

LOCATION

Ustanova Zoološki vrt grada Zagreba,
Maksimirski perivoj bb, Zagreb
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URL: <http://www.zoo.hr>

KEY WORDS

kopje, savannah

DESCRIPTION

This exhibit complex is part of a larger African savannah design within the zoo's masterplan. Kidepo is a national park in Uganda that served as inspiration for the design of the exhibit.

The lion facilities consist of an outdoor lion exhibit including the simulation of a dry riverbed, moat, pond and cave and a separation lion enclosure in the back, off the visitor view. Both lion enclosures are connected to a "kopje" designed building with the exhibit side being formed to look like a rocky lion's den. The building includes an indoor exhibit and two separation enclosures for the lions, exhibits for hyrax and tortoise, as well as two terraria for small inhabitants of rock crevices. Keeper service and a visitor area with interpretation also form part of this building. Part of the roof of the building is visitor accessible by stairs.

Visitors approach the lion exhibit from the main zoo path choosing between two paths. These paths are leading between three pond sections that visually connect the visitor area with the lion exhibit on the left, and the savannah exhibit on the right. The ponds reaching into the animal exhibits are part of the barriers between animals and visitors. The barriers around the lion exhibit are mesh fence and artificial rockwork in the



Lion ©Zoo Zagreb, 2015



Path to the Simulated Kopje: On the left of the entrance to the cave is an exhibit for hyrax, on the right are stairs to the top on the roof of the cave. Straight ahead of the path is the viewing window to the tortoise indoor exhibit. ©Monika Fiby, 2014

ANIMALS

Family	Species	Common Name	Capacity
Felidae	<i>Panthera leo</i>	African Lion	1.3
Hyracoidea	<i>Procavia capensis</i>	Rock Hyrax	6
Squamata	<i>Bitis arietans</i>	Puff ader	2
Squamata	<i>Gerrhosaurus nigrolineatus</i>	Black-lined Plated Lizard	3
Squamata	<i>Trachylepis margaritifera</i>	Blue-tailed Skink	20
Squamata	<i>Uromastix aegyptia</i>	Egyptian Mastigure	2
Testudinidae	<i>Centrochelys sulcata</i>	African Spurred Tortoise	4
Testudinidae	<i>Testudo kleinmanni</i>	Egyptian tortoise	2

background, a water moat along the main path, and mesh and glass windows for the viewing areas of the kopje.

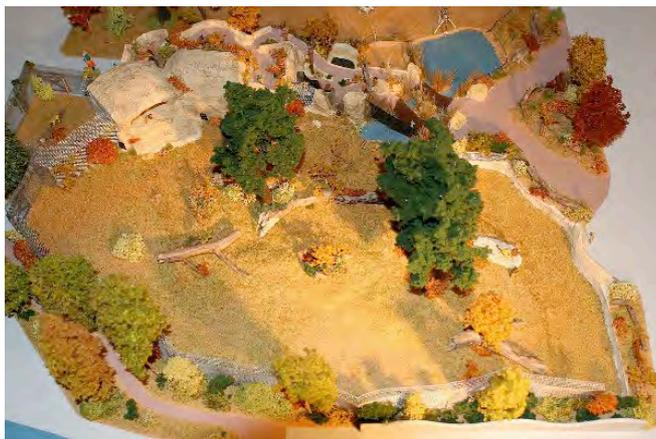
SIZE

Space allocation in square meters:

use	indoors		outdoors		total exhibit
	accessible	total	accessible	total	
animals	110	160	1446	1606	
visitors	46	46	110	110	
others		68		23	
total		274		1739	2015



Lion Exhibit Signage. ©Monika Fiby, 2014



A model of the exhibit was produced as part of the formative planning process. It includes the bridge/pond access to the exhibit, as well as the roof access, outdoor exhibit and separation enclosure. ©Dirk Petzold, 2008

Visitors can see the lion exhibits from different levels and angles: through large glass panels from inside the building, from the path and from the roof, as well as through wire netting from the bridge and across a moat along the main path.

