



83 Registered Post



GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE CHANGE

Central Zoo Authority



F. No. 19-113/92-CZA(140)(Vol. I)(NS) / 7546

DATE: 06.08.2015

To

The Additional Principal Chief Conservator of Forests (D&P) &
Special Officer,
Thrissur Zoological Park,
Pathur (Kerala)

Sub:- Revised Master (layout) Plan of the Thrissur Zoological Park, Kerala and proposed designs for the construction at the Thrissur Zoological Park, Kerala-Reg.

Ref:- Your office letter no. WL3-7551/95, Dt.23.05.2015.

Sir,

This has with reference to the power point presentation delivered by Mr. John Coe, consultant architect on the Revised Master (layout) Plan of Thrissur Zoological Park, Kerala and designs for the proposed construction at the Thrissur Zoological Park, Kerala before the members of the Expert Group on Zoo Designing of the Central Zoo Authority in its 62nd meeting held on 13.07.2015. After detailed deliberation the following observations were made:-

A. Revised Master Layout Plan:

Members on scrutiny of revised layout plan of Thrissur Zoological Park-Wildlife Conservation & Research Centre, Puthur, Kerala, recommended the same for approval.

B. Designs of enclosures:

Members on scrutiny of designs on proposed construction of following enclosures at Thrissur Zoological Park-Wildlife Conservation & Research Centre, Puthur, Kerala, approved the designs given below subject to incorporation of following suggestions:

1. Design of proposed construction of Biodiversity Centre:

- Advised to explore providing more space.
- Suggested to create a tunnel for Porcupine.
- Term 'office' may be replaced with 'Research Centre'.

Contd..

B-1 Wing, 6th Floor, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003.

2. Design of proposed construction of enclosure for Mugger Crocodile and Gharial exhibit:

- a) Exhibit provided may be used to house not more than one male and two females.

3. Design of proposed construction of Great Aviary:

4. Design of proposed construction of enclosure for Nilgiri langur:

5. Design of proposed construction of enclosure for Lion tailed macaque:

6. Design of proposed construction of enclosure for Leopard:

- a) Care should be taken to avoid animal getting out of enclosure by care in joining moat and barrier.
b) Kraal corner should be rounded off.
c) Covered exercise yards may be provided elsewhere.
d) From feeding cells, access should be direct to paddock.
e) Suggested to provide one covered and one open kraal.

7. Design of proposed construction of enclosure for Tiger:

- a) Covered excessive yard may be removed.
b) Sharp edges to be removed.

8. Design of proposed construction of enclosure for Asiatic lion:

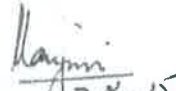
- a) Covered exercise yard may be removed.
b) Sharp edges to be removed.

9. Design of proposed construction of enclosure for Gaur:

(Revised Lay out plan)

The dully signed copies of Great Aviary, Nilgiri langur, Lion tailed macaque and others are enclosed with this letter with a request to submit the amended copies of Biodiversity Centre, enclosure for Mugger Crocodile , Gharial, Leopard, Tiger and Asiatic Lion for its final approval.

Yours faithfully


(Vinod Ranjan)
7.8.13
Member Secretary

Write
Encl: as above

Copy to The Chief Wildlife Warden, Govt. of Kerala for favour of information.

B-1 Wing, 6th Floor, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003.



THRISSUR ZOOLOGICAL PARK
Wildlife Conservation & Research Centre, Puthur

DPR - STAGE 3
EXHIBIT DESIGNS
DRAWINGS FOR STATUTORY APPROVAL
27th March, 2015

ASIATIC LION EXHIBIT



EXHIBIT 11_ ASIATIC LION (*Panthera leo persica*)

PROPOSED COLLECTION PLAN	MALE	FEMALE	TOTAL
	2	3	5
AREA STATEMENT			
EXHIBIT AREA STANDARDS (as per CZA rules)	1000 sqm PER PAIR	200 sqm PER ADDITIONAL ANIMAL	REQUIRED TOTAL 1600 sqm
PROPOSED AREAS			
EXHIBIT AREA	1609 sqm		
MOAT AREA	553 sqm		
OFF-EXHIBIT HOLDING AREA	446 sqm (Kraal building 165 sqm, Exercise yard 141 sqm, External Keeper Circulation areas 140 sqm)		
BARRIER DETAILS PROPOSED			
FRONT BARRIER	U SHAPED DRY MOAT OF WIDTH 8M AND DEPTH 5M	ALL BARRIERS PROPOSED ARE AS PER CZA STANDARDS	
REAR AND SIDE BARRIER	CHAINLINK FENCE 5M HEIGHT WITH ADDITIONAL 1.5M BARBED WIRE OVERHANG AT 60 DEG ANGLE.		
OTHER DETAILS	OVER HANG FENCE WITH HOT WIRE (for all barriers)		
ENRICHMENT DETAILS			
EXHIBIT AREA	DEAD WOOD LOGS, GROTTO, ARTIFICIAL ROCK WORK, TALL GRASSES etc		
KRAAL AREA	BRANCHES HUNG FROM ROOF FRAME, LEDGES AND SLEEPING PLATFORMS etc		

INTRODUCTION:

The Asiatic Lion exhibit is located on an East facing slope of the Zoo on an extremely steep terrain. The exhibit has an area of 1609 sqm. The Visitor path stretches all along the width of the exhibit with two pockets for animal viewing. There are two Viewing Shelters (each 55 sqm) with provision for closely viewing the animal through glass.

BARRIER DETAILS:

- **FRONT BARRIER:** The exhibit has a U shaped DRY MOAT along the front boundary aligned parallel to the Visitor path. The moat has an 8m horizontal width at the top and a depth of 5m with an overhang fence with HOT WIRE barrier.
- **REAR BARRIER:** The rear barrier is a Fence of height with an additional 1.5m overhang at 60 deg with barbed wire. The fence is hidden (from visitor viewing) with planting.
- The **STAND OFF BARRIER** of 110cm height along the edge of the Animal Viewing pockets controls public access to the moat. It continues between the Viewing areas as a hidden fence OF 100cm height in the vegetation.

- A minimum width 1.5m of hedge planting separates the moat from the Standoff barrier.
- At two points, closer animal viewing through glass is facilitated in the **VIEWING SHELTERS**. The exterior architectural concept of these shelters emulates a mass of a group of rocks and dead trees with shrubs and thickets that is common in the local hills.

