TARONGA
CONSERVATION SOCIETY AUSTRALIA

Taronga Zoo - African Savannah & Congo

Landscape Report 07/06/2017

tonkinzulaikhagreer ARCHITECTS

Green & Dale Associates
landscape architects &
zoological design

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1.0 INTRODUCTION

THE AFRICAN SAVANNAH

The African Savannah is a tropical or subtropical woodland ecosystem characterised by the trees being sufficiently small or widely spaced so that the canopy does not close.

The Africa Savannah precinct will show the great diversity of Savannah animals and plant life and will demonstrate a strong connection to the unique habitats, culture and contexts attached to the respective landscapes and vegetation.

This is the habitat of the Giraffe, Zebra, Lion, Ostrich. Meerkat and Fennec Fox

THE CONGO FOREST

The primary characteristics of African tropical forests are their extremely lush growth, high species diversity, and complex structure. The diversity is often so great that a single tree species cannot be identified as dominant in an area.

Relatively large trees, such as Ironwood, Iroko, and Sapele predominate. Forest trees grow so close together that their crowns overlap, forming a canopy that limits the amount of light that falls beneath them. A few larger trees, called emergent trees, break out above the thick canopy.

This is the habitat of the Eastern Lowland Gorilla and Okapi.

LANDSCAPE CONCEPT PLAN

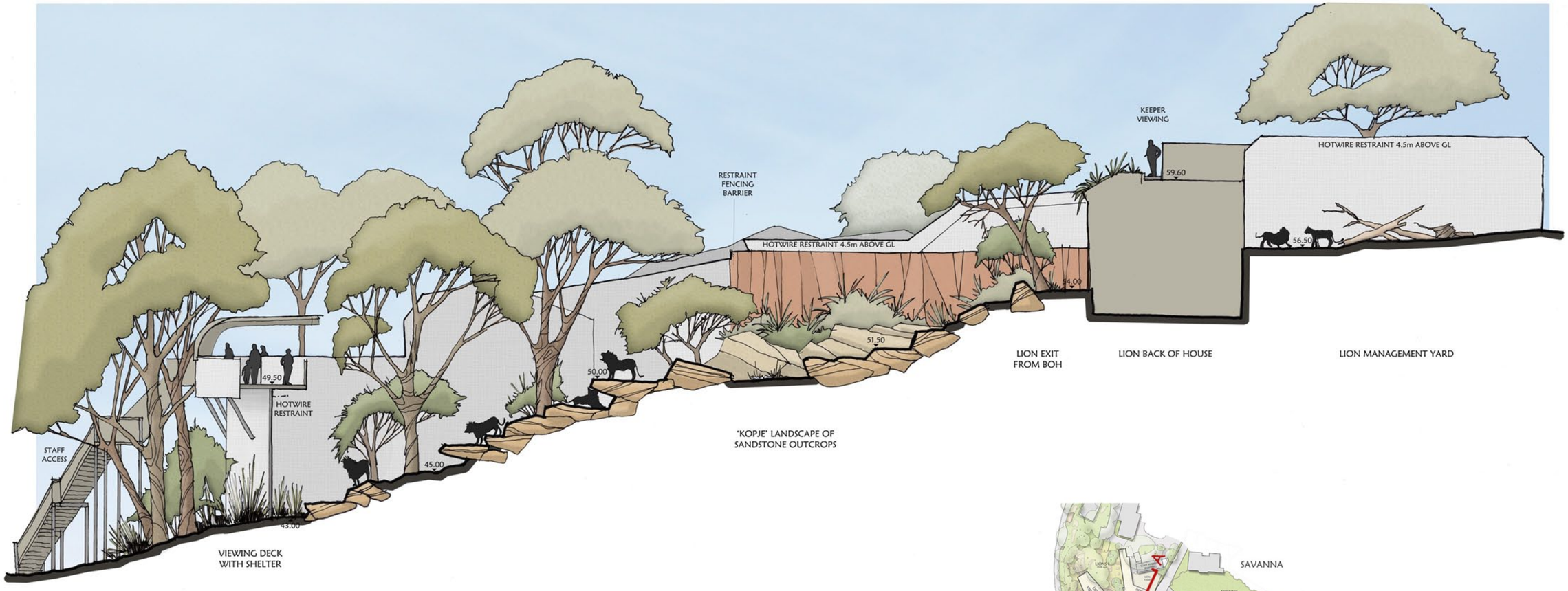
2.0 OVERALL CONCEPT

The Overall Landscape Concept Plan as shown provides an overview of the general planting that is proposed for the new African Savannah and Congo Precinct at Taronga Zoo, Sydney.

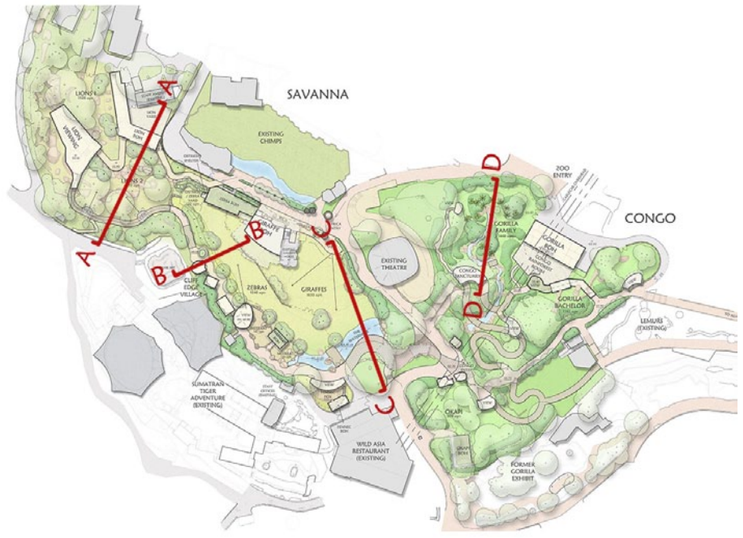
The landscape design seeks to integrate realistic village architecture with a African Savannah and Congo Forest Landscape, for both the visitor and the animal inhabitants. The landscape depicts the habitat of the Serengeti/Kenya and the eastern zone of the Congo, in Central Africa.

The site chosen for the Savannah is ideal for representing an open grassland due to its open flat nature and mature plantings of sub-African vegetation. The Congo forest utilises a semi steep site with a high density of rainforest trees which create a closed canopy. Central to both habitats is the African Waterhole - The waterhole is where the magic happens. On the savannahs of Africa, it is to the waterhole that the birds and wildlife flock. It is also the meeting place where the forests of the Congo reach down, where forest animals share the waterhole. It is the meeting place of Africa.

