

NOTE

Sub: Standard design of zoo enclosures for various species.

Ref: This office letter no. 13/7CCU/647 dated 23.09.2011.

The expert group on zoo designing of the Central Zoo Authority in 24th meeting held on 6th & 7th September, 2011 decided that the standard designs of the zoo enclosures for various species will be prepared by the CZA and circulated to all zoo authorities as a guideline.

The Civil Construction Unit, MoEF was entrusted the drafting of enclosure designs guidelines. It was also decided that the standard designs of zoo enclosures may be based on the enclosures constructed at following locations.

- a) National Zoological Park, Delhi.
- b) Mahendra Chaudhary Zoological Park, Chhatbir, Chandigarh.
- c) Nehru Zoological Park, Hyderabad.
- d) Indira Gandhi Zoological Park, Visakhapatnam, Andhra Pradesh.

The Member Secretary, CZA was requested to obtain and send the designs of enclosures in respect of aforesaid zoo vide this office letter under reference. No communication in this regard was received from the CZA.

The proposal for development of manual is as follow:

1. The proposed manual shall cover the following aspects:
 - a) Plan of enclosure.
 - b) Design of enclosure including feeding / retiring areas and landscape.
 - c) Design of security fencing.
 - d) Design of visitor's viewing area.
 - e) Design of signages.
 - f) Design of services like water, electricity and drainage.
 - g) Enclosure enrichment.

Beside the above aspect, feature as may be considered necessary during the course of development of manual, shall be included in the manual after due deliberations within the expert group. List of enclosures proposed to be included in the manual are given in the annexure-A below.
2. The enclosure design is a very complex subject and requires substantial knowledge of animal behaviour and experience in managing the zoo and the animals there in. Number of legislations and guidelines on animals in captivity have come into force, which are to be followed and borne in mind while designing the zoo enclosure. Therefore it is proposed to associate the following experts having immense experience and knowledge of the subject, for developemnt of the manual.
 - a) Consultant for zoo designing
 - b) Consultant for zoo management.
3. In addition, it is also proposed to utilise the services of following officials of CCU:
 - a) The Executive Engineer (P)-II.
 - b) The Assistant Engineer (P)-II/1.
4. It is expected that about 9 (nine) months are required for development of manual on enclosure designs. The development and preparation of manual would require detailed analysis of available design data, visit to selected zoos and sharing the experiences of enclosure there in, data compilation, formulation of designs, preparation of sketches drawings, compilation of manual, etc.

The following infrastructure facilities and expenses towards the aforesaid activities are envisaged.

Sl no	Description	Number required	Expected expenditure in (Rs.)	Amount in (Rs.)
1.	Data feeder / autocad operator.	9 man months	10,000/- per no per month	90,000/-
2.	Consultants	2 nos	1,00,000 per job	2,00,000/-
3.	Stationery and printing	LS		85,000/-
4.	Honorarium	LS		1,25,000/-
5.	Travelling expenses	LS		6,50,000/-
Total				11,50,000/-

The above estimates are a rough evolution and may need a revision, depending upon the enhancement of the scope, if any.

6. It is requested that CZA may accord concurrence to the proposal, including a commitment for meeting with the financial obligation as indicated above.

(Signature)
29/3/12

(B N Malhotra)
Chief Engineer, CCU.

Member Secretary, CZA.

File no. 13/7/CCU/369 Dated: 29/03/12

*Commit B. of relative
1.2 + 0.25th share*

Annexure-A

List of enclosure proposed to be included in the manual on enclosure design

Sl no	Name of species	Name of animal
1.	Carnivorous	Tiger, Asiatic lion.
		Common leopard, Clouded leopard & Snow leopard, Panther.
		Small Cats.
		Sloth bear, Himalayan black bear, Brown bear and Malayan sun bear.
		Civets, Binturong, Otters, Retel, Hogbadger, Martens, Red panda, Wolf, Jackal and Wild dog.
2.	Primates	Monkeys and langurs
		Slow loris and Slender loris
		Lowland gorilla, Chimpanzee
3.	Ungulates	One-horned Indian Rhinoceros
		Wild buffalo, Yak, Indian gaur and Wild ass
		Brow antlered deer, Hangul & Swamp deer
		Musk deer, Nilgiri tahr, Chinkara, Four horned antelope, Bharal, Goral, Wild sheep and Markhor
		Mouse deer
		Indian Bison
4.	Birds	Birds of prey
		Pheasant
		Water birds (mixed species enclosure)
		Flying birds (mixed species enclosure)
		Flying birds (single species)
5.	Reptiles	Crocodile / Gharial
		Python
		Cobra, Rat snake, Vipers
		Sand boas
		Monitor lizards
		Chameleons and Small lizards
		Tortoises
Turtles		
6.	Amphibia	Frogs and toads