



# Zoos in transition

## Research about the future of zoos

**Zoos are important institutes that have different functions and structures and are located in or nearby an urban region. These are parks with wild and rare animals that visitors can observe from close distance. At this moment, zoos are facing major changes and many of them are restructuring, expanding and renewing their zoo or concept. In this process more and more landscape architects are involved in this process. This thesis research focuses on the current challenges in zoos and looks forward towards the future for zoos.**

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### **Research structure**

The goal of the research is to find future concepts for zoos and test one of these concepts with a design for Dierenpark Emmen. Along with this goal, the role of a landscape architect in zoo design is explained as well as the way zoos can integrate with their surroundings. One of the problems is that zoos have the tendency to become solid “green blocks” in the landscape and create a world of their own. This is a choice that zoos make, but it is interesting to see that the environment can influence the structure of the zoo and also determine the zoos identity.

Another big problem is that zoos are every day of the year open for public. With the changing climate, with wetter summers, colder springs and warm autumns, the zoos need to adapt. Along with the list of recommendations developed to let the zoo function throughout the year in all kinds of weather conditions, one of the future zoo concepts was tested to develop a new zoo for Dierenpark Emmen.

Fieldwork was an important method of acquiring information. Hardly any literature about zoo concepts, structure and future developments could be found and therefore fieldwork was crucial for this research. For this thesis, nineteen zoos were visited in the Netherlands, Belgium, Germany and Denmark. While visiting these zoos, the route and structure were analysed and interviews or guided tours were given by zoo management. Also several animal enclosures were extensively analysed and placed into the zoos structure and concepts. The project team consisted of several students who helped with sketching and photographing for this project.

### **Functions**

Before explaining the structures, typologies and designs of zoos, it is important to know what the functions of zoos are. Some people see in zoos animal cruelty, but they fulfil an important role for the wildlife.

In general, there are three important functions of zoos: education, recreation and conservation. Recreation is a broad function and can contain things like entertainment and relaxing. Recreation is an important function because it can accommodate both other functions. If people are enjoying their visit to the zoo, they are more willing to learn about the animals, biotopes and problems in the world. This way education and conservation can be integrated in recreation and this is called informal learning (Turley, 1998). Informal learning is that people have a relaxed visit and without the focus on education, they can learn something while visiting the zoo.

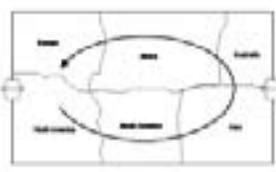
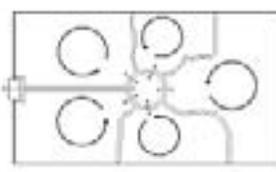
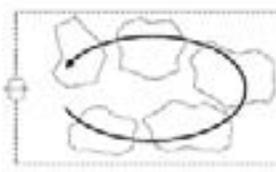
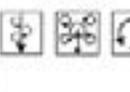
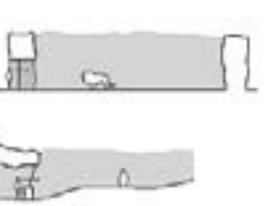
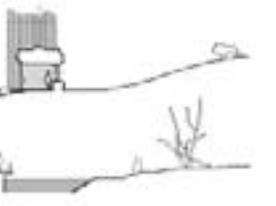
Education and conservation are closely combined. Education panels give visitors information about the animals they see, the natural habitat and the problem the species are facing. That is also a reason why zoos should exist: to let people realise what happens to the wildlife. Hancocks (2001) sometimes names zoos living museums. Zoos can be spots where species survive and that's why according to Turley (1998) conservation is maybe the most important reason why zoos have the right to exist: they prevent species for extinction and even have the opportunity to let the species return in the wild again.

### **Zoo typologies**

In order to research the structure of the zoo, its animal enclosures and the location of the zoo, an analysis was made on different scales levels. With these outcomes, combined with the specific history of zoos (literature research) four zoo typologies were distinguished with different characteristics.