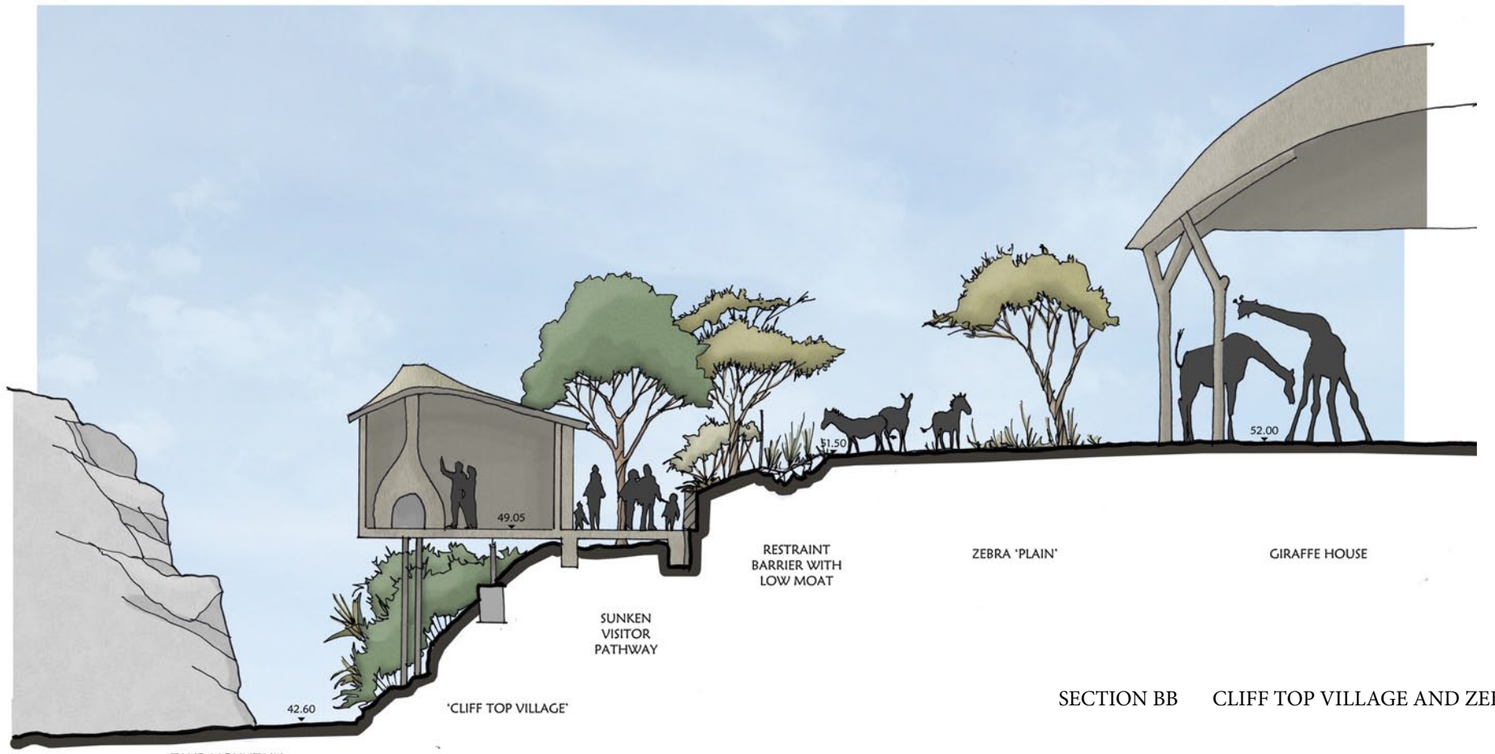
The challenge for the design team is to maintain all-important vegetation, including heritage vegetation, during construction of major structures and infrastructure for the project.



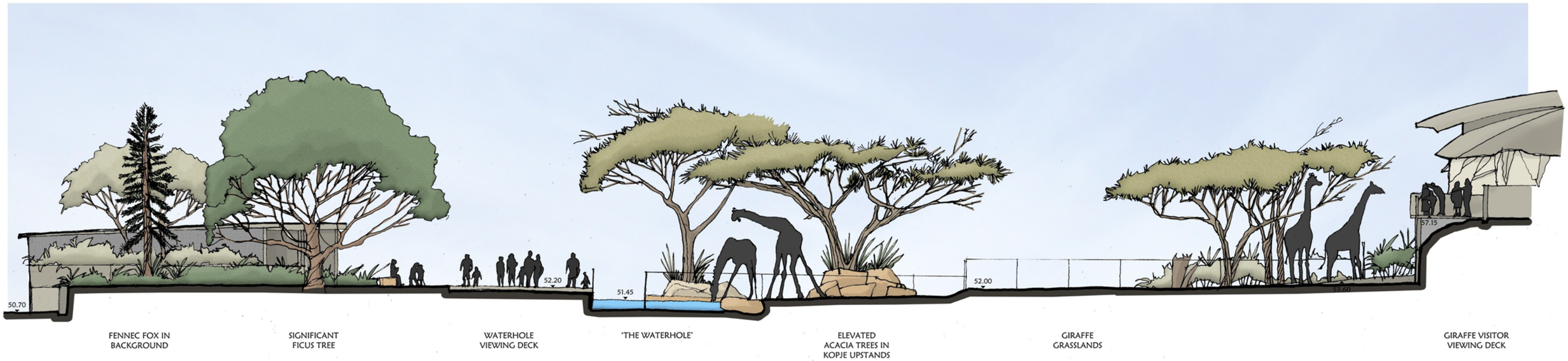
SECTION AA LION ENCLOSURE 2 'KOPJE' LANDSCAPE



