woody climbers and epiphytes are also abundant. The swampland edges comprise of Taro, Cunjevoi and Elephants Ear as well as rushes. On the drier areas Palms are located.

ZONE 3 - RESTORED BAMBOO FOREST



ZONE THREE RESTORED UPLAND BAMBOO FOREST

Elevated sandstone escarpment with cascading falls, which lead into a shallow creek and pool, large clumps of tree bamboo and tall shrubs. Here Giant bamboo, Oldham's bamboo and Black Bamboo are found in thickets, with wide tracks to allow the tiger to pass through. The floor of this forest has varied substrate due to the scarp edge and watercourse, ranging from flat rocks, scree and riverworn pebbles.

ZONE 4 - CLEARED RAINFOREST



ZONE FOUR CLEARED RAINFOREST (PALM OIL STORY)

Deforestation and remnant oil palms. Landscape of former terraces for growing oil palms, now left as abandoned land with old tree trunks and log piles, abandoned palm oil materials such as packing crates. The land has been taken over by villagers Growing maize and overrun with Palm grass. A small number of Oil Palms can be represented by a juvenile/managed form of Pygmy Palm and Jelly Palm on the exhibit terraces.



ZONE 1 PRIMARY FICUS FOREST

TREES Ficus carica Ficus lyrata Harpephyllum caffrum Harpullia pendula Harpephyllum caffrum Hymenosporum flavum Syzygium cumini Syzygium samarangense PALMS Arenga pinnata Licuala ramsayii Phoenix roebelenii SHRUBS Alpinea coerulea Alpinea zerumbet Boehmeria nivea Calocasia esculenta sub Tarro Calocasia gigantica Eupomatia laurina Hedychium horsfieldii Mallotus philippensis Michelia figo Michelia champaca Philodendron selloum Randia benthamiana Raphis excelsa Schefflera actinophylla BAMB00 Bambusa glaucescens

Bambusa multiflex

Bambusa Oldhamii

Curculigo capitulata Cymbopogon citratus

Dianella caerulea Dianella longifolia Dietes robinsoniana Liriope muscari

Persicaria odorata Pollia crispata

Setaria palmifolia

Quisqualis indica Lonicera hildebrandiana

EPIPHYTES

VINES

Pogotherum panicurem

GROUNDCOVER & GRASSES

Curcuma australasca Foeniculum vulgare Persicaria odorata Teucrium marum

HERBACEOUS GROUNDCOVERS



ZONE 2 LOWLAND SWAMP & FOREST TRAIL

TREES

Artocarpus heteropyllus Bombax ceiba

Eusideroxylon zwageri

Ficus lyrata Ficus platypoda

Harpephyllum caffrum

Harpullia pendula Hymenosporum flavum

Jagera pseudorhus

Santalum spicatum

Syzygium australis

Syzygium jambos Syzygium leuhmannii

Syzygium samarangense

PALMS

Arenga pinnata Caryota mitis

Howea forsteriana

Licuala ramsayii

SHRUBS

Alocasia brisbanensis Alocasia macrorrhiza

Alpinea calcarata

Calocasia gigantica

Clerodendron floribundum

Cordyline fruiticosa

Cyperus papyrus

Eupomatia laurina

Laelia sp

Pandanus tectorius

Philodendron selloum

Randia benthamiana Raphis excelsa

Schefflera arboricola

BAMB00

Bambusa Oldhamii

Bambusa tulda

Dendrocalmus asper cv 'Hitam'

Phyllostachys nigra

Thysanolaena maxima **GROUNDCOVERS & GRASSES**

Carex appressa

Crinum pedunculatum

Curculigo capitulata

Dietes robinsoniana

Gahnia sieberiana

Helmholtzia glaberrima

Imperata cylindrica

Isolepsis nodosa

Libertia paniculata Liriope muscari 'Just right®

Persicaria odorata

Pollia crispata

FERNS Asplenium australasicum

Blechnum nudum Cyathea cooperii

Doodia aspera

Piper-navae hollandiae

AQUATICS

Baumea articulata Nelumbo nucifera Thalia dealbata

VINES

Aphanopetalum resinosum

Berchemia scandens

Epipremnum pinnatum 'Aureum'

