THE ENVIRONMENTAL ZOO

Lisa Hirmer
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"I used to love that ironic grass in Paraguay, pushing its nose up between the cobblestones of the capital to see, on behalf of the invisible yet always present virgin forest, whether men still hold the city, whether perhaps the hour has come to shove all these stones aside."

- Antoine de Saint-ExupéryWind, *Sand and Stars* (1939)

INTRODUCTION: RECONSIDERING THE ZOO

The Central Glass International Architecture Competition for an Environmental Zoo was a call to reconsider the idea of a zoo. Instead of a place "*for the collection and display of the kinds of animals that exist on our planet*"[1] the competition asked for proposals that would reconsider the relationship between animals and humans in zoos.

a) Like Noah, today's conservation zoos collect animals in order to preserve threatened species.

In some ways the contemporary zoo has already come a long way from the zoos and animal collections of the past: no longer existing solely for the entertainment and curiosity of its human visitors, many zoos see themselves as performing a very important function for our ecologically troubled world. Like Noah, who collected a token pair from every type of animal so that they would survive the impending flood, the primary mission of many zoos is now one of conservation.

At the same time, the zoo still remains essentially as a collection of fragments from a natural world that exists somewhere outside the zoo. This concept, which is also the basis of even the earliest animal collections, does little to change humanity's troubled relationship to nature and so this project is an attempt to re-imagine the theoretical framework behind the zoo with the hope that the human-nature relationship can be changed.

FROM ANIMAL COLLECTIONS TO CONSERVATION ZOOS

b) The treatment of animals in zoos has come a long way: today zoos are deeply concerned with the wellbeing of the animals in their care.

By the standards of a contemporary conservation zoo, the royal animal collections and travelling menageries from which those zoos evolved would seem rather cruel. Indeed, significant developments in the conception of the zoo have meant that the focus on the human visitor and subsequent disregard for the captive animals have mostly – although unfortunately not always – been replaced with a deeply embedded concern for the animals' wellbeing. This has been accompanied by preservation, conservation, research and educational initiatives in zoos that aim to benefit not only the animals in the zoo's charge but also threatened wildlife and their habitats[2].

While this is certainly an important and commendable achievement from both ethical and conservational points of view, at a fundamental conceptual level the zoo is really still quite similar to even the earliest collections of wild animals: this is to say that today's zoo, in spite of the significant developments, remains conceptually a 'collection'. Like the earliest collections of wild animals, the zoo is still essentially created by an act of abstraction, by removing (whether quite literally or, as is now more often the case with zoo born animals, merely conceptually) a fragment from the tangled confusion of the world outside the zoo and presenting it, more or less, in isolation.

c) Wild animals being put on a ship in ancient times.

The practice of collecting animals seems to be almost as old as civilization itself and to span nearly every developed civilization including that of the Egyptians, Chinese, Romans and Aztecs[3]. The first recorded account of an animal collection, a stone tablet from the Sumerian City of Ur, is dated from around 2300 BC[4]. These collections of animals, which were taken from the wild and brought

d) Most ancient cultures, including the Romans, had collections of wild animals.

into the city, began as demonstrations of a ruler's wealth and power "over the brute of creation"[5]. Of course, the enclosures were usually designed almost exclusively for the pleasure and comfort of the owners and showed very little concern or understanding for the needs of the animals. This is not to say that all animal collectors from the ancient world were indifferent to the wellbeing of their charges - Alexander the Great, for example, was said to have been very careful with his extensive collection of animals[6] - however, humanity did have a very different view of the natural world that reveals itself in this idea of collecting animals. Even more significant than the treatment of the animals in the collections was the very act of collecting itself. This act of abstraction – which by definition is "the act of withdrawing or removing something"[7] – reveals the state of the relationship between humanity and the natural world around it. In his essay *Abstraction and Empathy* Wilhem Worringer explains that the psychic presupposition to the urge to abstraction is an insecurity or even fear of a confusing and seemingly arbitrary world. He explains:

> *'Tormented by the entangled inter-relationship and flux of phenomena of the outer world, such peoples were dominated by an immense need for tranquility. The happiness they sought from art did not consist in the possibility of projecting themselves into the things of the outer world, of enjoying themselves in them, but in the possibility of taking the individual thing of the external world out of its arbitrariness and seeming fortuitousness, of eternalizing it by approximation to abstract forms and, in this manner, of finding a point of tranquility and a refuge from appearances. Their most powerful urge was, so to speak, to wrest the object of the external world out of its natural context, out of the unending flux of being, to purify it of all its dependence upon*

life, i.e. of everything about it that was arbitrary, to render it necessary and irrefragable, to approximate it to its absolute value." [8]

He is referring here specifically to the creation of art but in the case of the animal collection the urge, which is quite literally to remove an object from the world to assert the position of humanity, is clearly informed by the same feelings about that world.

e) The menagerie at Versailles

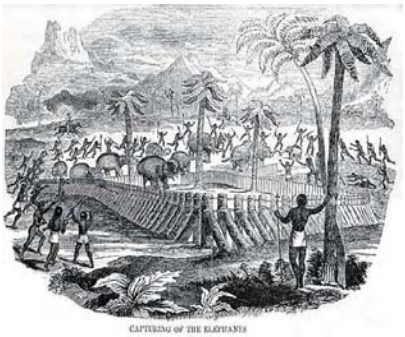
After the fall of the Roman Empire, the popularity of the animal collection declined briefly during the Middle Ages. It re-emerged however with great popularity during the Renaissance as a pursuit of Kings and Emperors[9]. Seen as creatures of beauty and nobility, the animals in these collections were prized for their symbolic value and were often displayed on family crests and emblems[10]. The housing was designed with only the most minimal consideration for the physical needs of the animals and with no consideration of their psychological requirements. Instead, it was often designed to reflect the animals' legendary history or country of origin. An Ostrich House in Cologne, for example, was built to resemble a mosque while the fox and jackal house was a brick building in the Gothic style, complete with towers[11].

f) A travelling menagerie

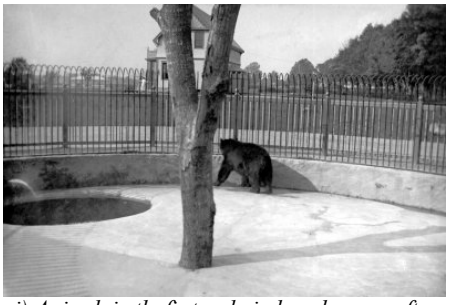
During the Eighteenth Century, the interest in captive animals spread beyond nobility as the rest of society became more curious about the natural world. New public menageries of wild animals emerged as money making enterprises. Collections of wild animals were often included in travelling shows which offered to show 'curiosities' to those willing to pay the price of admission. The purpose of these displays was to amuse and amaze the visitors and the animals were often kept in highly unsuitable enclosures[12].

The growth of cities and the increased ease of travel during the Nineteenth Century led to the development of the permanent zoological garden: the denser populations created a steady audience

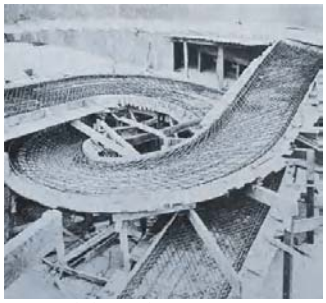
g) An early zoological garden



h) Capturing wild elephants



i) Animals in the first zoological gardens were often kept in highly unsuitable enclosures.



j) A penguin exhibit under construction: an attempt at better conditions but totally unsuited to the way penguins live.

which allowed the travelling shows to settle down, while improvements in travel created a greater availability of animals for the displays[13]. An increased public interest in science and the study of nature also triggered a shift in the intentions of these new Zoological Gardens. They were no longer only for amazement and entertainment, but were now also places that promoted scientific study and research[14].