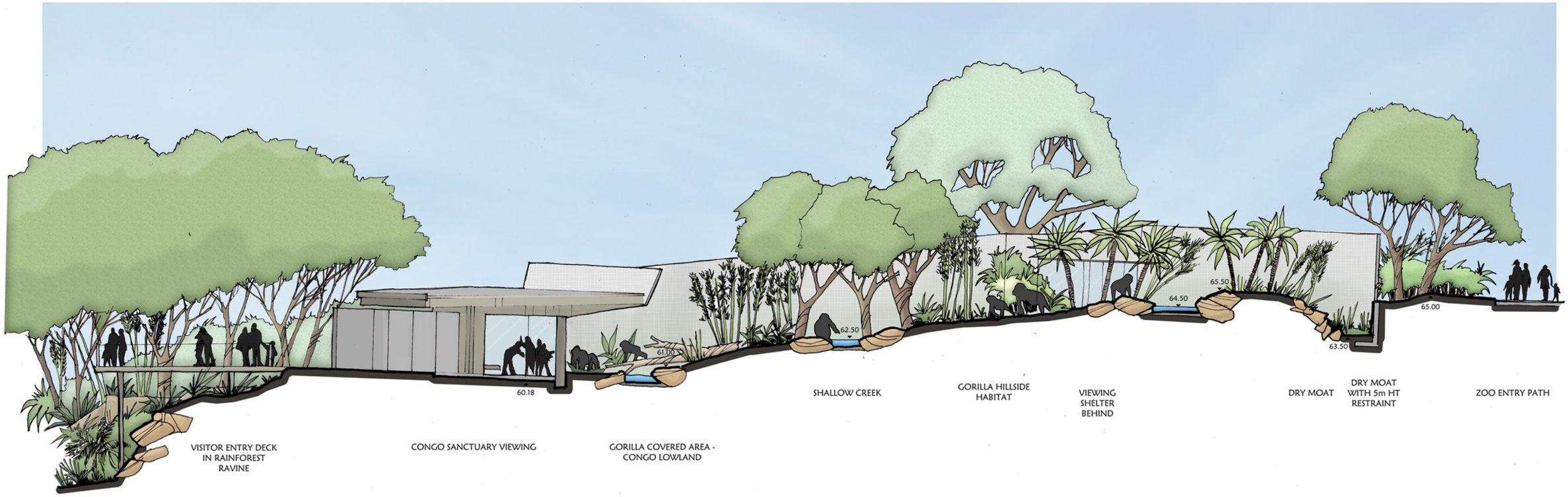
Plan Indicating Section Locations



SECTION BB CLIFF TOP VILLAGE AND ZEBRA PLAIN



SECTION CC THE WATERHOLE AND GIRAFFE GRASSLANDS



SECTION DD EASTERN LOWLAND GORILLA FAMILY ENCLOSURE

RETAINED HERITAGE TREE SCHEDULE				
TREE NO.	**BOTANICAL NAME**	**COMMON NAME**	**HERITAGE**	**PROTECT**
53L	*Arucaria cunninghamiana*	Hoop Pine	Exceptional	P
71L	*Melaleuca quinquenervia*	Broad Leafed Paperbark	Exceptional	P
91L	2x *Kigelia pinnata*	Sausage Tree	TBC	P
160L	*Ficus macrophylla*	Moretone Bay Fig	Exceptional	P
161L	2x *Magnolia grandiflora*	Bull Bay	Exceptional	1 protected; 1 removed
168L	*Podocarpus elatus*	Brown Pine	Exceptional	P
175L	*Stenocarpus sinuatus*	Firewheel Tree	High	P
182L	*Ficus macrocarpa var Hillii*	Hill's Fig	High	P
184L	*Phoenix sylvestris*	Canary Island date Palm	High	P
186L	*Lophostemon confertus*	Brush Box	High	P
187L	*Eucalyptus botryoides*	Bangalay	High	P
189L	*Indigenous Vegetation clump*	Local indigenous vegetation	High	P
242L	*Cupressus cashmeriana*	Bhutan cypress	High	P
244L	*Acer pentaohyllum*	Maple		P
250L	*Ceratopetalum gummifera*	Christmas Bush (local)	High	3 protected; 1 removed
254L	*Semiarundinarius fastuosa Variatus*	Bamboo (Sumatran BOH)	High	P
266L	*Eleagnus triflora*	Millaa Millaa Vine	High	P
272L	*Kigelia pinnata*	Sausage Tree	High	P
274L	*Ficus longifolia*	Narrow Leaf Fig	High	P
278L	*Phoenix robelenii*	Pygmy Date Palm	High	P
283L	*Malus halliana*	Hall's Crabapple	High	P
288L	*Kalanchoe*	Kalanchoe	TBC	P

The existing landscape character of the Savannah Precinct provides a mature foundation for the proposed design.

3.0 EXISTING VEGETATION

Refer plan A600 - Tree Removal and transplant plan - Green & Dale Associates - which outlines the existing vegetation that is marked for either retention, removal or transplantation.

The Arboricultural Assessment report, Prepared by Andrew Morton, of Earthscape Horticultural services, June 2017, has identified five hundred and fifty-five trees (555 trees) on the project site.

One hundred and ninety-six (196) trees have been nominated for removal due to the following:
- Being an unsuitable species for the intended planting theme.
- A majority of the trees are within the construction footprint or too close to construction to enable successful retention.
- Poor Health.

Three hundred and fifty-two (352) trees have been nominated for retention due to the following:
- They are suitable for the African theme, being tropical Australian or African species.
- These trees will be subject to tree protection measures to ensure they remain viable during construction and beyond.

Seven (7) trees have been nominated for relocation/ transplanting. In addition, one (1) shrub from the *Heritage and Conservation Register* will be transplanted (Reference 288L - Kalanchoe)
- 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 impacted by the proposed works. Details of the likely impacts and mitigation measures which may be appropriate are provided in the Arboricultural Assessment Report, prepared by Andrew Morton, Earthscape Horticultural services.

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

Western site area with Eucalypt woodland and sandstone outcrops to form part of the lion Kopje exhibit

Area of existing Bongo exhibit is in poor condition

Existing mature Ficus 182L heritage species to be retained and protected

Existing Ficus trees in lower Congo area to form a basis for the Congo forest

Existing Heritage staircase retained with existing vegetation

Former aviary area below the main entrance, overgrown but contains tree canopy for the proposed Gorilla Forest