ANIMAL EXHIBIT AREA:

- The Asiatic Lion exhibit area has an approximate width of 80 m and depth of 20m. The existing terrain is excavated and remodelled to form a series of flat areas and background artificial rock cliff which forms a continuous backdrop.
- The front portion has perching rocks and is slightly elevated from the level of the Visitor path. Further behind, there is a Grotto, a set of irregular steps connecting to the upper zones in the exhibit.
- The artificial rockwork shall resemble natural granite outcrops. An interesting series of stairs (through the artificial Cliff rockwork) that appears as a crack in the geology connects the uppermost level of the exhibit to the raceway from the kraal.
- A combination of rock work and planting screens the Kraal and the rear barrier fence from the Visitor view. Small reflecting pools in front of the Glass animal viewing area keeps the animal away from leaving pawmarks on the glass.

EXHIBIT ANIMAL HOLDING AREA:

- The Off exhibit Animal Holding area contains a Kraal building (165 sqm) and an Exercise Yard (141 sqm).
- The open to sky parts of the Exercise Yard has an Overhead Mesh. Cubicles are directly connected to the exhibit as well as the exercise yard. The Kraal has a Keeper Room and 8 cubicles on one side. The cubicles are directly connected to the exhibit area.
- The Kraal (Night Shelter) has 7 cubicles each of size 1.8m x 3m x 3m height where the animal is fed and spends the night as well. All cubicles have floor drains.
- A Keeper Room (18 sqm) and a Keeper Aisle of 3m width provides food and other services to the animals.

EXHIBIT ENRICHMENT ASPECTS:

- The exhibit has a series of rock perches, grottos and artificial rock work backdrop cliff to provide varying levels for the captive animal to exercise and move around. Also provided are artificial trees, dead logs, Sway Branches and platforms.
- Off exhibit holding areas are also enhanced with such elements.

SERVICE ASPECTS:

- Both the Exhibit area and the Off exhibit Animal Holding area are provided with adequate Service access from the Service road.
- The entry/ exit gates for animals to / from the exhibit have provision for Keeper control and operation from Service areas.
- The Kraal building is also provided with Services through the Porch.



THRISSUR ZOOLOGICAL PARK
Wildlife Conservation & Research Centre, Puthur

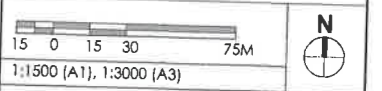
DPR - STAGE 3:
DRAWINGS FOR STATUTORY APPROVAL

EXHIBIT NAME:
ASIATIC LION

DRAWING TITLE:
LOCATION PLAN

DRAWING NO:	DATE:	REVISION:
DPR/S3/ALN/01	27.03.2015	

SCALE:
1:1500 (A1), 1:3000 (A3)



LEGEND:

- VISITOR PATH
- TRAM / SERVICE ROAD
- ORIENTATION CENTRE

EXHIBITS

1. BIODIVERSITY CENTRE
2. MUGGER CROCODILE AND GHARIAL
3. GREAT AVIARY
4. DEER 1
5. DEER 2
6. DEER 3
7. NILGIRI LANGUR
8. LION TAILED MACAQUE
9. LEOPARD
10. TIGER
11. ASIATIC LION
12. INDIAN GAUR

CONSULTANTS:

Jon Coe Design - Idea Design Consortium
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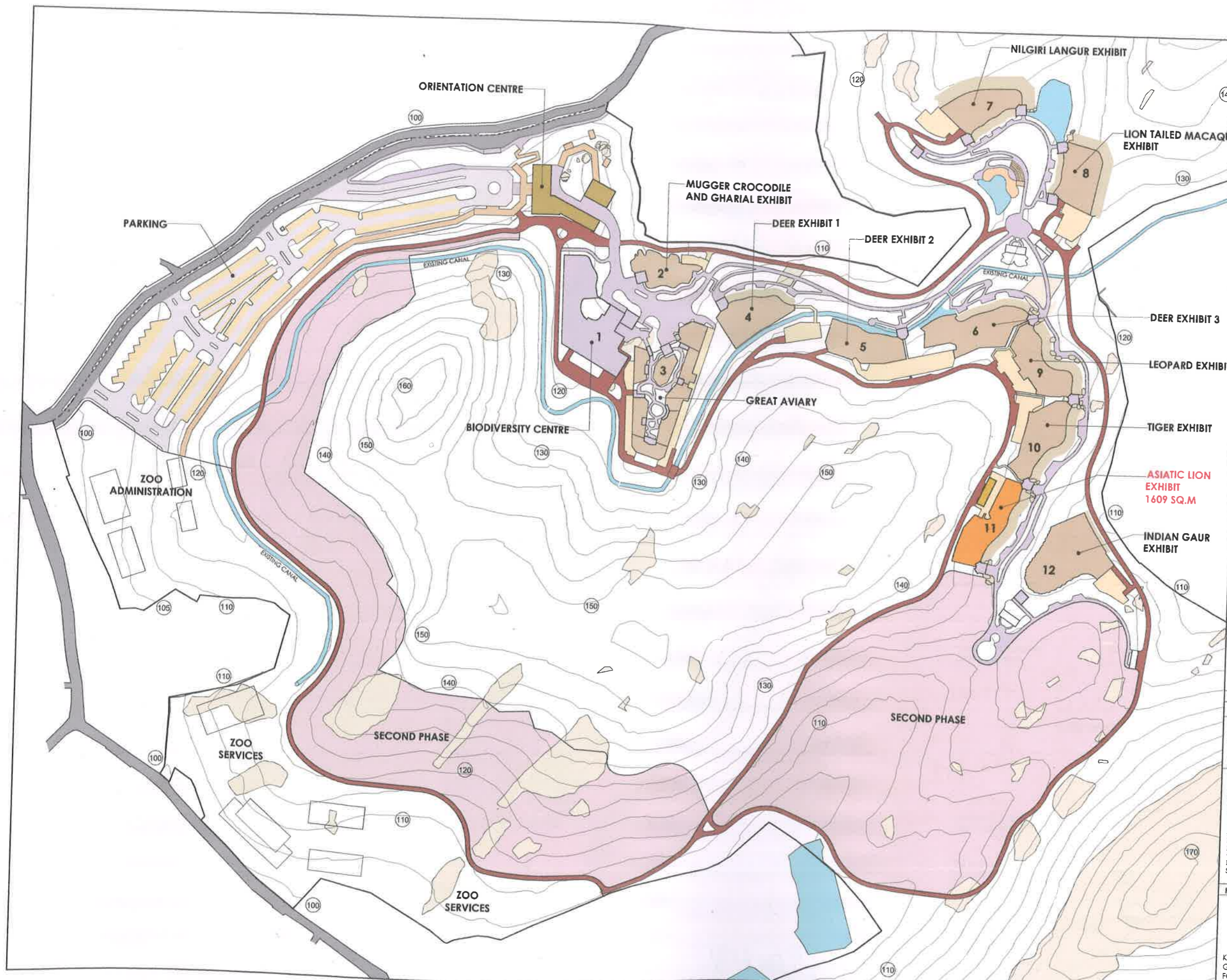
Chitra Biley, B Arch, MLA, AISOLA
Idea Design, Cochin.