#### *Menagerie zoo*

These zoos are collection zoos that function as a park for the city. Their basic underground is a park structure without a routing. The animals are housed in buildings and enclosures and clustered based on their taxonomy. These type of

MENAGERIE ZOO		CONTINENT ZOO		EXPERIENCE ZOO		EMERGING ZOO	
							
<ul style="list-style-type: none"> <li>- park landscape, large trees, lawns</li> <li>- surroundings visible (high rise buildings)</li> <li>- big architectural buildings</li> <li>- impressive entrance - multiple entrances</li> <li>- species clustered animal enclosures</li> <li>- zoos founded in the 19<sup>th</sup> century</li> <li>- scientific and artistic institutes studying the animal</li> </ul>		<ul style="list-style-type: none"> <li>- zoo divided in continents and/or climate zones</li> <li>- routing around the continents</li> <li>- educational facilities (cafés, museum)</li> <li>- animals living in herds and natural surroundings</li> <li>- functional enclosures built for animals</li> <li>- buildings hidden, architecture less important</li> <li>- viewpoints around enclosures</li> <li>- studying nature instead of animals</li> </ul>		<ul style="list-style-type: none"> <li>- theme areas or worlds</li> <li>- play facilities for children around enclosures</li> <li>- central route with entrances to worlds</li> <li>- relatively smaller or transformed enclosures</li> <li>- learning from animals by seeing them in action</li> <li>- attention to designed architecture</li> <li>- show areas/demonstration/brearies</li> <li>- visitor's needs as focus (emotion zoo)</li> </ul>		<ul style="list-style-type: none"> <li>- zoo divided in continents and/or climates</li> <li>- former estate locations with a lot of space</li> <li>- small variety of animals, but large animal enclosures</li> <li>- local elements relating back to surroundings</li> <li>- completely designed zoos, natural looking</li> <li>- zoo design based on landscape</li> <li>- searching for extra popular animals</li> <li>- young emerging zoos in development</li> </ul>	
LOCATION IN RELATION TO CENTRE	ROUTING	LOCATION IN RELATION TO CENTRE	ROUTING	LOCATION IN RELATION TO CENTRE	ROUTING	LOCATION IN RELATION TO CENTRE	ROUTING
							
TYPE OF ENCLOSURES		TYPE OF ENCLOSURES		TYPE OF ENCLOSURES		TYPE OF ENCLOSURES	
							

Overview of the different zoo typologies at this moment

zoos are often located in the city centre and are the oldest among the zoos visited. These zoos apply a park structure with meadows and ponds enabling people to choose their own route. The zoo architecture often refers to the history of the zoo or the animal. Species clustered buildings are for example primate houses, predator galleries and bird houses. This specific way of clustering the animals has to do with the original function of these zoos: studying the anatomy and taxonomy of individual animals. Animals were collected from all over the world to enable visitors and researchers to study them, and also artists were regular visitors of these zoos. The outdoor enclosures apply different kinds of separations between animal and visitor. The older stage-configuration enclosures are also common. These enclosures apply a canal or glass wall as the main separation between visitor and animal, and the back of the enclosure is formed by the architectural indoor enclosures. The animals are 'presented' to the public on a stage, so they can observe the animals from almost every corner of the outdoor enclosure. These

zoos are relatively small in size and contain the largest variety of species of all zoos visited.

#### Continent zoos

These zoos are structured in continents with a routing that guide visitors along all the different parts of the zoo. The large enclosures represent the animal's natural habitat to stimulate natural behaviour of the animal. From the seventies onwards, some zoos started transforming themselves clustering the animals by continent and creating a one-way route throughout the zoo. The focus of studying the animal itself shifted to observing the animal as being part of a wildlife ecosystem. This meant that for instance natural group sizes of animals had to be introduced, elephants in herds, multiple species savannah enclosures and gorillas in larger groups for example. Buildings became less dominant and were often hidden, because the focus was on the animal and its natural surroundings. The distance between visitor and animal became larger with the use of large moats around the enclosures. Visitors have to observe

(search) the animals from a distance for a longer time or just spot them occasionally.