TREE REMOVAL & TRANSPLANT SCHEDULE					
TREE NO.	**BOTANICAL NAME**	**COMMON NAME**	**HERITAGE**	**REMOVE / TRANSPLANT**	**Notes**
T1	*Callistemon salignus*	Willow Bottlebrush		R	Service access to Gorilla exhibit
T2	*Buckinghamia celsissima*	Ivory Curl Flower		R	Gorilla fence alignment
T3	*Casuarina glauca*	Swamp Oak		R	Gorilla fence alignment
T11	*Ficus macrophylla*	Moreton Bay Fig		R	Gorilla viewing shelter location
T12	*Ficus macrophylla*	Moreton Bay Fig		R	Gorilla exhibit regrading / wall removal
T13	*Ficus macrophylla*	Moreton Bay Fig		R	Gorilla exhibit regrading / wall removal
T14	*Harpulia pendula*	Tulipwood		R	Gorilla containment fence alignment
T40	*Waterhousea floribunda*	Weeping Lilly Pilly		R	Gorilla containment fence alignment
T41	*Waterhousea floribunda*	Weeping Lilly Pilly		R	Gorilla viewing shelter location
T42	*Castanospermum australe*	Blackbean		R	Pathway alignment
T43	*Alphitonia sp.*	Red Ash		R	Pathway alignment
T51	*Aleurites moluccana*	Candlenut		R	Gorilla viewing shelter location
T51a	*Flindersia sp.*	Cudgeriea		R	Gorilla viewing shelter location
T52	*Ficus microcarpa var. hillii*	Hill's Weeping Fig		R	Gorilla viewing shelter location
T53	*Aleurites moluccana*	Candlenut		R	Gorilla viewing shelter location
T93	*Phoenix sylvestris*	Silver Date Palm	Y (184L)	T	Roadway alignment
T97	*Eucalyptus punctata*	Grey Gum		R	The Waterhole' pathway alignment
T98	*Archontophoenix cunninghamii*	Bangalow Palm		R	'The Waterhole' building footprint
T99	*Magnolia grandiflora*	Bullbay Magnolia	Y (161L)	R	'The Waterhole' building footprint
T100	*Murraya paniculata*	Murraya		R	Road & Creek alignment
T101	*Phoenix sylvestris*	Silver Date Palm	Y (183L)	R	Creek alignment
T102	*Ficus rubiginosa f. glabrescens*	Port Jackson Fig		R	Pathway alignment
T102a	*Archontophoenix cunninghamii*	Bangalow Palm		R	Pathway alignment
T103	*Livistona chinensis*	Chinese Fan Palm		R	'The Waterhole' building footprint
T104	*Livistona australis*	Cabbage Tree Palm		R	'The Waterhole' building footprint
T110	*Archontophoenix cunninghamii*	Bangalow Palm		R	Road alignment
T117	*Archontophoenix cunninghamii*	Bangalow Palm		R	WC Footprint
T120	*Flindersia australis*	Crows Foot Ash		R	Okapi exhibit fence alignment
T121	*Flindersia schottiana*	Cudgerie		R	Pathway alignment
T124	*Flindersia schottiana*	Cudgerie		R	Okapi fenceline alignment
T126	*Flindersia australis*	Crows Foot Ash		R	Congo entryway footprint
T127	*Ficus benjamina*	Weeping Fig		R	Congo entryway footprint
T128	*Aleurites moluccana*	Candlenut		R	Congo entryway footprint
T132	*Livistona australis*	Cabbage Tree Palm		R	Pathway alignment
T132a	*Flindersia australis*	Crows Foot Ash		R	Pathway alignment
T132b	*Flindersia australis*	Crows Foot Ash		R	Pathway alignment
T133	*Lophostemon confertus*	Brushbox		R	Pathway alignment
T134	*Livistona australis*	Cabbage Tree Palm		R	Pathway alignment
T134a	*Flindersia australis*	Crows Foot Ash		R	Pathway alignment
T141	*Flindersia australis*	Crows Foot Ash		R	Deck alignment
T141a	*Flindersia australis*	Crows Foot Ash		R	Deck alignment
T142	*Sapium sebiferum*	Chinese Tallow Tree		R	Deck alignment to Gorilla viewing
T143	*Flindersia australis*	Crows Foot Ash		R	Deck alignment
T146	*Ficus rubiginosa*	Port Jackson Fig		R	Gorilla viewing shelter location
T146a	*Schefflera sp.*	Umbrella Tree		R	Gorilla viewing shelter location
T147	*Aleurites moluccana*	Candlenut		R	Viewing shelter footprint
T148	*Flindersia schottiana*	Cudgerie		R	Gorilla viewing shelter location
T148a	*Aleurites moluccana*	Candlenut		R	Viewing shelter footprint
T149	*Flindersia australis*	Crows Foot Ash		R	Gorilla viewing shelter location
T156b	*Flindersia schottiana*	Cudgerie		R	Path & Gorilla enclosure wall
T173	*Ficus rubiginosa*	Port Jackson Fig		R	Gorilla 'Rainforest Room' viewing shelter
T174	*Olea europaea subsp. Africana*	African Olive		R	Gorilla 'Rainforest Room' viewing shelter
T175	*Harpulia pendula*	Tulipwood		R	Gorilla 'Rainforest Room' viewing shelter
T175a	*Harpulia pendula*	Tulipwood		R	Gorilla 'Rainforest Room' viewing shelter
T175b	*Olea europaea subsp. africana*	African Olive		R	Gorilla 'Rainforest Room' viewing shelter
T176	*Ficus benjamina*	Weeping Fig		R	Levels changed for pedestrian underpass
T177	*Flindersia australis*	Crows Foot Ash		R	Levels changed for pedestrian underpass
T177a	*Flindersia australis*	Crows Foot Ash		R	Levels changed for pedestrian underpass
T178	*Melaleuca quinquenervia*	Broad-leaved Paperbark		R	Gorilla containment risk
T178a	*Flindersia australis*	Crows Foot Ash		R	Levels changed for pedestrian underpass
T189	*Melaleuca quinquenervia*	Broad-leaved Paperbark		R	Gorilla containment risk
T190	*Melaleuca quinquenervia*	Broad-leaved Paperbark		R	Gorilla containment risk
T197	*Agonis flexuosa*	Willow Myrtle		R	Access location to Gorilla BOH
T198	*Casuarina glauca*	Swamp Oak		R	Gorilla BOH footprint
T199	*Melaleuca quinquenervia*	Broad-leaved Paperbark		R	Gorilla BOH footprint
T200	*Callistemon salignus*	Willow Bottlebrush		R	Service access to Gorilla exhibit
T201	*Callistemon salignus*	Willow Bottlebrush		R	Service access to Gorilla exhibit
T228	*Aleurites moluccana*	Candlenut		R	Proposed amenities building footprint
T232	*Aleurites moluccana*	Candlenut		R	Deck alignment
T300b	*Pittosporum undulatum*	Native Daphne		R	Service access to Lions 01 exhibit
T301	*Pittosporum undulatum*	Native Daphne		R	Service access to Lions 01 exhibit
T302	*Pittosporum undulatum*	Native Daphne		R	Service access to Lions 01 exhibit
T336c	*Pittosporum undulatum*	Native Daphne		R	Lions Viewing structure footprint
T337	*Pittosporum undulatum*	Native Daphne		R	Lions Viewing structure footprint

4.0 EXISTING VEGETATION RETAINED/REMOVAL

This adjacent table indicates the existing vegetation that is marked for removal or transplantation. Note that 'Tree No' refers to the reference number indicated in the Arboricultural Report, and these trees are listed as such on the 'Tree Removal and Transplant Plan' (A600).