Michael Little, MLA
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Felix Varkeykunju, M.Tech
Spoton Engineering Software Services, Emakulam

PROJECT BY:

KERALA FOREST DEPARTMENT
GOVERNMENT OF KERALA
FOREST HEADQUARTERS, VAZHUTHACAUD,
THIRUVANANTHAPURAM - 695014
KERALA, INDIA





THIRUVANANTHAPURAM ZOOLOGICAL PARK
Wildlife Conservation & Research Centre, Puthur

DPR - STAGE 3:

DRAWINGS FOR STATUTORY APPROVAL

EXHIBIT NAME:

ASIATIC LION

DRAWING TITLE:

EXHIBIT PLAN

DRAWING NO: DATE: REVISION:

DPR/S3/ALN/02 27.03.2015

SCALE:

2 0 2 4 10M

1:200 (A1), 1:400 (A3)



LEGEND:

- (130) EXISTING CONTOUR LEVEL
- +128 PROPOSED LEVEL
- EXISTING ROCK
- (A1) SECTION NAME
- PROPOSED LOW PLANTING
- PROPOSED PLANTING
- PROPOSED ROCK
- OVERHEAD MESH
- FENCE

COLLECTION PLAN:

MALE	FEMALE	TOTAL
2	3	5

AREA STATEMENT:

ASIATIC LION EXHIBIT	1609 Sq.m
KRAAL (OFF EXHIBIT HOLDING AREAS)	446 Sq.m

CONSULTANTS:

Jon Coe Design - Idea Design Consortium

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KERALA, INDIA

Magis
7.8.15

Member Secretary
Central Zoo Authority
(Ministry of Environment & Forests)
Govt. of India, New Delhi

*Mistans on painted
in can of tigers may
be rectified as suggested
in can of tigers.*

*By
C.S. Yalakkal
Asst. (DPR)
Puthur*

*Pct
12/7/15*





THRISSUR ZOOLOGICAL PARK
Wildlife Conservation & Research Centre, Puthur

DPR - STAGE 3:

DRAWINGS FOR STATUTORY APPROVAL

EXHIBIT NAME:

ASIATIC LION

DRAWING TITLE:

EXHIBIT SECTION

DRAWING NO: DATE: REVISION:

DPR/S3/ALN/04 27.03.2015

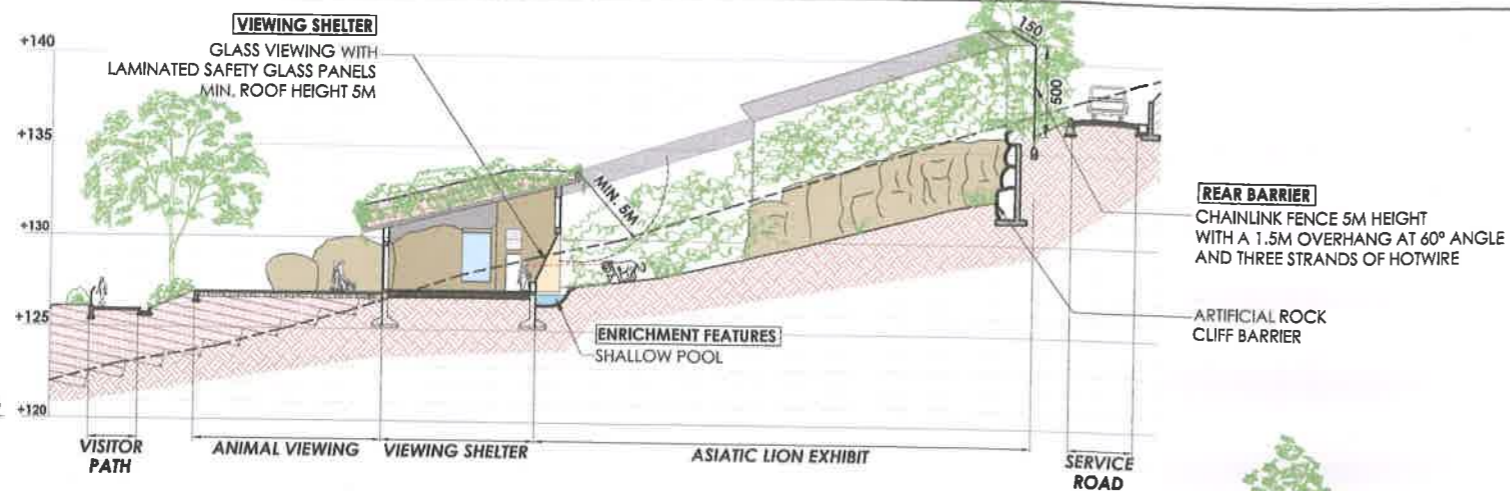
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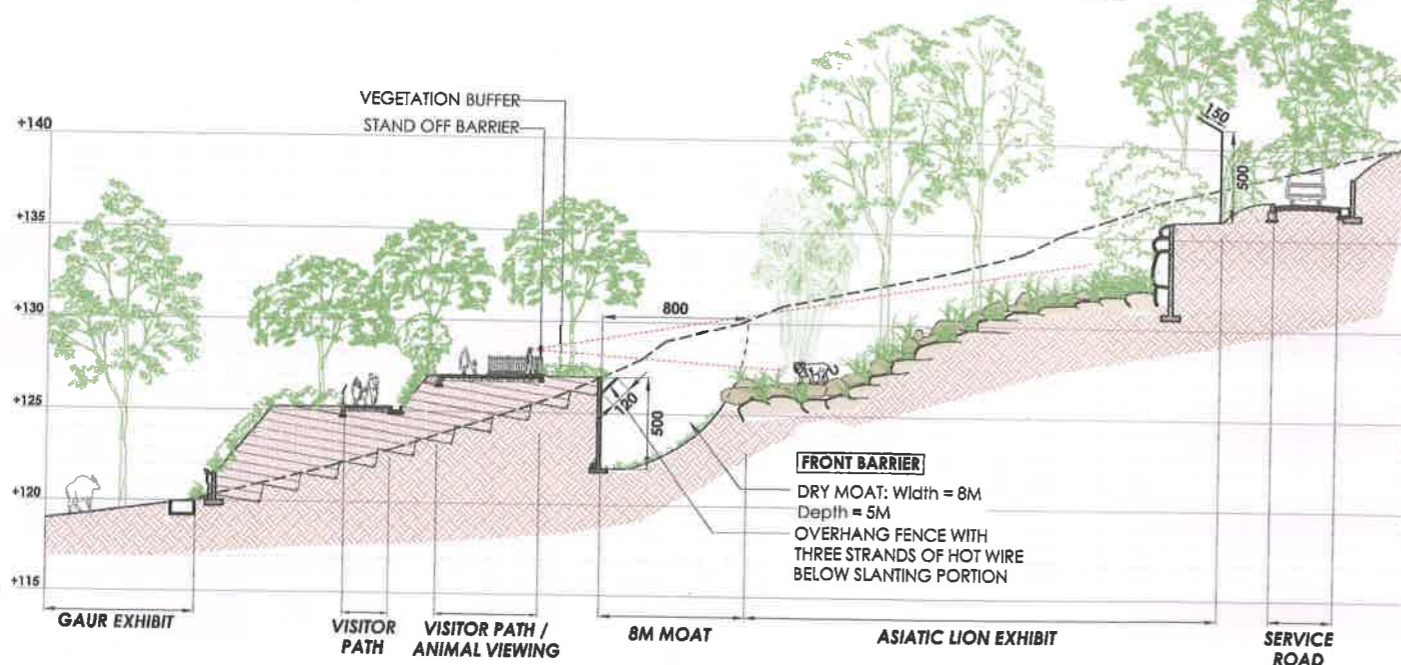
1:200 (A1), 1:400 (A3)



