Chester Zoo - Elephants of the Asian Forest

ZOO LEX Exhibit by Matthias Papies[1], Mark Sparrow[2], Gill Wells[3] and Monika Fiby[4]

Introduction :
Matthias Papies was a trainee at Chester Zoo for several weeks lastwinter. One of his tasks was to prepare exhibit presentations for the ZooLex Gallery. Matthias was learning about animal keeping, exhibit design and online publishing when preparing these presentations. He can now refer to scientific publications that he co-authored. We would like to thank the management of Chester Zoo for the great initiative and hope that other zoos will follow this example. Elephants of the Asian Forest is a new facility at Chester Zoo. The heavily planted tropical indoor exhibit which was just recently finished: http://www.zoolex.org/zoolexcgi/view.py?id=859

LOCATION:
North of England Zoological Society , Upton-by-Chester , Chester CH2 1LH , Great Britain
URL: http://www.chesterzoo.org

DESCRIPTION:
The new state-of-the-art facility Elephants of the Asian Forest' is a purpose built enclosure for our breeding herd of Asian elephants and other threatened species of their habitat. Through this themed area Chester Zoo promotes the outreach conservation work of the North of England Zoological Society (NEZS).

The new building, a big tropical house, is situated on the site where the old building was, but is much more spacious than the old one. Next to the elephant indoor enclosures there are several off-show pens, especially for the bull. One main outside elephant paddock (with a pool), a bull yard and two off-show yards allow to separate elephants if necessary. The outside exhibit was finished in 2000, the inside in 2006. Inside the house the visitors journey along a pathway through forest vegetation and live planting is supplemented with artificial trees and roots. Enclosures for typical animals of the elephants' habitat, interpretation elements and models support the message of biodiversity with Asian elephants as flagship species. In the entrance area is an aviary for Asian birds. The first animal encounter in the building is with Great Hornbills. Further themed enclosures along the pathway display small mammals, reptiles and fish. On leaving the building the visitors pass two enclosures for tropical squirrels.

Along the outside exhibit the visitors can follow a pathway with different viewing points and educational features. Here, the barrier is a ha-ha (accessible dry moat) on most parts. On one side concrete poles looking like tree trunks form the exhibit barrier.

ZooLex

SIZE:
'Elephants of the Asian Forest' has a total size of nearly 1 ha including service and visitor areas. The main yard for elephants has a size of 5900m² (including a planting bed of 160m² and a separation yard of 227m²) & the bullyard is 550m². Two off-show yards have a total size of 270m². The building itself has a footprint of 2730m². Asian elephant: The main cow area covers 1000 m² which can be divided into five separate pens. Three more pens (407m²; 165m²; 275m²) are available for bulls and management purposes (e.g. quarantine, separation). Great hornbill: 117m²; tree shrew: 16m²; aquarium: 17m² (23,800 litres); squirrels: two exhibits each 35m²; Asian bird aviary: 63,5m²

COSTS:
£ 3,000,000 including 7% for design.The costs are for the building only since the outside exhibit was already finished in 2000. Opened in 10 April 2006

PLANTS:
The overall theme for the planting is Asian tropical rainforest. The outside entrance area has been heavily planted with large leaved 'exotic looking' plants, many of which are evergreen. This theme is continued into the House, and because the House is maintained as a tropical environment we have been able to use plants from S.E. Asia.

A number of educationally interesting and some economically important tropical plants are being grown. They contribute to the interdependence message. This includes *Amophophallus albus, A. dunnii, A. konjac, Musa 'Cavendish* (Banana), *Ficus religiosa* (Peepul tree), *Zingiber officinale* (Ginger), *Elettaria cardamomum* (Cardamom), *Artocarpus altilis* (Breadfruit), *A. heterophyllus* (Jakfruit), *Averrhoa carambola* (Star fruit), *Cananga odorata* (Ylang-Ylang), *Mangifera indica* (Mango), *Carica papaya* (Pawpaw), T*ectona grandis* (Teak).
A significant number of lianes and climbers have also been used. The plant list specifies the Latin names of the plants used for this exhibit.