The total quantity of existing trees has been counted as 555. The percentage breakdown for removal, transplantation and retention of these existing trees is as follows:

* 7 No. marked for Transplantation (1.3%)
* 196 No. marked for Removal (35.3%)
* 352 No. marked for Retention (63.4%)

There are a number of existing trees listed as historically significant as per the original Tree Survey. These are shown on page 4.

T342	*Eucalyptus sp.*	Eucalyptus		R	Dead Tree
T354	*Glochidion ferdinandi*	Cheese Tree		R	Lions containment fence alignment
T359	*Pittosporum undulatum*	Native Daphne		R	Lions Viewing structure footprint
T361	*Banksia integrifolia*	Coast Banksia		R	Lions Viewing structure footprint
T362	*Banksia integrifolia*	Coast Banksia		R	Lions Viewing structure footprint
T369	*Pittosporum undulatum*	Native Daphne		R	Lions containment fence alignment
T371	*Pittosporum undulatum*	Native Daphne		R	Fence Alignment
T374	*Acacia sp.*	Wattle		R	Lions Enclosure Fence alignment
T377	*Eucalyptus sp.*	Eucalyptus		R	Dead Tree
T383a	*Glochidion ferdinandi*	Cheese Tree		R	Lion containment fence alignment
T385	*Glochidion ferdinandi*	Cheese Tree		R	Deck alignment
T390	*Eucalyptus punctata*	Grey Gum		R	Dead Tree
T392	*Eucalyptus punctata*	Grey Gum		R	Dead Tree
T393	*Pittosporum undulatum*	Native Daphne		R	Deck alignment
T395	*Pittosporum undulatum*	Native Daphne		R	Deck alignment
T396	*Ceratopetalum gummiferum*	NSW Christmas Bush	Y (250L)	R	Viewing platform footprint
T397	*Glochidion ferdinandi*	Cheese Tree		R	Deck alignment
T401	*Unidentified sp.* (Oak Leaf sp.)	Unknown - Oak leafed sp.		R	Deck alignment
T402	*Howea forsteriana*	Kentia Palm		R	Deck alignment
T406	*Archontophoenix cunninghamii*	Bangalow Palm		R	Deck alignment
T409	*Casuarina cunninghamiana*	River Oak		R	Lions Yard containment alignment
T415	*Casuarina glauca*	Swamp Oak		R	Lions BOH footprint
T416	*Casuarina glauca*	Swamp Oak		R	Lions BOH footprint
T417	*Casuarina glauca*	Swamp Oak		R	Lions BOH footprint
T418	*Casuarina glauca*	Swamp Oak		R	Lions BOH footprint
T419	*Pittosporum rhombifolium*	Queensland Pittosporum		R	Lions BOH footprint
T422	*Eucalyptus punctata*	Grey Gum		R	Lions Viewing structure footprint
T424	*Unknown sp.*			R	Lions BOH footprint
T425	*Unknown sp.*			R	Lions BOH footprint
T426	*Pittosporum undulatum*	Native Daphne		R	Lions yard containment risk
T429	*Ligustrum lucidum*	Broad Leaf Privet		R	Lions 02 vehicle access point / Noxious Weed
T429b	*Ficus rubiginosa f. glabrescens*	Port Jackson Fig		R	Deck alignment
T430	*Hakea salicifolia*	Willow-leaf Hakea		R	Deck alignment
T431	*Hakea salicifolia*	Willow-leaf Hakea		R	Pathway alignment
T431a	*Hake salicifolia*	Willow-leaf Hakea		R	Pathway alignment
T432	*Acacia sp.*	Sweet Acacia		R	Levels raised for Ostrich / Zebra yard
T433	*Acacia sp.*	Sweet Acacia		R	Levels lowered for pathway accessibility
T434	*Libidibia ferrea*	Leopard Tree		R	Levels raised for Ostrich / Zebra yard
T435	*Glochidion ferdinandi*	Cheese Tree		R	Zebra BOH footprint
T436	*Washintonia filifera*	Cotton Palm		R	Zebra BOH footprint
T436a	*Olea europaea subsp. Africana*	African Olive		R	Road widened for truck access
T437	*Jacaranda mimosifolia*	Jacaranda		R	Road widened for truck access
T437a	*Ficus macrophylla*	Moreton Bay Fig		R	Road widened for truck access
T437b	*Ficus rubiginosa*	Port Jackson Fig		R	Retaining wall alignment
T438	*Olea europaea subsp. Africana*	African Olive		R	Pathway alignment
T439	*Olea europaea subsp. Africana*	African Olive		R	Zebra BOH footprint
T440	*Glochidion ferdinandi*	Cheese Tree		R	Zebra BOH footprint
T440a	*Olea europaea subsp. africana*	African Olive		R	Zebra BOH footprint
T440b	*Olea europaea subsp. Africana*	African Olive		R	Zebra BOH footprint
T441	*Ficus obliqua*	Small-leaf Fig		R	Giraffe BOH footpring
T442	*Olea europaea subsp. africana*	African Olive		R	Giraffe BOH footpring
T443	*Olea europaea subsp. africana*	African Olive		R	Giraffe BOH footpring
T444	*Row of Acacia sp.*	Sweet Acacia	Y (273L)	R	Levels raised for zebra / giraffe exhibit
T445	*Aloe ferox*	Cape Aloe	Y (247L)	T	Pathway alignment - to be transplanted.
T446	*Aloe ferox*	Cape Aloe	Y (248L)	T	Pathway alignment - to be transplanted.
T447	*Acacia sp.*	Sweet Acacia		R	Regraded area for giraffe / zebra exhibit
T448	*Fraxinus americana*	American Ash		R	Regraded area for giraffe / zebra exhibit
T449	*Acacia sp.*	Sweet Acacia		R	Regraded area for giraffe / zebra exhibit
T450	*Acacia sp.*	Sweet Acacia		R	Regraded area for giraffe / zebra exhibit
T451	*Olea europaea subsp. africana*	African Olive		R	Removed to allow giraffe access to BOH
T452	*Olea europaea subsp. africana*	African Olive		R	Proposed giraffe ramp footprint
T453b	*Row of Acacia sp.*	Prickly Acacia		R	Levels lowered for giraffe exhibit
T454	*Phoenix roebelenii*	Dwarf Date Palm	Y (277L)	R	Levels raised for zebra / giraffe exhibit
T455	*Podocarpus elatus*	Brown Pine		R	Levels lowered for Meerkat exhibit
T456	*Podocarpus elatus*	Brown Pine		R	Levels lowered for Meerkat exhibit
T457	*Acacia floribunda*	Sally Wattle		R	Levels lowered for Meerkat exhibit
T458	*Phoenix reclinata*	Senegal Date Palm	Y (255L)	R	Pathway / Access to Meerkat BOH
T458a	*Spathodea campanulata*	African campanulata	Y (251L)	R	Pathway alignment
T458b	*Strelitzia nicolai*	Giant White Bird of Paradise		R	Pathway alignment
T458c	*Spathodea campanulata*	African campanulata	Y (251L)	R	Pathway alignment
T459	*Podocarpus elatus*	Brown Pine		R	Levels lowered for Meerkat exhibit
T460	*Acacia floribunda*	Sally Wattle		R	Levels lowered for Meerkat exhibit
T461	*Phoenix roebelenii*	Dwarf Date Palm	Y (256L)	R	Waterbody location
T461a	*Podocarpus elatus*	Brown Pine		R	Waterbody location
T462	*Podocarpus elatus*	Brown Pine		R	Waterbody location
T462a	*Podocarpus elatus*	Brown Pine		R	Pathway alignment
T463	*Gleditsia triacanthus*	Honey Locust		R	Waterbody location
T464	*Eucalyptus robusta*	Swamp Mahogany		R	Meerkats viewing shelter footprint
T464a	*Gleditsia triacanthus*	Honey Locust		R	Pathway alignment
T465	*Eucalyptus robusta*	Swamp Mahogany		R	Pathway alignment
T466	*Eucalyptus robusta*	Swamp Mahogany		R	Proposed Fennec Fox exhibit wall and pathway
T466a	*Aloe ferox*	Cape Aloe	Y (287L)	T	Levels raised for Fennec Fox exhibit
T467	*Aloe ferox*	Cape Aloe	Y (287L)	T	Levels raised for Fennec Fox exhibit
T468	*Aloe ferox*	Cape Aloe	Y (289L)	T	Levels raised for Fennec Fox exhibit
T469	*Cordyline australis*	Cordyline		R	Meerkat BOH footprint
T470	*Aloe ferox*	Cape Aloe	Y (289L)	T	Fennec Fox BOH footprint
T473	*Ceiba speciosa*	Silk Floss Tree	Y (271L)	R	The Waterhole' building footprint
T474	*Unidentified sp.*	Chestnut		R	The Waterhole' building footprint
T475	*Unidentified sp.*	Chestnut		R	Waterbody location
T476	*Unidentified sp.*	Chestnut		R	Waterbody location
T476a	*Unidentified sp.*	Chestnut		R	Waterbody location
T477	*Strelitzia nicolai*	Giant White Bird of Paradise		R	Levels changed for waterbody access
T478	*Glochidion ferdinandi*	Cheese Tree		R	Viewing Deck footprint
T478a	*Plumeria acutifolia*	Frangipani		R	Viewing Deck footprint
T479	*Glochidion ferdinandi*	Cheese Tree		R	Giraffe BOH footprint
T479a	*Melaleuca armillaris*	Bracelet Honey Myrtle		R	Giraffe BOH footprint
T555	*Ficus obliqua*	Small-leaf Fig		R	Okapi BOH footprint
T556	*Ficus obliqua*	Small-leaf Fig		R	Okapi BOH footprint
T568	*Unidentified*	Unidenfified		R	Ramp alignment
T569	*Unidentified*	Unidenfified		R	Ramp alignment
T570	*Callitris rhomboidea*	Cypress Pine	Y (170L)	R	Ramp alignment
T573	*Unidentified*	Unidenfified		R	Ramp alignment
T574	*Unidentified*	Unidenfified		R	Ramp alignment
T578	*Unidentified*	Unidenfified		R	Ramp alignment
T579	*Unidentified*	Unidenfified		R	Ramp alignment
T580	*Unidentified*	Unidenfified		R	Pathway alignment
T581	*Unidentified*	Unidenfified		R	Pathway alignment
T583	*Unidentified*	Unidenfified		R	Deck alignment
Not Listed	*Kalanchoe sp.*	Widow's-thrill	Y (288L)	T	Fennec Fox BOH footprint