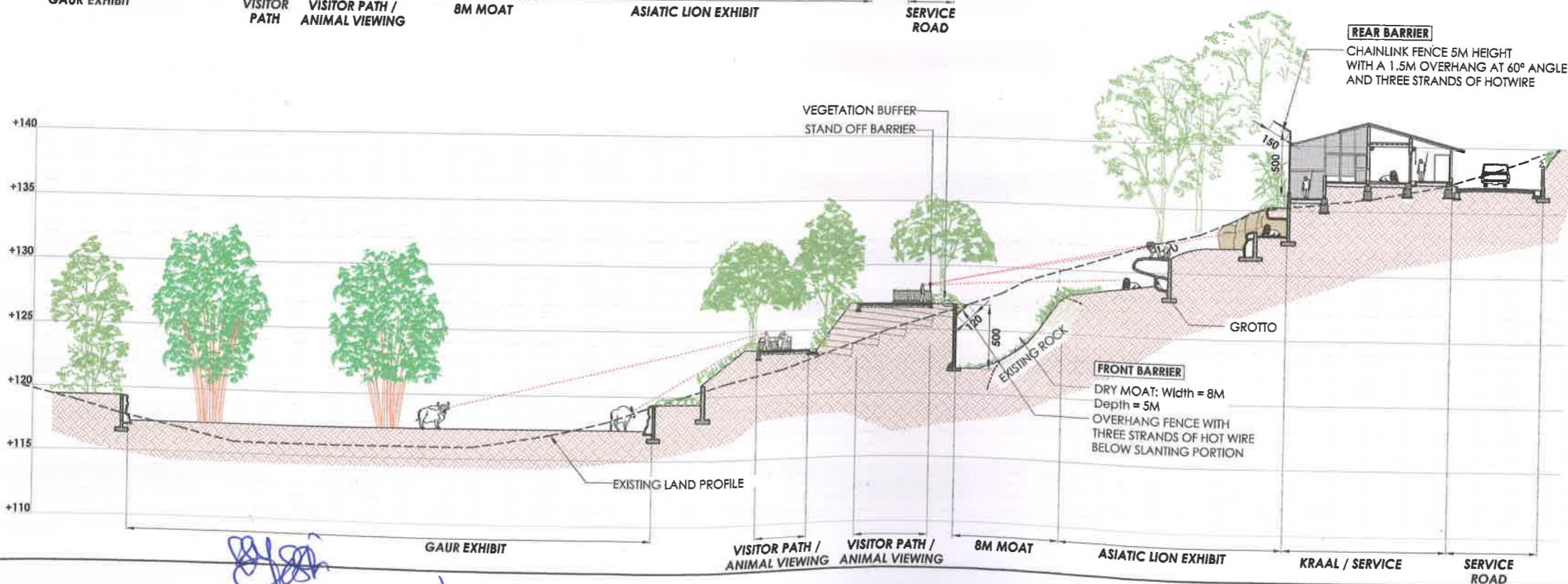
SECTION - A3



SECTION - A2



SECTION - A1



(Handwritten signature and name: C.S. Yalaker)

CONSULTANTS:

Jon Coe Design - Idea Design Consortium

Jon Coe Design Pty Ltd. Idea Design
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KERALA, INDIA



THRISSUR ZOOLOGICAL PARK
Wildlife Conservation & Research Centre, Puthur

DPR - STAGE 3:
DRAWINGS FOR STATUTORY APPROVAL
EXHIBIT NAME:
ASIATIC LION
DRAWING TITLE:
KRAAL - PLAN, ELEVATION AND SECTION
DRAWING NO: DPR/S3/ALN/05
DATE: 27.03.2015
REVISION:

SCALE:
1:100 (A1), 1:200 (A3)

- LEGEND:**
- (135) EXISTING CONTOUR LEVEL
 - +137 PROPOSED LEVEL
 - A SECTION NAME
 - PROPOSED PLANTING
 - PROPOSED LOW PLANTING
 - OVERHEAD MESH
 - FENCE

COLLECTION PLAN:

MALE	FEMALE	TOTAL
2	3	5

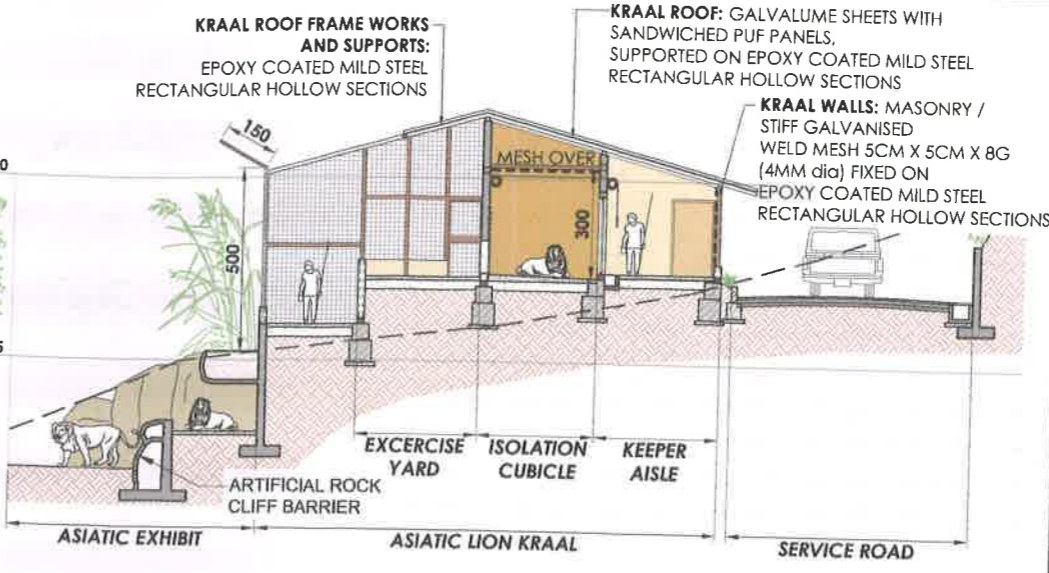
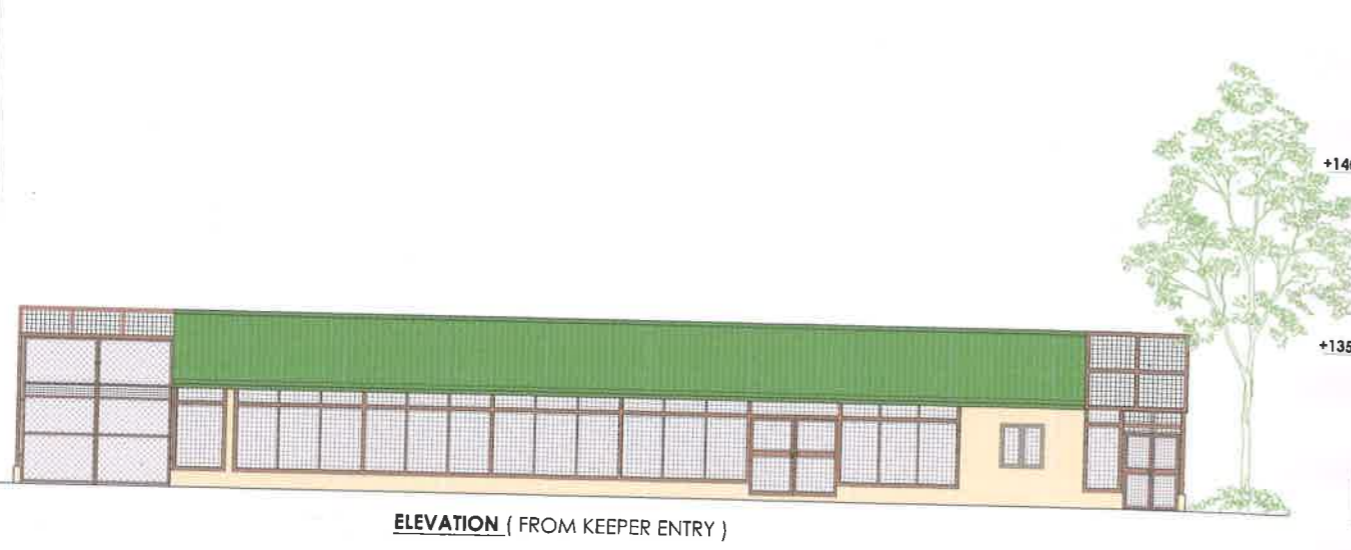
AREA STATEMENT:

KRAAL BUILDING	165 Sq.m
EXERCISE YARD	141 Sq.m
EXTERNAL KEEPER CIRCULATION	140 Sq.m

CONSULTANTS:
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SECTION A-A

ASIATIC LION EXHIBIT AREA

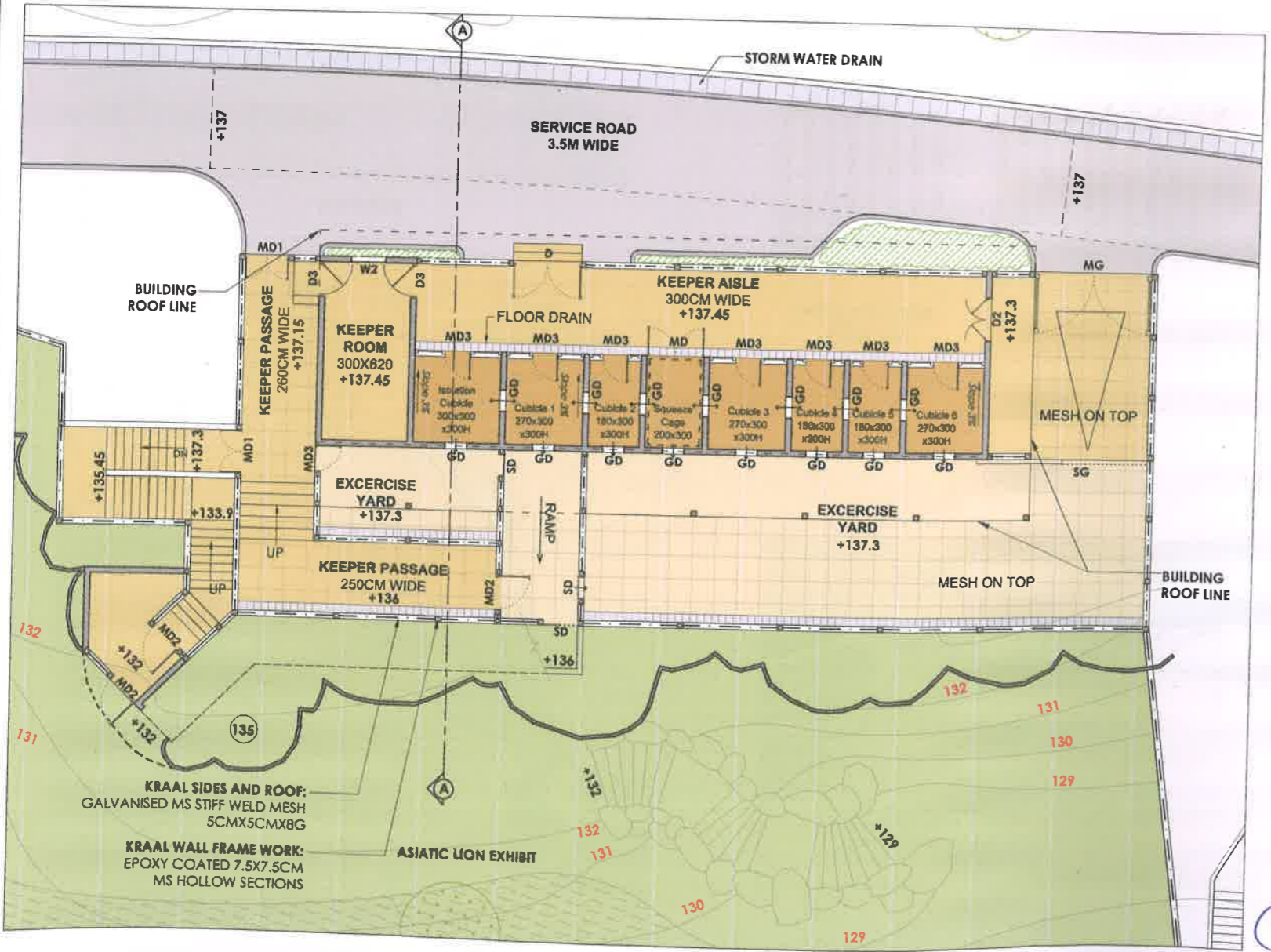
EXHIBIT AREA	1609 SQ.M.
FRONT BARRIER	U SHAPED DRY MOAT- 8M HORIZONTAL WIDTH AT TOP, 5M DEPTH AND INCLINED OVERHANG FENCE WITH HOT WIRE
REAR AND SIDE BARRIER	5M HT CHAIN LINK FENCE WITH ADDITIONAL 1.5 M BARBED WIRE OVERHANG AT 60° ANGLE OR HIGH ROCK WALLS
CHAIN LINK MESH FIXING DETAILS	CHAIN LINK FENCE 5CM X 5CM X 8G (4MM) FIXED ON 75MM X 75MM X 6MM EPOXY FINISHED GI ANGLE POSTS. MESH SHALL BE PLACED ON THE INNER SIDE OF THE STRUCTURAL POST AND SHALL BE EMBEDDED IN THE MASONRY BASE SLOPED BOTH WAYS TO PREVENT ACCUMULATION OF WATER AND URINE.
ANIMAL VIEWING	ANIMAL VIEWING AT TWO POCKETS ALONG VISITOR PATH. ADDITIONAL GLASS VIEWING AT TWO PLACES FROM VIEWING SHELTERS.
ENRICHMENT FEATURES	PERCHING ROCKS, REFLECTING POOL, DEAD WOOD LOGS, GROTTO, ARTIFICIAL ROCK WORK WITH STAIRWAY TO KRAAL, TALL GRASSES, ETC
SERVICE ACCESS	ACCESS FOR KEEPER INTO THE EXHIBIT THROUGH A SERVICE GATE FROM OFF EXHIBIT HOLDING AREA.

OFF EXHIBIT HOLDING AREAS

TOTAL AREA	446 SQ.M.
EXERCISE YARD	141 SQ.M. (MESH ON TOP)
KRAAL BUILDING	165 SQ.M. (TOP COVERED, CHAIN LINK FENCE ENCLOSURE)
FEEDING CUBICLES	6 NUMBERS- EACH OF MIN SIZE 3M X 1.8M X 3M HEIGHT, SQUEEZE CAGE 3MX2MX3M HEIGHT, ISOLATION CUBICLE 3MX3MX3M HEIGHT
ACCESS TO EXHIBIT	THE KRAAL SHALL BE CONNECTED TO THE EXHIBIT AT ONE POINT
ENRICHMENT FEATURES	DEAD WOOD LOGS AND BRANCHES HUNG FROM ROOF SUPPORTS, LEDGES, SLEEPING PLATFORM ETC
SERVICE ACCESS	PARKING AND ACCESS FOR SERVICE VEHICLES TO THE KRAAL FROM SERVICE ROAD

SCHEDULE OF OPENINGS:

	Type	Size		Nos.
		Width	Height	
D	Main door	240	210	1
D2	Panelled door	150	210	1
D3	Panelled door	120	210	2
MD	Mesh door	200	210	1
MD1	Mesh door	150	210	2
MD2	Mesh door	120	210	3
MD3	Mesh door	90	210	8
GD	Guillotine door	75	90	15
SD	Sliding door	60	90	3
W2	Window	120	120	1



PLAN- ASIATIC LION KRAAL

(Handwritten signature)
C.S. Yalanki



THRISSUR ZOOLOGICAL PARK
Wildlife Conservation & Research Centre, Puthur

DPR - STAGE 3:

DRAWINGS FOR STATUTORY APPROVAL

EXHIBIT NAME:

ASIATIC LION

DRAWING TITLE:

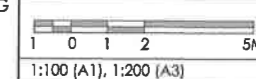
TYPICAL DETAILS - VIEWING SHELTER AND STAND OFF BARRIER

DRAWING NO: DPR/S3/ALN/06

DATE: 27.03.2015

REVISION:

SCALE:



LEGEND:

- +128 PROPOSED LEVEL
- P SECTION NAME
- PROPOSED PLANTING
- PROPOSED LOW PLANTING
- FENCE

CONSULTANTS:

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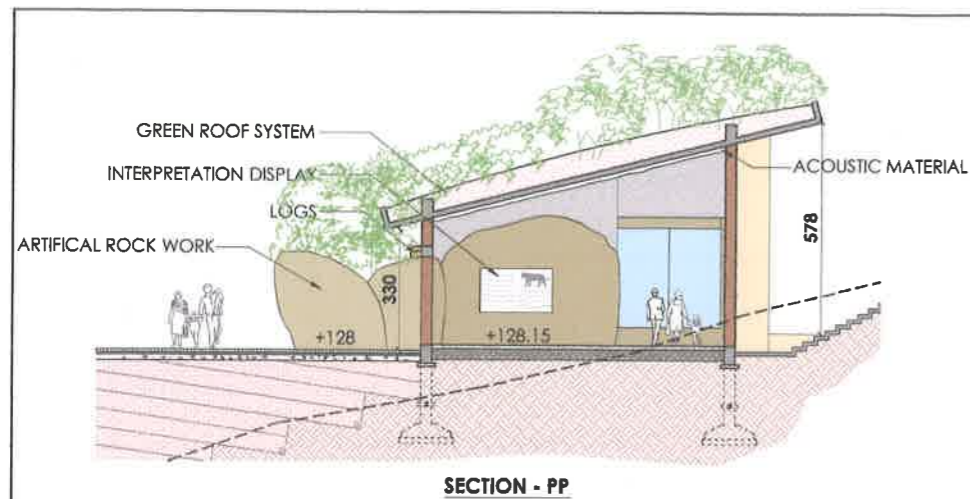
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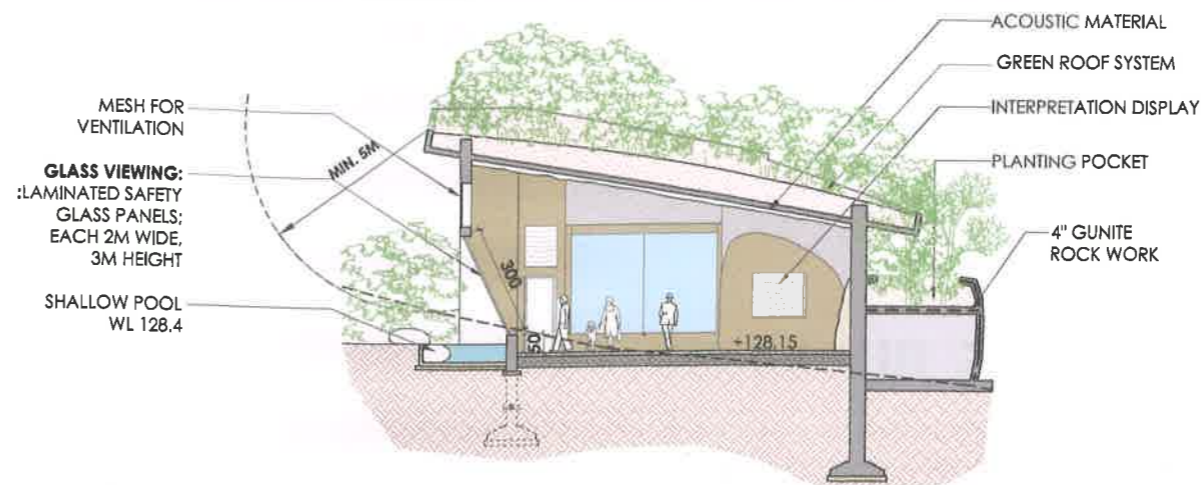
Spoton Engineering Software Services, Emakulam

PROJECT BY:

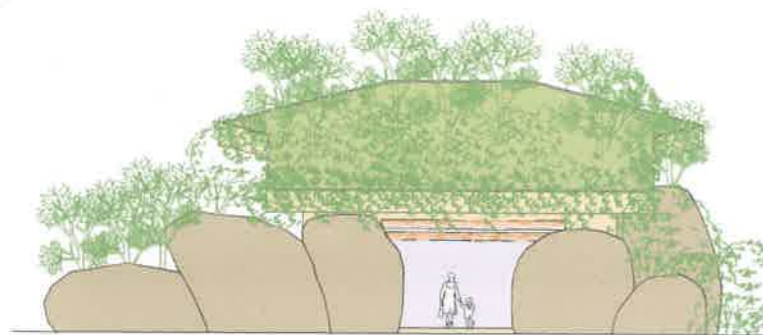
KERALA FOREST DEPARTMENT
GOVERNMENT OF KERALA
FOREST HEADQUARTERS, VAZHUTHACAUD,
THIRUVANANTHAPURAM - 695014
KERALA, INDIA