FEATURES DEDICATED TO ANIMALS: Asian elephant: The floor is covered with rubber and partially with sand which is gentler to elephant feet than concrete paving. The feeding dispensers

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[1]Intern Chester Zoo, [2]Curator of Botany and Horticulture, [3]Interpretation Officer, [4]Editor of ZooLex

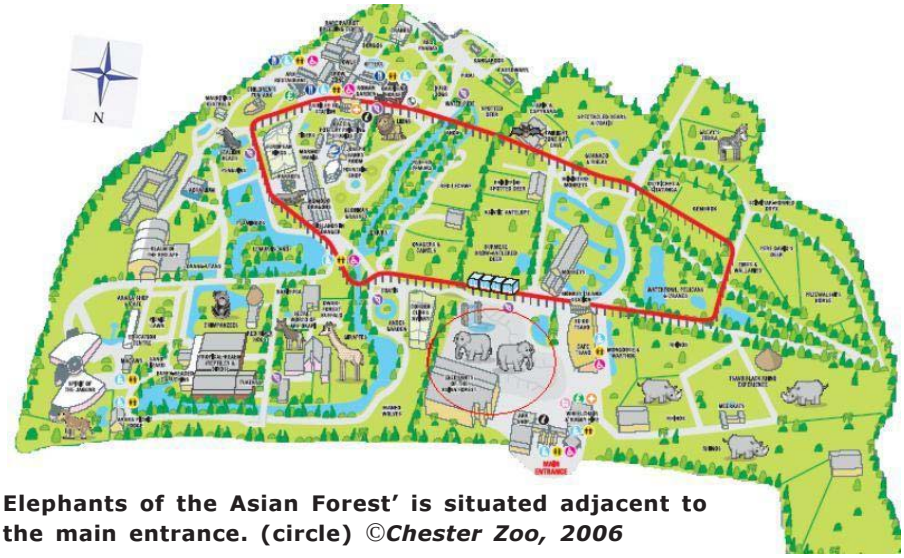
(inside and outside) are designed to serve as enrichment. Moats have gentle slopes to provide maximum space and safety (excluding the risk of animals falling into moats). The outside pool is accessible from all sides so that there is no chance that an animal can trap another subordinate one.

Small mammals: Light timers provide natural light duration. Asian bird aviary: Outdoor sheds have heating. Great hornbill: A dimmer switch generates dawn light. Special nest boxes are provided. Aquarium: Light timers provide natural light duration.

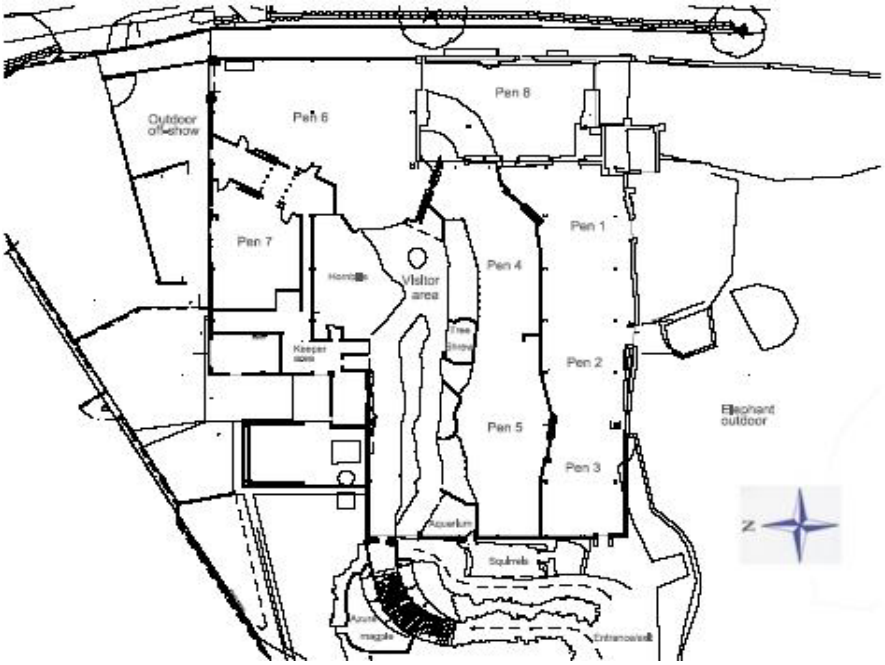
FEATURES DEDICATED TO KEEPERS:
A training fence at the bull pen with openings for the elephant's feet and ears allows protected contact between keepers and bulls. There is an elephant race with training fences on both sides in order to restraint an elephant if necessary. All gates are hydraulic and can be operated from a control room or a safe area on site. There is camera control for all gates and camera views of the pens, including night-vision capability.