This was an age of heroic domination over the natural world aided by the new findings science and technology[15]. The supply of animals seemed endless and the concern for the animals in the exhibits was rather minimal; after all if one animal died it could easily be replaced with another freshly obtained from the wild. The animals therefore lived uncomfortable, unnatural and monotonous lives. They were displayed to the advantage and comfort of the visitors, often in bare cages with heavy iron bars, or in empty pits dug into the ground[16].

However, as the Twentieth Century came around, humanity's relationship to nature was changing dramatically. As wild nature began to disappear it became increasingly more valued[17]. The supply of animals from the wild no longer seemed so endless and the wellbeing of the animals in the zoo suddenly became more important since they were no longer easy to replace. Zoos became concerned about the amount of sunlight and fresh air animals were receiving in their enclosures[18]. New zoo designs broke away from the renaissance pavilion in favour of simpler, more functional designs. Many zoo architects developed exhibits that used simple functional forms made from reinforced concrete[19]. While beautiful and an improvement over the previous type of enclosures, these were often still unfitting for the types of animals they were meant to display.

k) Hagenbeck style exhibits

Slowly zoo operators began to realize that the animals needed surroundings which mimicked their natural habitats. The first attempt at more naturalistic exhibits was built by a German collector, Carl Hagenbeck, who wished to exhibit animals "*not as captives, confined to narrow spaces and looked at between bars, but as free to wander from place to place within as large limits as possible and with no bars to obstruct the view and serve as a reminder of captivity.*"[20] Instead of containing and separating the animals with bars, the Hagenbeck Tierpark, which was opened in 1907, used landscape devices like hidden moats and clumps of vegetation to keep animals from each other and the visitors. These panoramic exhibits were extremely popular and quickly influenced zoos all over the world to follow suit[21].

This was a major development that changed the public opinion regarding how animals should be kept in captivity. As a result, zoos began trying to understand the psychological and social needs of their animals. They started comprehensive research studies that would help them better meet these needs along with the physical requirements of the animals in their care. During the second half of the twentieth century, as field biologists began to learn more about animal behaviour, zoos also adopted very strong educational mandates that attempted to educate the public about the animals they had come to see[22].

l) Immersion exhibits mimic the animals natural environment

To meet this initiative the idea of the 'landscape immersion exhibit' was developed during the seventies by two landscape architects, Jon Coe and Grant Jones, with the design of the gorilla habitat at the Woodland Park Zoo in Seattle. Their concept put animals in naturalistic environments with rockwork, vegetation, and sometimes even other animals. They also used illusions and tricks of design to make the visitor feel as though they were also part of that environment. The hope was that if a person had experience the animal's habitat for themselves, they would understand that animal

on a more visceral level and thereby develop a concern for its wellbeing and survival[23].

m) Many zoos have wildlife and habitat conservation initiatives

By the nineteen-nineties the priorities of many zoos had reversed: their primary missions, of conservation, education and research, now come before recreation. Not only are they successfully breeding endangered animals at the zoos, they are also reaching out to protect threatened animals and their habitats in the wild[24].

CREATING A NEW PLACE

n) Zoos preserve endangered species, but are still conceptually similar to the first animals collections.

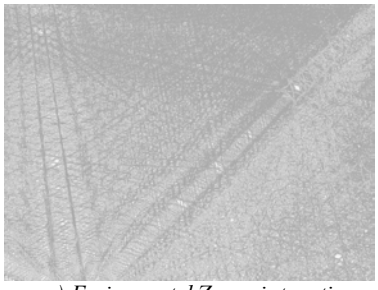
The intentions of the contemporary conservation zoo and its landscape exhibits are certainly worthwhile. At a time when entire species are disappearing from nature, it would seem that zoos are in fact necessary both to mitigate the damage humanity is causing the natural world and, when the destruction can not be stopped, to preserve a glimpse of a natural world that once was. Like Noah with his Ark, the zoo is a vessel that sustains the hope that the nature which is being destroyed can one day be restored.

While these are valuable and perhaps even necessary pursuits, they seem to only cushion the troubled relationship between humanity and nature, rather then moving towards changing it. The zoo, in spite of greatly improved care for the animals and well intentioned educational programs, is still based on the same conceptual model as the earliest collections of animals. The developments have, in a sense, been only superficial. This project then is an attempt to develop an alternative concept for a 'zoo', one that looks to re-evaluate the fundamental notions of the zoo itself.

o) Landscape immersion exhibits are popular, but critics say they aren't as enlightening as they are meant to be.