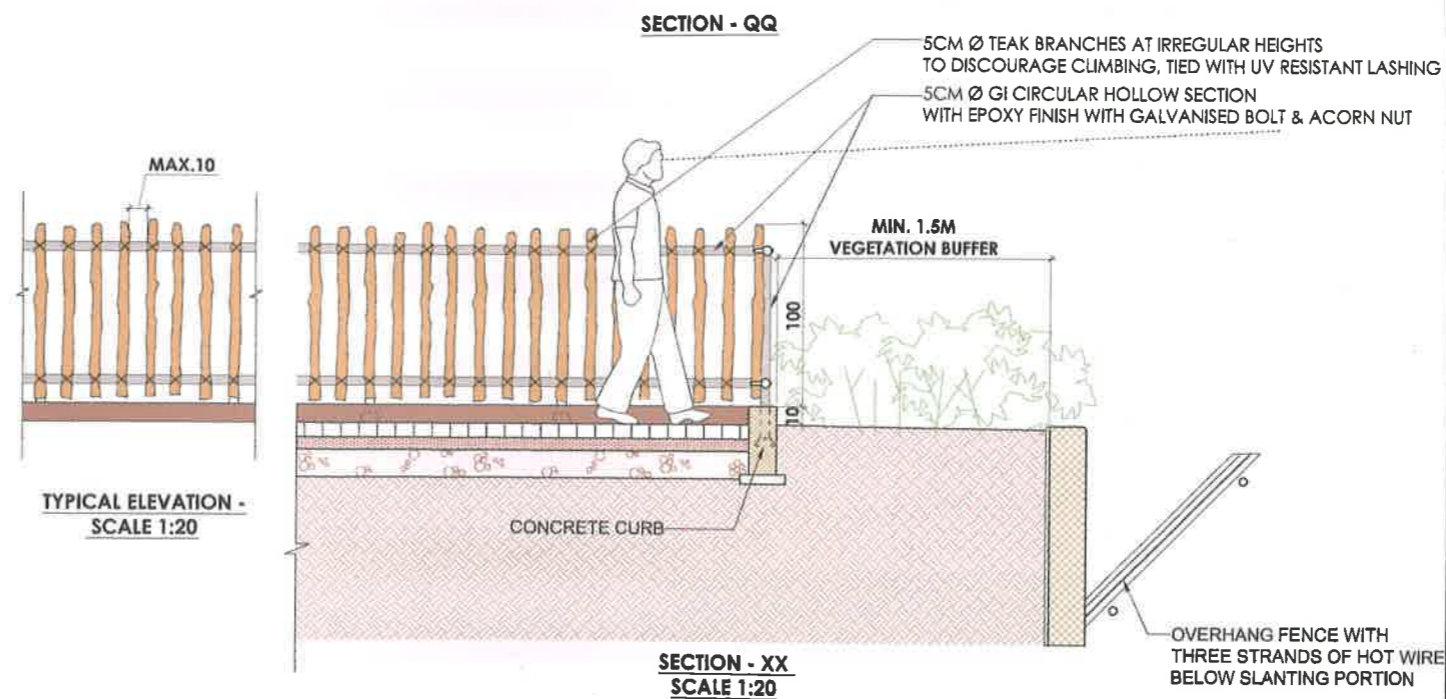
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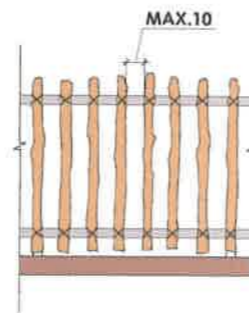
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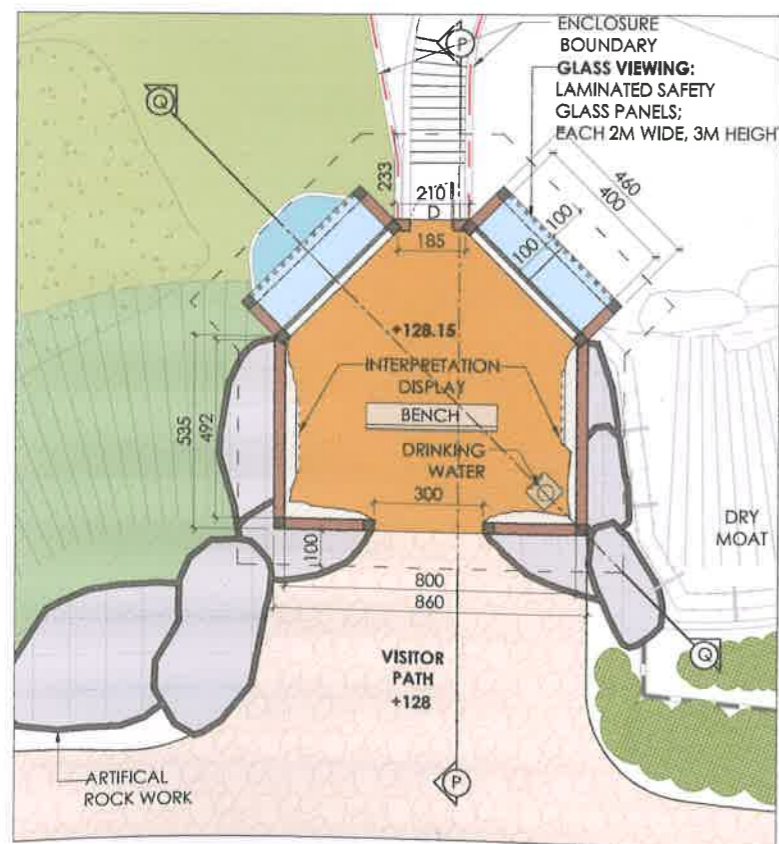
ELEVATION



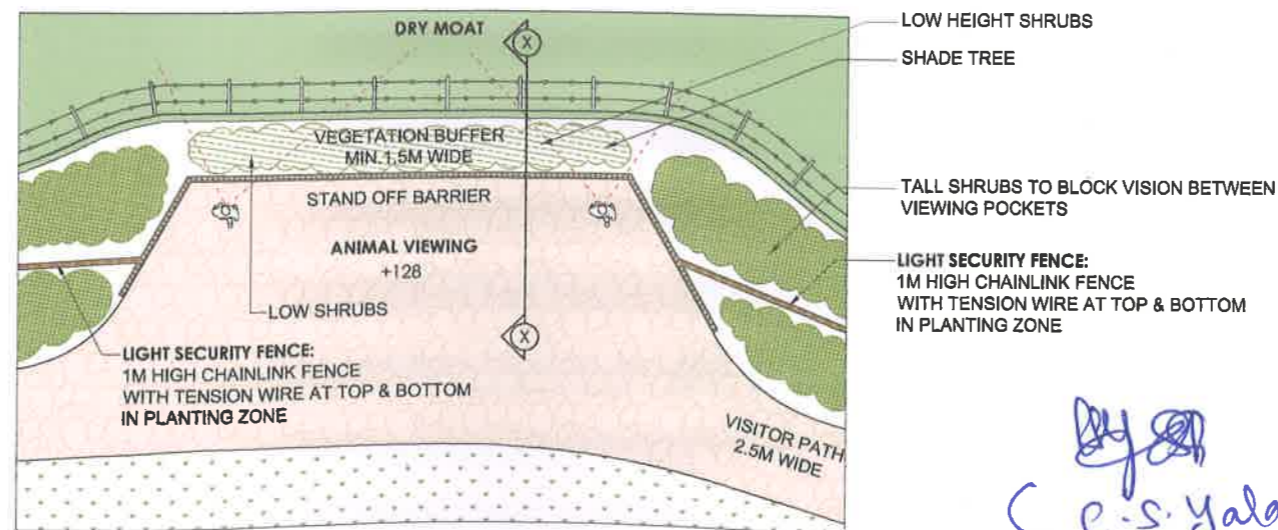
**SECTION - XX
SCALE 1:20**



**TYPICAL ELEVATION -
SCALE 1:20**



TYPICAL VIEWING SHELTER - PLAN
AREA- 55 SQ.M



TYPICAL STAND OFF BARRIER DETAIL - PLAN

(e.s. yalakeri)