FEATURES DEDICATED TO VISITORS:
Visitors can stay in the building for a long time during bad weather and winter without losing interest, as there are many different species and educational features to enjoy. Along the outside elephant exhibit, different viewing points deliver different insights at different height levels. The paths are accessible for everybody and glass windows in some barriers provide views onto lower levels. A life-size bronze model of a baby elephant in the outside area provides a nice photo motive for visitors.

INTERPRETATION:
Our new 'Elephants of the Asian Forest' exhibit celebrates the richness and complexity of forest life. The interpretation was designed to be inclusive, engaging visitors of all ages and



Elephants of the Asian Forest' is situated adjacent to the main entrance. (circle) ©*Chester Zoo, 2006*



Ground plan of the building. The visitors enter and leave the building at the west side ©*Chester Zoo, 2006*

ANIMALS

Family:	Species:	Common Name:	Capacity:
Bucerotidae	*Buceros bicornis*	Great hornbill	1.1+offspring
Carettochelyidae	*Carettochelys insculpta*	Fly river turtle	1.1
Cobitidae	*Botia macracanthus*	Clown loach	many
Corvidae	*Cyanopica cyana*	Azure-winged magpie	2.2+offspring
Cyprinidae	*Probarbus jullieni*	Pla Eesok	0.0.6
Elephantidae	*Elephas maximus*	Asian elephant	2.8+5 offspring
Osteoglossidae	*Scleropages formosus*	Asian arowana	0.0.2
Phasianidae	*Pavo muticus* Green	peafowl	1.1 + offspring
Sciuridae	*Callosciurus erythraeus*	Pallas' squirrel	1.1 +offspring
Sciuridae	*Callosciurus prevosti*	Prevost's squirrel	1.1 + offspring
Testudinidae	*Indotestudo elongata*	Elongated tortoise	1.1
Tupaiidae	*Tupaia belangeri*	Belanger's tree shrew	1.1+offspring

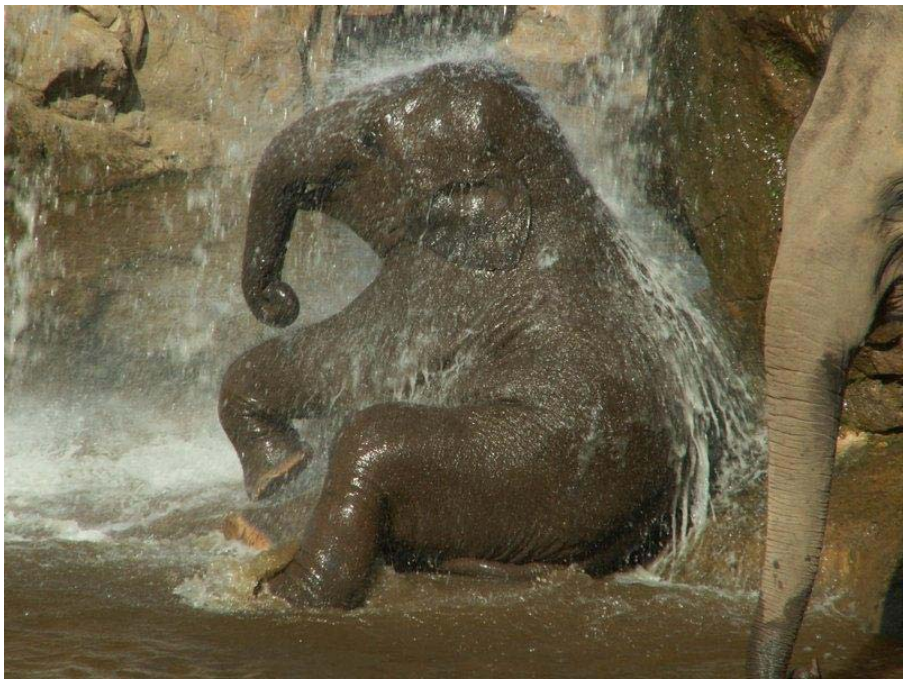
abilities. A fun, interactive, multi-sensory approach stimulates exploration. Primer signs along the entrance pathway pose questions and encourage self-directed learning e.g. spotting signs of elephant presence such as footprints, dung and damaged trees. Attractive signage conforms to good practice with simple, straightforward text and colourful illustrations or photographs to add immediacy. Interactive panels, stories, models and, of course, live plants and animals engage the visitor and deliver conservation messages relating to biodiversity, interdependences and Chester Zoo's *in-situ* work in Assam. The life-like models are popular as they demonstrate a variety of animal behaviours not readily seen with live species e.g. tree shrew foraging in rafflesia, tortoise laying eggs, tree squirrels feeding in a tree.