NOTES:
TREE NO.' from Arboricultural impact assessment report prepared by Earthscale Horticultural Services for Taronga Zoo June 2017

5.0 PLANT ZONES

This plan indicates the proposed planting zones for the African Savannah & Congo enclosures.

The main planting zones are as follows:

Zone 1	Giraffe / Zebra Savannah Grasslands
Zone 2	African Waterhole
Zone 3	Cliff Edge Village
Zone 4	Rocky Hillside Viewing Tower
Zone 5	Lion Kopje Country
Zone 6	Lion Kopje & Woodland Edge
Zone 7	Edge of the Forest
Zone 8	Central Visitor Path
Zone 9	Congo Forest
Zone 10	Gorilla Forest
Zone 11	Congo Forest Edge

LEGEND

- ZONE 1 - GIRAFFE / ZEBRA SAVANNA GRASSLANDS
- ZONE 2 - AFRICAN WATERHOLE
- ZONE 3 - CLIFF EDGE VILLAGE
- ZONE 4 - ROCKY HILLSIDE
- ZONE 5 - LION KOPJE COUNTRY
- ZONE 6 - LION KOPJE & WOODLAND EDGE
- ZONE 7 - EDGE OF THE FOREST
- ZONE 8 - CENTRAL VISITOR PATH
- ZONE 9 - CONGO FOREST
- ZONE 10 - GORILLA FOREST

6.0 PLANT ZONE DESCRIPTIONS

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

Savannah grassland & Acacia trees

ZONE ONE
THE GIRAFFE / ZEBRA SAVANNAH

Grasses represent the majority of plant cover beneath and between the trees. In some types of savannah, the grass can be more than 1.8 metres high. Although much debated, two factors seem to perpetuate the dominance of grasses: seasonal moisture with long intervening dry spells and periodic fires.