Ficus watkinsiana

Lonicera hildebrandiana

Quisqualis indica EPIPHYTES

Dendrobium falcorostrum

Dendrobium sulawesiense

Medinilla magnifica

Phalaenopsis amabilis

Phalaenopsis bellina

ZONE 3 RESTORED UPLAND BAMBOO FOREST

TREES

Artocarpus heterophyllus

Ficus lyrata

Ficus platypoda

Podocarpus elatus Syzygium australis

Syzygium cumini

PALMS

Howea forsteriana Licuala ramsayii

SHRUBS

Alocasia brisbanensis

Alocasia macrorrhiza

Alpinea coerulea

Cordyline rubra

Cordyline stricta

Cyperus papyrus

Raphis excelsa

Radermancheria sinica

BAMB00

Bambusa Oldhamii

Bambusa tulda

Semiarundinaria fastuosa

Thysanolaena maxima

GROUNDCOVERS & GRASSES

Carex appressa

Curculigo capitulata

Cymbopogon citratus

Dianella caerulea

Dianella longifolia

Helmholtzia glaberrima

Imperata cylindrica

Isolepsis nodosa

Pogotherum panicurem

Setaria palmifolia

FERNS

Asplenium australasicum Blechnum nudum

Cyathea cooperii

AQUATICS

Baumea articulata

Nelumbo nucifera Thalia dealbata

VINES

Aphanopetalum resinosum Berchemia scandens

HERBACEOUS GROUNDCOVERS

Curcuma australasca Foeniculum vulgare

Nepeta cataria Persicaria odorata



ZONE 4 CLEARED FOREST

TREES/PALMS

Avocado

Phoenix roebelenii

Butia capitata

Musa

SHRUBS

Alocasia macrorrhiza

Alpinea coerulea Alpinea zerumbet

Alpinea calcarata

Curculigo capitulata

Dietes robinsoniana

Hedychium horsfieldii

Hymenocallis littoralis

Setaria palmifolia

Maize/Corn

BAMB00

Bambusa glaucescens

Bambusa multiflex

Pogotherum panicurem

GROUNDCOVERS & GRASSES

Curculigo capitulata

Mentha spicata Persicaria odorata

rei sicai la odol ata

Pollia crispata

Dietes robinsoniana Setaria palmifolia

HERBACEOUIS GROUND COVER EXHIBITS

Acide Glycyrrhizique Nepeta camphorata

Nepeta cataria

Foeniculum vulgare

Persicaria odorata



ZONE 5 VILLAGE

TREES

Artocarpus heterophyllus

Avocado sp

Harpephyllum caffrum Hymenosporum flavum

Musa

Santalum spicatum Syzygium cumini

PALMS Butia capitata

Caryota mitis SHRUBS

Alpinea coerulea Alpinea galanga Alpinea zerumbet Boehmeria nivea

Calocasia esculenta sub Tarro

Hedychium horsfieldii Liriope muscari 'Just right® Luculia gratissima

Mallotus philippensis Michelia figo

Michelia champaca Raphis humilis

Liriope muscari 'Just right®

Pogotherum panicurem

VINES

Ficus watkinsiana Quisqualis indica

Lonicera hildebrandiana EPIPHYTES/ORCHIDS

Dendrobium falcorostrum Dendrobium sulawesiense

Medinilla magnifica

FERNS

Asplenium australasicum Blechnum nudum

ZONE 6 ENTRY PLANTING

TREES

Syzygium cumini Syzygium australis PALMS

Arenga pinnata SHRUBS

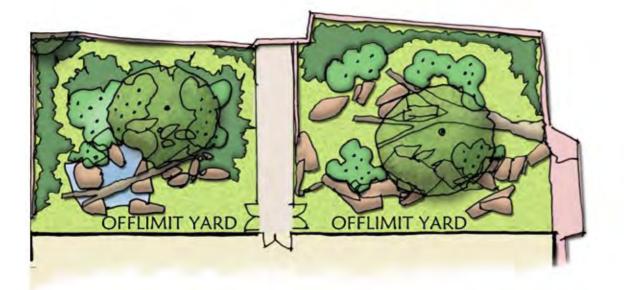
Hedychium horsfieldii Michelia champaca Alpinea galanga Alpinea zerumbet

Liriope muscari 'Just right®

BAMB00

Bambusa Textilis 'Fasca'

Bambusa tulda



ZONE 7 OFF-LIMIT YARDS

SHRUBS

Alpinea coerulea

Alpinea galanga Alpinea zerumbet

Boehmeria nivea

Calocasia esculenta sub Tarro BAMB00

Bambusa tulda

Dendrocalamus asper cv 'Hitam'

Bambusa multiflex

Semiarundinaria fastuosa **GROUNDCOVERS & GRASSES**

Cymbopogon citratus

Dianella caerulea Persicaria odorata

Setaria palmifolia

Thysanolaena maxima HERBACEOUIS GROUND COVER

Acide Glycyrrhizique Nepeta camphorata

Nepeta cataria Foeniculum vulgare

Persicaria odorata

ZONE 8/9/10 SCREEN PLANTING OVERALL SITE

Retain all groundcover planting where possible.