#### Experience zoo

These zoos contain several worlds based on a certain theme and offer a wide variety of facilities and routings. Influenced by Disneyization, the experience zoos arose at the end of the twentieth century. Although their structures are very diverse, these zoos are built up around a central theme. These areas can be accessed from one central square, or via a one-way route through all the different theme worlds. Each theme area contains several animals, a restaurant, play grounds and sometimes a shop. The distance between visitor and animal is very small, sometimes they are only separated by a glass window. These windows are placed in such a way that the visitors have an optimal view into the enclosure. The themes can be based on continent, climate, taxonomy, colour or story line depending on the concepts of the zoo. This type of zoo can be also referred to as emotion zoo, because the visitor's experience is the focus of these zoos. Compared to the other zoo typologies,

the wishes and experiences of the visitors have the most central position in the experience zoo.

#### *Emerging zoo*

The emerging zoo is a relatively young type of zoo and therefore their animal inventory is not as extensive as most of the older zoos. Only a few species of the 'standard' expected zoo animals, like primates, bears, elephants, predators and savannah animals, are present in these zoos. These zoos use the landscape as a basis for their structure and are characterized by large enclosures. They are often located outside the city and their sites provide enough space for large enclosures for groups of animals. The landscape offers unique possibilities like elevation differences, existing green structures, brooks, forests and meadows. These zoos also pay attention to the local history of their surroundings and contain more indigenous animals than other zoos.

In general three layers can be distinguished in every zoo typology: a layer for the visitors (routing, restaurants etcetera.), one for the animals (enclosures) and a third layer for the staff who takes care of the animals and the visitors.

The emerging zoos will probably disappear in the future. These zoos are still searching for popular animals that they lack in their inventory. Because they are relatively young, many zoos of this kind are developing plans to move towards the other three categories. At this way, three different zoo concepts will arise in the future:

1. New menagerie zoo: back to their traditional concepts, but with less animals and more space for the remaining enclosures. The design of the enclosures will still be of main importance. The zoo will still contain its park structure, but the animals could be clustered both by taxonomy or continent.
2. Biotope zoo: continent zoos will disappear and will be transformed into a biotope zoo. The existing continents will be broken down into several smaller ecosystems. The importance of architecture will increase so that buildings will not be hidden anymore.
3. Experience zoos: this category is still developing. Depending on their theme, they could be closely related to one of the previous zoo concepts. More zoos are switching to this zoo concept, although their themes are based on continents or climate zones.

Most of the zoos are in transition and after visiting the nineteen zoos, studying their plans and also studying other zoos, some recommendations could be made for future zoo structures.

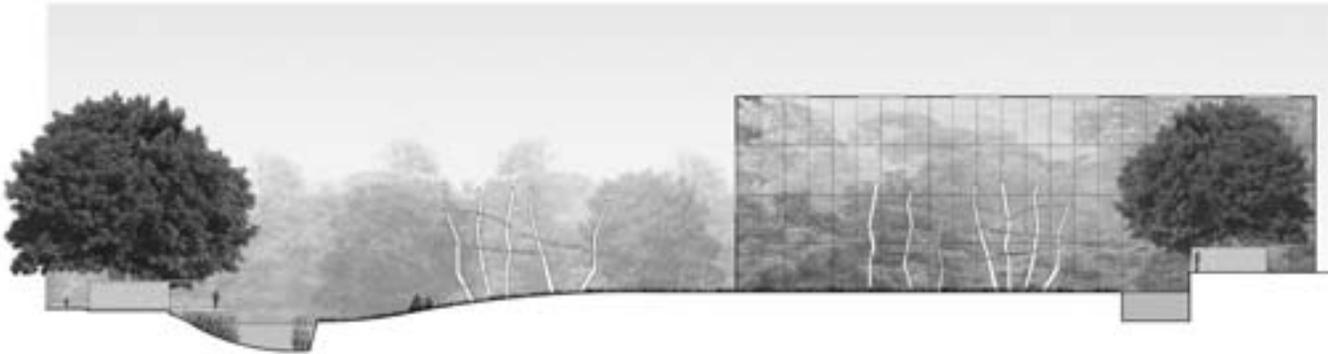
#### **Recommendations**

One recommendation is to integrate the zoo in its surroundings. By searching connection with the (surrounding) landscape, not only the structure can be improved, but also the zoo's identity. The current zoos are mostly closed green blocks with no connection with their surroundings. This way, these zoos can just be placed anywhere in the landscape. Analysing the landscape can add possibilities for the structure of zoos and create a stronger identity.