The waterhole provides a major visitor experience of the savannah

ZONE TWO
THE AFRICAN WATERHOLE

On the savannahs of Africa, it is to the waterhole that the birds and wildlife flock. The waterhole is their oasis, breaking up the day's journey. During the rainy season, animals find water sources more easily, as rivulets, streams and lush plant life spread across their prideland. But during the dry season, after the rains have passed, the call of the waterhole continues to provide life

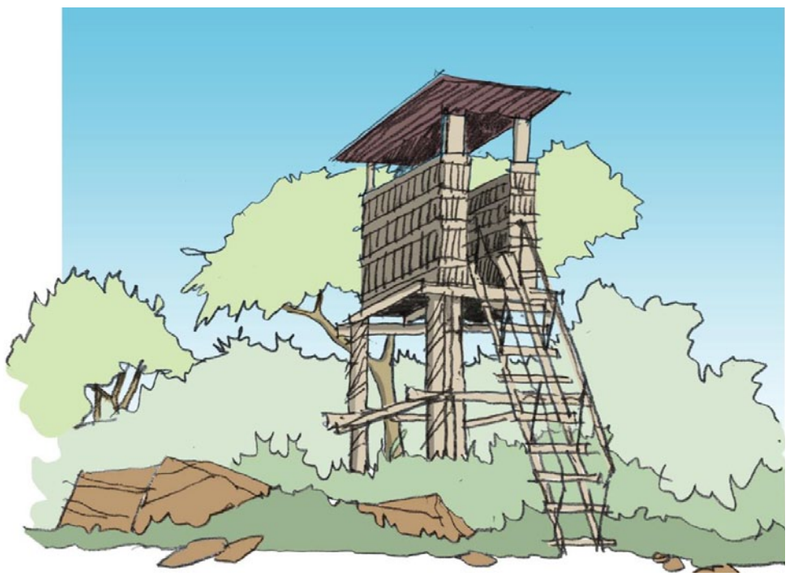
6.0 PLANT ZONE DESCRIPTIONS

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

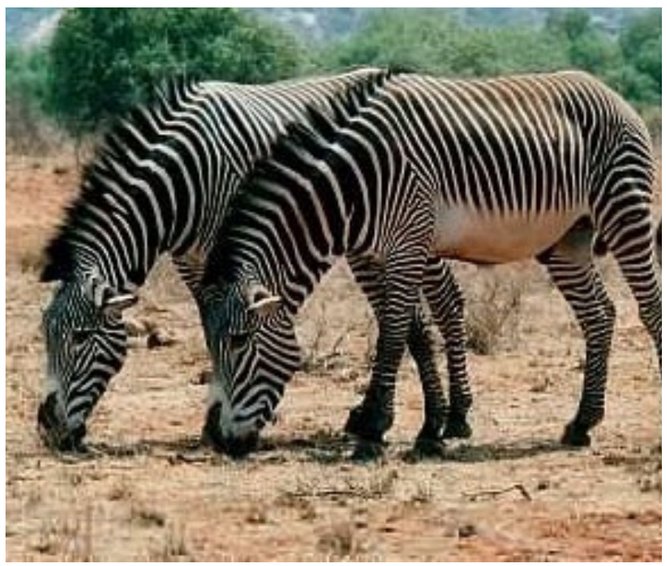
Cliff Village entrance along a boardwalk bridge, heavy vegetation screening to the cliff edge

ZONE THREE
CLIFF EDGE VILLAGE

A traditional African village of the savannah where man and animal coexist, alongside a cliff edge, sheltered from the extreme conditions. A unique vegetation is found with low shrubs and succulents.



A hidden viewing tower for children amongst acacia trees provides views of zebras



ZONE FOUR
ROCKY HILLSIDE TO THE CLIFF EDGE VILLAGE

A secluded zebra viewing tower used by the cliff edge villagers is located amongst the hilly edge and dense shrubbery. This is intended for children to climb up approximately. 1.5m ht and experience views eastward along the savannah plain. Vegetation consists of a dense shrubland vegetation and succulents.

6.0 PLANT ZONE DESCRIPTIONS

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

Lion kopje habitat, viewing through shelter glass window. Existing site woodland retained as a backdrop.

ZONE FIVE
LION KOPJE COUNTRY

The lion country is located on the western edge of the Savannah where a rocky Kopje landscape is found. The landscape transitions gently into a new geographical zone.

- A natural scarpland of existing sandstone provides an interesting contrast to the flat Savannah to the east.
- Kopjes are very different from the surrounding grassland or woodland in the savannah. Kopjes provide, among other things, protection from grass-fires, more water in the ground around them, holes, cracks, and caves for animals, and a vantage point for hunters of all kinds. Hundreds of species of plants grow on kopjes, but not in the surrounding grasslands places.

ZONE SIX
LION KOPJE & WOODLAND EDGE

The kopje country is surrounded by an existing open eucalypt woodland edge to the west and southern edges. This vegetation will be retained and enhances as part of the lion exhibit

6.0 PLANT ZONE DESCRIPTIONS

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

Woodland edge to the savannah, with the Chimpanzee exhibit.

A spectacular display of flowering shrubs/succulents from the two habitat areas

ZONE SEVEN
THE EDGE OF THE FOREST

The edge of the forest to the Savannah grasslands. This area provides the main visitor flow from the Giraffe House to the existing chimpanzee exhibit. This can function as an active boundary, unique habitats and a dynamic transition zone for the chimpanzee of the dense tropical rainforests as well as secondary-growth forests, woodlands.

ZONE EIGHT
CENTRAL VISITOR PATH

The Central Visitor Path provides an important transition point between the Savannah and the Congo forest. This zone will accommodate some of the spectacular and unique plants of the two African habitats.

6.0 PLANT ZONE STRATEGY

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

The lush vegetation of the Congo Forest, using existing Ficus species, groundcovers and climbers

The Gorilla Forest viewed from the Sanctuary, with forest clearings, dense vegetation and palms covering the hilltop

ZONE NINE
THE CONGO FOREST

Beneath the dense forest canopy, made up of existing ficus species and other evergreen species, a layer of smaller trees live beneath the main canopy. A few smaller shrubs and herbs grow near the ground level, but the majority of the herbs and other perennials are epiphytes, that is, plants that grow on other plants. On almost every available space on the trunks and branches of the canopy trees there are epiphytes that support an entire, unique community.

ZONE TEN
GORILLA FOREST

The gorilla forest is developed to simulate the eastern lowland gorillas' naturalistic habitat, with a hilly topography with open areas of grassland and low shrubland, with sandstone rock outcrops and a central stream that tumbles down the hillside and into the Congo Forest.

The soil structure of the area would be made of well drained fertile soils to encourage rapid growth, with rough turf and herbaceous plants and wetland vegetation planted alongside the stream. A mature palm grove would dominate the hilltop, providing shade and that can provide some resistance to the gorilla's sometimes destructive behaviour.

ZONE ELEVEN
CONGO FOREST EDGE

This south facing forest edge, which is adjacent to the Lemur exhibit, below the wall, will largely consist of screening plants which will block out visibility to the lemur exhibit area and playground. The visitor would be totally immersed in a forest canopy provided by Ficus and Bamboo.