Existing interpretation around the outside paddock and viewing area raises visitor awareness of elephant biology and adaptations, their husbandry and conservation issues. Visitors enjoy touching models, lifting flaps and reading diaries while watching the elephants splash in their pool. This water is cleaned using a reedbed nearby. Interpretation in the reedbed area delivers an important sustainability message in a fun way.

MANAGEMENT:
The elephant facilities are maintained by a team of six keepers. One bull and three cows are managed in protected contact while the rest of the herd is managed in direct contact. The bird, small mammal and aquarium exhibits are serviced by several keepers from separate teams.

RESEARCH:
In 2006, 15 external researchers conducted projects on elephant behaviour. The zoo's in-house research assistant conducted research on the transfer of a new female elephant from a zoo in France to Chester Zoo and the effects which this introduction has had on the whole herd. The education department staff also conducted research on several aspects:

- Tracking visitors around exhibit, recording overall dwell time
- Recording time spent at different exhibit elements (animals, educational material, etc.)
- Looking at the effect of visitor density and viewing area (as well as animal visibility) on people's behaviour



A young bull is playing under the waterfall. ©*Chester Zoo, Matthias Papies, 2006*

Attractive entrance to the Elephant complex. ©*Chester Zoo, Matthias Papies, 2006*

CONSERVATION: Chester Zoo's Assam Haathi Project: This project was set up and is managed and coordinated by Chester Zoo staff. Research to reduce elephant-human conflicts is carried out in Assam, where one of the biggest populations of Asian elephants remains. Elephant movements and behaviour is monitored and recorded in order to better

Several education panels and interactive elements give visitors the opportunity of self-directed learning. ©*Chester Zoo, Matthias Papies, 2006*

Physical contact between visitors and elephants is prevented by inaccessible buffer areas. ©*Chester Zoo, Matthias Papies, 2006*

understand the nature of these conflicts. Project partner is the local NGO Ecosystems-India. The project also operates at a village level. In cooperation with selected communities the human-elephant conflicts are tried to be reduced by implementing various mitigation methods such as trip-wires, watchtowers, chilli smoke, etc. Chester Zoo funds and supports IUCN SSC Asian Elephant Specialist Group activities and provides specialist technical support to other elephant facilities in South Asia. Every year grants are also given to student elephant projects through the Richard Hughes Scholarship.

LOCAL RESOURCES: All involved companies are situated in the UK, except Pangea Rocks. Most of the building material, e.g. sands and stones, are sourced from local areas.

It's Time for a Professional Approach to Exhibit Label Design!

Monica Post

From the famous ZOO LEX

People don't read signs.... how many times have you heard your education director say that? How often have you said or observed that? The truth is, to some extent you're right. People very often do not read the signs in our zoos and aquariums. But have you ever considered, why they aren't reading the signs? Are we all assuming that people in general are lazy, illiterate, not interested in learning? We recognize that few people are reading our signs, but we fail to consider the reason. We put all the blame on the visitor. It's time to wake up and recognize that it's not our visitors, and you can't blame an inanimate object like the sign..... the real responsibility rests on the sign designer.

So who is designing our signs, labels, graphics, interpretive elements or whatever you want to call them? For most of us it's still done in house, by the educator, curator, graphic designer or exhibit designer. Some of us instead are recognizing the need to look outside to a professional sign company and so we go to someone local who also does signs for fast food restaurants and convenience stores..... Hmmm, is it any wonder why people aren't reading the signs? Let's look at this more closely... could you pick anyone off the street, give them a manual and expect them to be a great aquarium or zoo educator? How about a great curator or exhibit designer? These aren't jobs that can be learned from a manual, it takes a certain personality, background, education and intuitive nature for the occupation. How about a graphic artist? Think about it, should the person that does the Breakfast