COSTS: Euros 800,000

OPENING DATE: 14 June 2014

DESIGN

Beginning: December 2008

- Concept Design, Model: Dirk Petzold, ZooConsult, Germany
- Landscape Design: Monika Fiby, Vienna, Austria
- Landscape Graphic Design: Lindle Bukor, Vienna, Austria
- Architectural Drawings, Construction Supervision: Studio Arhing, Zagreb, Croatia



Lion Scratching Trunk: The lions enjoy scratching the trunks in their indoor exhibit. ©Zoo Zagreb, 2015

- Planting Consultant: Igor Poljak, Faculty of Forestry, University of Zagreb, Zagreb, Croatia
- Artificial rock work: Igor Lenard, Zagreb, Croatia
- Landscape Design: Ivanka Mlinarić, Zagreb, Croatia
- Input to design: Zagreb Zoo team, Zagreb, Croatia

CONSTRUCTION

Beginning: May 2011

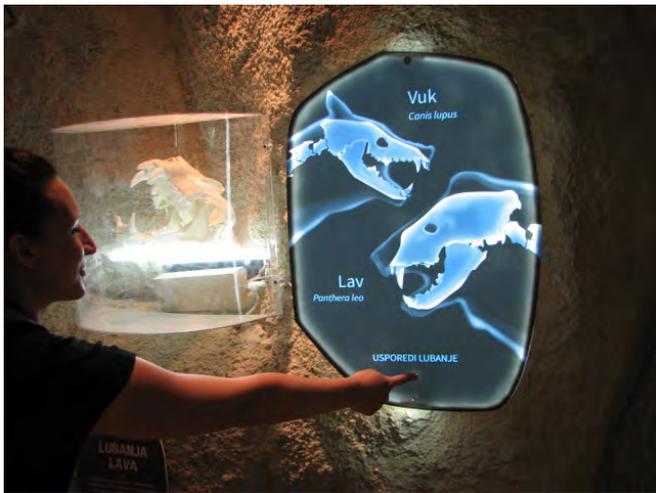
- Artificial rock work: Igor Lenard, Zagreb, Croatia

PLANTS

Planting in the lion exhibit was chosen to replicate the African lion habitat, in both the animal and visitor areas. The design concept is that of a rocky "kopje"-



Indoor Reptile Terrarium ©Monika Fiby, 2014



Lion Wolf Comparison. ©Monika Fiby, 2014

like outcrop in a light, yellowish sandstone appearance, sitting in a dry landscape. The rockwork resembling a "broken kopje" basically consists of two large rocks that are connected by an elevated area. Between the rocks are large pockets for plants growing on different levels.

The exhibit is planted with species representing the lion's natural habitat. Trees, grasses and shrubs were chosen for this purpose, including those that reference a "wadi" or dry riverbed which is replicated in the enclosure. Grasses along the wadi are also



Indoor Exhibit: Deep bedding of bark mulch makes the indoor exhibit soft in appearance, noise and for the lion paws and it absorbs urine and smells. ©Monika Fiby, 2014

planted along the visitor paths to create a sense of immersion for the visitors. Artificial rocks extend into the visitor area to reinforce the impression of a kopje. Planting of trees, shrubs and grasses which keep their leaves in winter allow natural shelter for the lions all year, whilst also maintaining the exhibit's naturalistic look for visitors over the year.

FEATURES DEDICATED TO ANIMALS

This naturalistic enclosure allows the lions to perform natural behaviours such as climbing and resting in

dens. Inside and outside, the lions have choices between hard and soft surfaces and resting places on different height levels.

A heated rock in the front part of the outdoor exhibit and in good view of the visitors is used by the lions as a resting place. The lions use the shrubs along the fences as shady hiding places and the den in the upper part of the building as a look-out.

Skylights ensure sufficient natural light for the animals in the indoor enclosure. Wall fittings such as hooks provide options to install different types of



Cave Drawings. ©Monika Fiby, 2014

temporary enrichment for the lions in the indoor enclosure.

FEATURES DEDICATED TO KEEPERS

The indoor exhibit is connected to two separation indoor holding areas for the lions, as well as a keeper service room for food preparation, storage and for



Off-show Lion Enclosure: Off-show holding area and corridor for the lions into the indoor enclosure. The corridor section also functions as a crush cage in case the keepers need to examine or medicate the lions. ©Monika Fiby, 2014



View of Lion Cave: A view of the lion house and the outside enclosure. Note the visitor viewing area on the roof, and the sheltered lion cave that visitors can see from inside. ©Monika Fiby, 2014

shifting animals. The connection between the indoor enclosures is through a steel slide controlled animal passage. A crush cage is embedded in this animal passage, allowing keepers to fix animals for medical examination and treatment.