Another important recommendation is the use of more indoor enclosures and activities. With less weather, the zoo as an outdoor recreation facility will become less attractive. Indoor facilities can increase the functioning of the zoo throughout the year. Not only the visitors, but also the animals can profit from this. They will spend more and more time indoor and therefore larger indoor facilities could be build. The construction of zoos can also be

Impression of elephant enclosure for Dierenpark Emmen with visual integration of surroundings and also functions as landmark





Section of gorilla enclosure with indoor and outdoor part

more sustainable with focus on sustainable materials and the use of alternative energy. In these buildings, also education facilities, a restaurant and congresses can be integrated. At this way multifunctional buildings can be constructed.

It is important to keep in mind that zoos must be recreational for visitors. When visitors enjoy the zoo, it is easier to educate them about the animals and the issues of animals in the wild. By improving the variety for visitors, they can do more than only watch animals. Restaurants, play grounds, education centres and multiple indoor and outdoor activities can add new functions to a zoo. Important are also different routings: a nice-weather route that guides people along the outdoor enclosure and a bad-weather route that guides people along the indoor enclosures. The surrounding facilities as mentioned above can be connected with to the different routes.

Landscape architects can play an important role in designing zoos. Actually, zoos are gardens with animals in it. Gardens and landscape parks are the domain of landscape architects because they have the knowledge about materials and planting and because they can work with different layers. Landscape architects also can analyse and read the landscape and see opportunities for the zoo in the landscape. Landscape architects can also function as translator for the wishes of the zoo and the possibilities of the landscape and the presentation to the surroundings. Landscape

architects are multifunctional and can take part at different stages of the zoo design. They only lack the scientific knowledge of buildings (although we can integrate them in the landscape properly) and the needs of the animals.

#### The new Dierenpark Emmen

By analysing the landscape of Emmen with the different layers and driving forces of the model in mind, a basic structure was developed. Especially the network layer plays an important role in the larger scale of the municipality of Emmen and in the smaller internal scale of the zoo.

The biotope zoo concept was chosen to integrate in the landscape of Emmen. The reason for choosing the biotope concept is that Emmen became famous for the continent structure. A future concept of the continent structure is the biotope concept and therefore this model is chosen to continue the basic continent idea of Dierenpark Emmen in a new form. Because the new zoo is located on the edge of the city, the zoo will contain an urban edge and a rural edge. The zoo functions as a transition in the landscape between city and rural. The main structure is formed by a green framework that connects the centre of the city to the new location of the zoo. This green framework is a low dynamic and strong structure that can be used in different ways. In this case, the green structure creates spaces for the five continents of the zoo.

The role of the landscape architect can

be very diverse. Plans can be made on the larger scale, such as the structure plans for Emmen, and on smaller scales, such as the detailed plan of the biotope of Central Africa.

N.B. At the moment of writing this article, the design was still under construction and the thesis is not completely finished. Therefore the design is not explained in detail.

#### Sources

- Baratay, E. & Hardouin-Fugier, E. (2002) *A History of Zoological Gardens in the West*, London: Reaktion Books.
- Hancocks, D. (2001) *A Different Nature: the Paradoxical World of Zoos and their Uncertain Future*, Berkeley: University of California Press.
- Turley, S.K. (2001) "Children and the demand for recreational experiences: the case of zoos", *Leisure Studies*, 20, pp. 1-18. Available from: <http://www.informaworld.com>.
- Turley, S.K. (1999) "Exploring the future of the traditional UK zoo", *Journal of Vacation Marketing*, 5 (4), pp. 340-355. Available from: <http://jvm.sagepub.com>
- Information and support
- Stichting NH Bos
  - Danny de Man (EAZA)
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