Areas to provide infill planting amongst existing vegetation and dense screen planting for zones

Eusideroxylon zwageri Ficus platypoda

Ficus pumila Harpephyllum caffrum

Harpullia pendula Hymenosporum flavum Koompassia excelsa Syzygium leuhmannii

Syzygium paniculatum

Syzygium cumini BAMB00

Bambusa multiflex

Bambusa Textilis 'Fasca' Dendrocalamus asper cv 'Hitam' **PALMS**

Arenga pinnata

Butia capitata to be planted around external edges of Zone 4

SHRUBS

Alocasia brisbanensis Alocasia macrorrhiza Alpinea calcarata Alpinea coerulea Alpinea galanga Alpinea zerumbet Michelia figo

GROUNDERCOVERS & GRASSES

Dianella caerulea Setaria palmifolia Thysanolaena maxima

Michelia champaca

7.0 PLANTING SCHEDULES

TREES							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Artocarpus heterophyllus	Jackfruit Tree	15m	4 m	As shown ALL	200mm pot		
Bombax ceiba	Kapok	12m+	12+ x 9-12m		300mm pot		
Ficus benjamina	Weeping Fig	15m+	15+m x 12-15m		300mm pot		
Ficus carica	Common Fig	6m	6 x 6m		200lt		
Ficus lyrata	Fiddle Leaf Fig	12-15m	15-20m	"	300mm pot		
Ficus platypoda	Dwarf Rock Fig	8m	8 x 5m		300mm pot		
Harpephyllum caffrum	Wild plum	6-15m	6 -15 x 15m	"	100lt		
Harpullia pendula	Tulipwood	5-6m	7-10 x 4m	"	100lt		
Hymenosporum flavum	Native Frangipani	8m	8 x 4m		100lt		
Musa acuminata	Banana	3-6m	3-6 x 3m		100lt		
Persea americana	Avocado	5-8m	3-4.0m		300mm pot		
Santalum spicatum	Sandalwood	2-6m	1-3m		300mm pot		
Syzygium australis	Brush Cherry	8m	8 x 6m		100lt		
Syzygium cumini	Jambu	12-15m	5-8m	"	100lt		
Syzygium luehmannii	Lily Pily	8-10m	5-4m	"	100lt		
Syzygium paniculatum	Magenta Cherry	5-8m	4-3m	"	100lt		
Syzygium samarangense	Jambu Cincalo	12m	4-4m	"	100lt		

SHRUBS							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Alocasia brisbanensis	Cunjevoi	1.5m	1.5-2.0m	1/m2	200mm pot		
Alocasia macrorrhiza	Elephant Ear	1-3m	2.0m	1/m2	200mm pot		
Alpinia caerulea	Shell Ginger	1.0-2.0m	2.0m	1/m2	200mm pot		
Alpinia zerumbet	Red Butterfly Ginger	1.0-1.5m	1.5m	2/m2	200mm pot		
Boehmeria nivea	The Ramie	1-2.5m	1.0m	2/m2	200mm pot		
Calocasia gigantea	Elephant Ears	1.5-3.0 m	2.0m	1/m2	200mm pot		
Clerodendrum floribundum	Lolly Bush	3-5m	3m	-	150mm pot		
Cordyline fruiticosa	Cordyline	2-3m	1-2m	-	25lt		
Cordyline fruticosa 'Rubra'	Red Cordyline	2-3m	1-2m	-	25lt		
Cyperus papyrus	Paper Reed	1.5-2.0m	0.5-1.0m	1/m2	200mm pot		
Hedychium horsfieldii	Java Ginger	1m	1.0m	1/m2	150mm pot		
Mallotus philippensis	Red Kamala	10-15m	5-8m	-	150mm pot		
Michelia figo	Port Wine magnolia	3-4m	2.0m	-	25 lt		
Michelia champaca	Champak	10m	10 x 5m	-	200lt		
Pandanus tectorius	Screw pine	4-5m	3m	-	300mm pot		
Philodendron selloum	Tree Philodendron	2m	3m	-	25lt		
Randia benthamiana	Native Gardenia	3-4m	2.0m	1/m2	200mm pot		
Rhapis excelsa	Bamboo Palm	3-4m	2.0-3.0m	1/m2	300mm pot		
Radermachera sinica	Emerald Tree	9m	4.5m	1/m2	45lt		
Rothmannia globosa	Tree Gardenia	4-7m	3.0 - 4.0m	1/m2	200mm pot		
Schefflera actinophylla	Umbrella Tree	6-10m	4m	1/m2	25lt		
Schefflera arboricola	Dwarf Umbrella Tree	3-4.5m	4m	1/m2	25lt		