Self-locking slides are protected against being opened by the animals. To ensure high levels of security, all slides can be overlooked and operated from a central slide operation device in the keeper



Natural Light Indoors: The lion exhibit has glass panels in the roof. This makes the lion exhibit lighter than the visitor area and reduces glare on the visitor side of the viewing window. ©Monika Fiby, 2014

area, in which all levers are marked with numbers and colours. All animal areas (indoor and outdoor) can be directly overlooked from at least one secure place in the keeper area. The keepers have access to both the outdoor and indoor enclosures from their service area.

FEATURES DEDICATED TO VISITORS

The exhibit is accessible from the main zoo path by two paths with bridges. The three pond sections

visually connect the visitor area with the lion exhibit on one side, and the savannah exhibit on the other side. While the pond in the middle is in the visitors area, the two others are part of the exhibits and accessible for the animals.

The lion exhibit offers the visitor a diversity of lion experiences. From the lower level, the visitor can see the lions in their indoor enclosure that contains access hatches to outside. The upper level of the house offers a view into the back of the lion's outdoor cave. Separated from the lions by large glass panels, the visitors get a close-up view of the lions resting



Lion Men Comparison: Pictures of zebras as seen by a lion or a man in dawn show that the eye sight of lions in the dark is much better than ours. ©Monika Fiby, 2014

and can feel close to the animals. The roof of the lion house is visitor accessible by stairs. It opens up a wider view of the outdoor enclosure and seating to the visitors. Wire netting next to the bridge enables the visitors to get close to the animals while also perceiving their smell and sound. A water moat along the main path provides free insight without glass or wire netting into the lion habitat. Skylights in the lion indoor exhibit allow natural light to fall on the animals, while visitors receive indirect light,



Hyrax and Mousebird Indoor Exhibit. ©Monika Fiby, 2015

which prevents glare and reflection on the viewing window. The inclusion of small African animals to the exhibit complex enhances the experience of the African kopje habitat.

INTERPRETATION

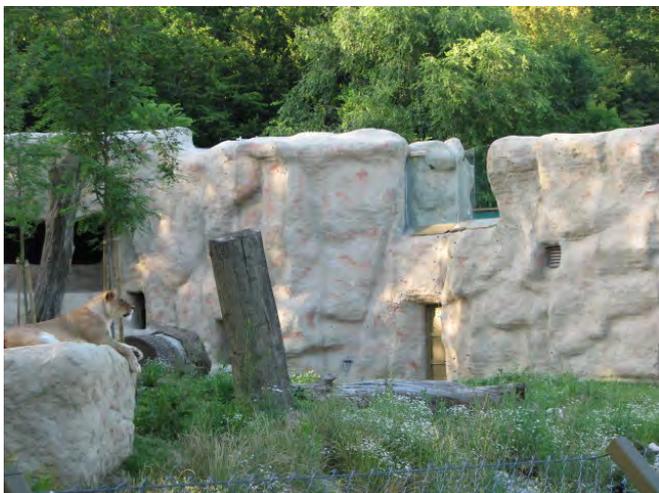
The informal part of interpretation of this exhibit is the design showing various aspects of a lion habitat. Apart from signage about the social structure, territoriality and distribution of the species, the exhibit offers interactive information about lion eyesight comparisons, skull depictions, and a lion



Separation Enclosure: This enclosure is not visible to the visitors. It is connected with the building and with the main exhibit. ©Monika Fiby, 2015

skeleton. The floor surface of the visitor cave resembles dry clay and shows animal footprints, while the walls are painted with cave drawings, depicting lions.

The various small African animals in the exhibit complex are introduced with identification signs. On busy days, zoo education staff are available around the exhibit to answer visitors questions and to



Outside Lion Exhibit: Another view of the lion house. Note the service entrance to the building below the visitor viewing area on the roof. ©Monika Fiby, 2014



Fence with Overhang: Three strands of electric wire are running along with overhang of the mesh fence. ©Monika Fiby, 2015

provide information. A scheduled daily keeper’s talk informs visitors about the lions.

MANAGEMENT

The lions can be separated from each other in the main exhibit and an outdoor holding enclosure in the



View from the Roof of the Building. ©Monika Fiby, 2014

back. Both enclosures are connected to separate indoor areas. The use of a deep-litter mulch substrate in the indoor exhibit absorbs urine, smells, and sound, and is a economical tool in the management of this exhibit as it only needs to be changed every few years.

CONSERVATION

The lion is a vulnerable species, threatened in the wild by indiscriminate killing (usually for livestock protection) and prey depletion. The lions at Zoo Zagreb are not part of a breeding programme for the species, however the interpretation of the exhibit educates visitors on the conservation threats faced not only by lions, but also by other African species.