The contemporary zoo is still based essentially on an act of abstraction. It is a collection of fragments from a world outside the zoo presented more or less in isolation. Even when two or more species are kept in the same enclosure, it is still a greatly simplified network of relationships when compared to the complexity of an ecosystem in the wild. The landscape immersion exhibit, while mimicking the natural habitat of the animal, is always pointing back to another "real" place somewhere else. With its painted rockwork, fibreglass tree trunks and jungle soundtracks, the immersion exhibit lingers almost disturbingly close to the realm of the theme park and risks reducing the animals on display to nothing more than an entertaining spectacle. Perhaps this illusion is all that is necessary to accomplish the intended

p) Immersion exhibits under construction



q) Environmental Zoo project parti

purposes of nurturing the animals' wellbeing and triggering an empathetic response from the visitor, but many critics claim that most visitors only spend a short moment at each exhibit, seeking "entertainment not enlightenment"[25]. It seem that when the veil of suspended disbelief is lifted even these exhibits continue to reinforce a relationship to the natural world that is based on fear and aversion.

It seems impossible for this type of exhibit to escape from its status as a replication of another place or another time: it is a relic which as a place itself is completely static and in a way dead. This project then is an attempt to create a zoo which is a place in itself, a new place that is vital and dynamic and which will hopefully therefore provide a more genuine experience for the visitor.

Instead of displaying abstracted fragments from a nature that is someplace else, the environmental zoo will be a display of living nature that is present there at the zoo. The thing on exhibit will be the zoo itself which will be formed out of the stuff, or fabric, of the natural world. Rather than the series of clearly identifiable animal-objects that is on display at the traditional zoo, it will be a display of one complex tangled whole. In essence, it will not be an abstraction of nature but will simply be nature presented to the visitor as it is and as it wants to be.

FROM ANIMAL-OBJECTS TO A NATURE-WHOLE

Presenting in particular the animals of nature in abstraction is, of course, a defining characteristic of the zoo. Yet, when considering the vast complexity of a naturally occurring ecosystem - with such a variety of vegetation, funguses, insects, and organisms at a variety of scales from the animals we see to the micro-organisms we can not – it is clear that the traditional zoo chooses a very particular piece of the natural world to display. The exhibition of animals is so appealing to us because animals are mediators in our relationship to the natural world. As Kate Soper explains, we tend to view animals as "a mirror of humanity, to project our features on to them, or to regard their features as symbolic or representative or our own"[26]. In short, we see ourselves in animals, and see them in us.

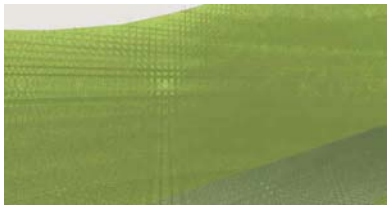
r) We have a tendency to humanize animals

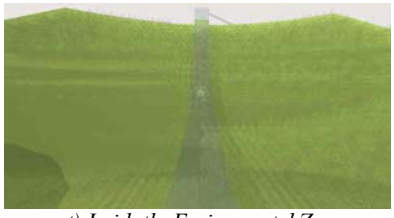
Kate Soper speculates that this type of "*positive anthropomorphism*" or humanization of nature, gives humanity some relief from the rigours of being an autonomous human in a moral universe[27]. Donna Haraway seems to agree when she speculates that the motivation behind experiments that attempt to teach apes human language is an effort to open up the divide between nature and culture, essentially to try to answer the question: "*what would it be like not to be barred from nature?*". She goes on to explain that these encounters with nature are a sort of relief for a "*deep cultural anxiety sharpened by the real possibility in the late twentieth century of Western people's destruction of the earth*"[28].