BAMB00							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Bambusa textilis 'Fasca'	Dark Weavers Bam- boo	9-12m		1/m2	100lt		
Bambusa glaucescens	Bamboo	3-6m	1.5-2.0m	2/m2	300mm pot		
Bambusa multiflex	Hedge Bamboo	4.5m	4.5 x 5m	2/m2	300mm pot		
Bambusa oldhamii	Giant timber bamboo	10-12m	10-12 x 2-3m	1/m2	100lt		
Bambusa tulda	Bengal Bamboo	12-24m	4m	1/m2	100lt		
Dendrocalamus asper 'Hitam'	Black Asper	25m	4m	1/m2	150lt		
Semiarundinaria fastuosa	Narihira Bamboo	7.5m	3m	1/m2	45lt		
Thysanolaena maxima	Tiger Grass	2.0-3.0m	1.0-1.5m	3/m2	200mm pot		

PALMS							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Arenga pinnata	Sugar palm	9 - 12m	5.0m	As shown ALL	300mm pots		
Butia capitata	Jelly Palm	4.5 - 6m	3.0 - 4.5m	"	45lt		
Caryota mitis	Fishtail Palm	8m	8 x 4m	"	45lt		
Howea forsteriana	Kentia Palm	10m	10 x 6m	"	45lt		
Licuala ramsayi	Fan Palm	15m	2.0m	"	45lt		
Phoenix roebelenii	Pygmy palm	2-3m	1.5m	"	45lt		

TREES							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Carex appressa	Tall Sedge	0.5 - 1.2m	0.5-1.2m x 0.5- 1m	6/m2	150mm pot		
Curculigo capitulata	Palm Grass	0.6-1.2m	0.6-1.2m x 1.2 - 1.8m	2/m2	150mm pot		
Cymbopogon citratus	Lemon Grass	1.8m	1.8 x 1.2m	6/m2	150mm pot		
Dianella caerulea	Flax Lily	.4m	.4 x .4m	6/m2	150mm pot		
Dianella longifolia	Flax Lily	0.8m	0.3-0.8 x 0.5m	6/m2	150mm pot		
Dietes robinsoniana	Fortnight Lily	1.5 - 1.8m	1.5 - 1.8m x 1.50 - 2.00m	6/m2	150mm pot		
Gahnia sieberiana	Rough Saw Sedge	2m	2m x 2m	6/m2	150mm pot		
Helmholtzia glaberrima	Stream Lily	0.5 - 1.5m	0.5 - 1.5m	6/m2	150mm pot		
Imperata cylindrica	Sedge	0.10 - 0.50m	0.10 - 0.50m	6/m2	150mm pot		
Isolepsis nodosa	Blady Grass	0.5 - 1.5m	0.5 - 1.5 x 0.6 - 2m	6/m2	150mm pot		
Liriope muscari 'Just Right'	Lilyturf	0.6m	0.6 x 0.45m	6/m2	150mm pot		
Pollia crispata	Pollia	0.6m	0.6 x 2m	6/m2	150mm pot		
Pogotherum panicurem	Malay pygmy bamboo	0.3m	0.3 - 1m	2/m2	150mm pot		
Polygonatum odoratum	Fragrant Solomon's seal	0.85m	.85 x 0.3m	6/m2	150mm pot		
Setaria palmifolia	Palm Grass	1.8m	1.8m	4/m2	150mm pot		