6.1 PLANT SCHEDULE

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

African Savanna/Congo Planting													
Exhibit Zones		**1 Savanna**	**2 Waterhole**	**3 Cliff Village**	**4 Rocky Hillside**	**5 Lions Kopje**	**6 Lions Wood**	**7 Edge of Forest**	**8 Cntre Visitor Path**	**9 Congo Forest**	**10 Gorilla Forest**	**11 Forest Edge**	
TREES													
Adansonia digitata	Baobob	■	■						■				
Acacia mearnsii	Black wattle	■	■	■									
Acacia Senegal	Gum arabic	■	■	■									
Acacia farnesiana	Mimosa bush	■	■	■									
Albizia julibrissi	Persian silk tree								■				
Aloe	Cape aloe			■	■				■				
Aleurites moluccana	Candlenut									■			
Bauhinia punctata	African plume								■	■	■	■	
Brachychiton rupestris	Queensland bottle tree	■	■						■				
Buckinghamia celsissima	Ivory Curl tree									■			
Castanea sativa	Chestnut tree	■	■					■					
Celtis australis	Nettle Tree	■		■		■		■					
Ceratopetalum gummifera	Christmas bush (local)									■			
Combretum erythrophyllum	River Bushwillow		■										
Cunonia capensis	Red Alder		■										
Erythrina tomentosa	Flame tree		■						■				
Eugenia jambos	Rose apple									■	■	■	
Euphorbia ingens	Candelabra Tree	■	■	■	■								
Eucalyptus spp	Gum						■		■				
Ficus obliqua	Small leaf fig					■	■						
Ficus microcarpa var hilli	Hills Weeping fig									■	■	■	
Ficus lyrata	Fiddle Leaf Fig				■	■	■						
Ficus rubiginosa	Port Jackson Fig									■	■	■	
Gleditsia triacanthos	Honey locust	■	■		■	■	■	■					
Glochidion ferdinandi	Cheese Tree	■	■	■									
Diospyros mespiliformis	Jackalberry Tree	■	■	■	■	■	■	■					
Harpephyllum caffrum	Kaffir Plum tree	■	■	■	■	■	■	■	■				
Hymenosporum flavum	Native Fragapani									■	■	■	
Khaya senegalensis	African Mahoany	■	■						■				
Kigelia africana	Sausage Tree								■				
Olea europaea 'Swan Hill'	African Olive			■	■	■							
Pachira glabra	Malabar Chestnut			■	■	■							
Pandanus kirkii	Screw pine		■										
Pandanus utilis	Stilt Palm									■	■		
Phoenix reclinata	Senegal Date Palm								■	■	■		
Phoenix roebelini	Dwarf Date Palm									■	■		
Robinia pseudoacacia	False acacia	■	■	■									
Sparmania Africana	African tulip Tree								■	■	■		
Syzygium spp	Lilly Pilly									■	■	■	
Treculia africana	Breadfruit									■	■		

SHRUBS													
Abutilon theophrasti	Velvet Leaf												
Actinidia delicosa	Kiwi fruit												
Adenium obesum	Desert rose												
Aloe aculeata	Prickly Aloe												
Aloe africana	African Aloe												
Aloe bainesii Tree aloe	Giant Tree Aloe												
Aloe ferox e,	Candelabra aloe												
Aristea ecklonii	Blue stars												
Artocarpus altilis	Breadfruit												
Artemisia arborescens	Silver Wormwood												
Buddleja madagascariensi	Madagscar Budleja												
Clerodendrum splendens	Pagoda Flower												
Combretum krausii	Forest Bushwillow												
Costus lucanusianus 'Sweet African'	Ginger												
Cunonia capensis	Butterspoon tree												
Dombeya tiliacea	Forest wild pear												
Ensete ventricosum	Abyssinian Banana												
Erythrina abyssinica	Coral tree												
Euphorbia abyssinica	Desert Candle												
Euphorbia lactea	Candelabra Plant												
Hibiscus schizopetalus	Chinese Lantern												
Justicia adhatoda	Malabar Nut												
Kniphofia x praecox	Red Hot Pokers												
Leonotis leonurus	Lions ear												
Leucaena leucocephala	Leadtree												
Leucadendron laureolum													
Leucadendron salignum 'Safari Magic'													
Leucadendron 'Jubilee Crown'													
Leucospermum 'Goldie'	Golden pincushion												
Leucospermum praecox 'Patricia'	Large Tufted Pincushion												
Monstera deliciosa	Swiss Cheese Plant												
Nephrolepis cordifolia	Sword fern												
Nerine bowdenii	Spider Lily												
Notelaea longifolia	Mock olive												
Tecoma stans	Yellow Bells												
Thunbergia erecta	Kings Mantle												
Wacendorfia thyrsiflora	Read Root												
AQUATICS													
Aponogeton distacheus	African Water Hawthorn												
Nymphaea lotus	Lily												
Nymphaea 'Albert de la Stang'	Lily												
Nelumbo nucifera	Lotus lily												
Cyperus alternifolius	Alternate papyrus												
Cyperus papyrus	Papyrus												
Eichhornia crassipes	Water Hyacinth												
Ipomoea aquatica													
Hydrocotyle peduncularis	Marsh Pennywort												
Juncus australis	Austral rush												

GRASSES													
Arundo donax	Bamboo												
Bambusa multiplex	Bamboo												
Carex appressa	Tall sedge												
Carex pendula	Pendulous sedge												
Cynod spp	Bermuda Grass												
Danthonia linkii	Wallaby Grass												
Dietes bicolor	African Iris												
Dietes robinsoniana	Wedding Lily												
Dietes grandiflora	Giant iris												
Dietes vegeta	African Butterfly iris												
Doryanthes palmer	Gymea lily												
Liriope muscari	Lilyturf												
Ophiopogon japonicus	Mondo grass												
Pennisetum alopecuroides	Swamp fountain Grass												
Pennisetum purpureum	Elephant grass												
Pennisetum setaceum	African fountain Grass												
Phyllostachys aurea	Golden Bamboo												
Poa affinis	Tussock Grass												
Themeda triandra	Red Grass												
SUCCULENTS													
Aloe thraskii	Dune aloe												
Aloe barbarae.	Aloe												
Aloe ramosissima	Maidens Quiver Tree												
Agave attentuata	Foxtail agave												
Cotyyledon spp													
Encephalartos natalensis													
Encephalartos hildebrandtii	Mombasa Cycad												
Euphorbia trigona	African Milk tree												
Euphorbia tirucalli 'Firestic	Pencil Bush												
Encephalartos natalensis	Giant Tree Cycad												
Kalanchoe luciae	*Flapjacks*												
Senecio Mandraliscae	Blue Chalk Sticks												
EPIPHYTES													
Dendrobium canaliculatum													
Oncidium onustum													
Sophronitis brevipedunculata													
VINES													
Protasparagus africanus	African asparagus												
Podranea ricasoliana	Pink Trumpet Vine												
Tecoma capensis	Cape Honeysuckle												