7.0 PLANTING SCHEDULES continued...

AQUATICS							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Baumea articulata	Jointed rush	1 - 2m	1 - 2m x 1.00 - 2.00m	6/m2	150mm pot		
Nelumbo nucifera	Lotus	1m	1.0 x 1.0m	2/m2	200mm pot		
Thalia dealbata	Powdery thalia	3.0m	3.0 x 2.0m	2/m2	200mm pot		

FERNS							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Asplenium australasicum	King Fern	1.3m	1.3 x 0.8m	As Shown	200mm pot		
Blechnum nudum	Fishbone Water Fern	1m	1.0 x 1.0m	6/m2	150mm pot		
Cyathea cooperi	Lacy Tree Fern	2-5m	1-3m	As shown	300mm pot		
Doodia aspera	Rasp Fern	0.35m	0.5m	6/m2	200mm pot		
Plaqtycerium superbum	Staghorn Fern	1.8 - 2.4m	2.0m	2/m2	150mm pot		
Platycerium bifurcatum	Common Staghorn Fern	0.45 - 0.6m	0.6m	2/m2	150mm pot		
Polysticum sp	Shiny Holly	0.45m	0.45 - 0.75m	6/m2	150mm pot		

VINES / CLIMBERS							
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size		
Aphanopetalum resinosum	Gum Vine	2-3m lenghts	2m	1/m2	150mm pot		
Berchemia scandens	Rattan Vine	6 - 8m lenghts	6 - 8 x 1.5 - 3.5m	1/m2	150mm pot		
Ficus watkinsiana	Strangler Fig	50m+ lengths	15-30m	1/m2	300mm pot		
Piper novae-hollandiae	Native Pepper Vine	10m lengths	4m	1/m2	150mm pot		
Quisqualis indica	Rangoon Creeper	10m lengths	3m	1/m2	300mm pot		
Lonicera hildebrandiana	Giant Burmese Hon- eysuckle	3m lengths	2m	1/m2	150mm pot		

EPIPHYTES/ORCHIDS	EPIPHYTES/ORCHIDS								
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size				
Dendrobium falcorostrum	Beech Orchid	0.15m	0.15 x 0.15m	As shown ALL	150mm pot				
Dendrobium sulawesiense	Orchid	0.5m	0.5 x 0.4m		150mm pot				
Medinilla magnifica	Showy Medinilla	0.5 - 1.2m	0.5 - 1.2 x 0.5 - 1.0m	n .	150mm pot				
Neoregelia carolinae	Brushing Bromeliad	0.2 - 0.4m	0.2 - 0.4 x 0.2 - 0.4m		150mm pot				
Phalaenopsis amabilis	Moth Orchid	0.45m	0.15m x 0.3- 0.45m		150mm pot				
Phalaenopsis bellina	West Sumatran Orchid	0.45m	0.15m x 0.3- 0.45m		150mm pot				
Tillandsia usneoides	Spanish moss	Cascading Epi- phyte			150mm pot				
Laelia sp	Laelia Orchids	0.45m	0.15m x 0.3- 0.45m		150mm pot				

HERBACEOUIS GROUND COVER EXHIBITS					
Botanical Name	Common Name	Tree height (m)	Ht/spread (m)	Density per sq.m	Pot Size
Glycyrrhiza glabra	Liquorice Root	1.0 - 2.0m	1.0m	4/m2	150mm pot
Curcuma australasica	Turmeric	0.5 - 1m	0.5m	4/m2	150mm pot
Nepeta cataria	Catnip	0.6m	0.6m	4/m2	150mm pot
Nepeta cataria	Catnip	0.6m	0.6m	4/m2	150mm pot
Foeniculum vulgare	Fennel	1.5m	1.0m	4/m2	150mm pot
Persicaria odorata	Vietnamese Mint	0.15 - 0.3m	Spreading	4/m2	150mm pot
Teucrium marum	Cat thyme	0.3 - 0.9m	0.45m	4/m2	150mm pot
Mentha spicata Spearmint	Spearmint	0.6m	0.6 x 1.0m	4/m2	150mm pot

8.0 PRELIMINARY ESTIMATES OF PROPOSED VEGETATION

The preliminary estimate of trees, shrubs, groundcovers and palms to be used on site for the proposed site is as follows:

Palms 40 units
Trees 40 units
Groundcovers 6500 units
Shrubs 1000 units

The new planting will ensure evergreen cover of the site similar to its present state, which will ensure the native onsite fauna still have a movement corridor.