While the exercise of questioning the nature/culture divide is a worthy one, and while speculating on a return to nature may truly be a relief from the anxieties of living in the current world, it seems that to overly humanize nature is to deny that the natural world is very different from human order. Kate Soper suggests that we, as humans, should not be insensitive to the ways in which nature is

different from us and we should rather respect those differences[29]. To give up our humanity and to re-enter nature would not only be impossible but it would also be denying the responsibilities we have adopted as humans. She gives the example that no one would morally blame an elm beetle for the destruction of a forest and yet many of us often feel guilt over our use of the earth's resources. In this regard, the zoo is an exercise in humanizing nature where animals are brought into the human order. The visitor is meant to identify with and humanize the animals which, in a way, is a denial of that animal's otherness.

s) Plan for the Environmental Zoo





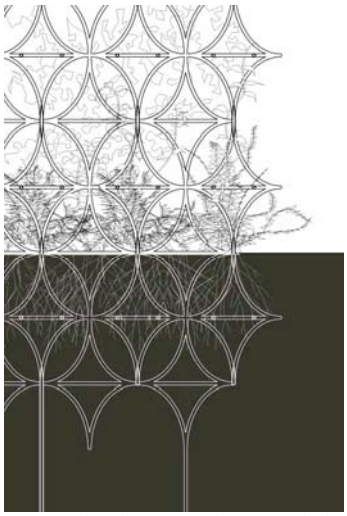
t) Inside the Environmental Zoo

In contrast to the traditional zoo experience, with this proposal for an environmental zoo, the visitors will travel into the object of display. They will climb along the edge of the zoo, seeing its tangled complexity up close. Then as they descended into the 'bowl', the zoo will surround them, almost engulfing them. It is meant to be over-whelming and is purposely almost uncomfortable. The chaos of the disorderedly nature will only be made more apparent as it is measured against the nearly swallowed up grid. Different species will tangle together in their struggle against each other, attracting various plants and foliage, insects, moulds and funguses, birds and other small animals: the 'stuff' that makes up nature. The zoo will be volatile and constantly shifting, so that its exact form will be always unpredictable; a visitor will never see the same zoo twice. Upon climbing up out of the bowl and walking away from the environmental zoo, the visitor will be left with an experience of the chaotic vitality of the natural world and unlike the comfort that comes from humanizing nature, have a sense of nature's total indifference.

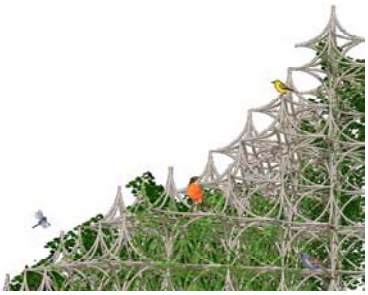
The question then - of what benefit an overwhelming and perhaps even uncomfortable experience could have - of course arises. After all, the immersion exhibit is meant to trigger a visceral empathy in the visitor that will then lead to a concern for the wellbeing and

survival of animals in wild. This experience is meant to be meaningful, in almost a similar way, by demonstrating the necessity for very wild places in our world and thereby invoking a desire to protect, or perhaps even create, such places. The experience will act in a manner almost similar to that of a Greek tragedy: giving power over to another order and descending into the chaos of that order will not only re-energize human order through the mechanism of contrast, but it will also provide the opportunity to reconsider the balance between human order and that of nature[30]. In a way it is also similar to the popular understanding of the wilderness camping experience. Although not necessarily a comfortable experience, one returns, not with a distain for the wilderness but rather an appreciation for it.

CREATING THE ENVIRONMENTAL ZOO



u) Section detail: nature taking over the built structure



v) Detail: A tangle of species and of natural and artificial

w) Nature absorbs the artificial until it becomes natural too.

The zoo will be simply constructed from two three-dimensional meshes that will interlock to create a porous sponge-like form. This form will then be abandoned and left to allow the process of natural progression to take it over. If necessary, due to time constraints, the process could even be expedited by first grafting it with some initial vegetation or insect life and then abandoned to the processes of nature. The important thing is, whatever the initial state of the zoo, is that it is left to develop on its own without human intervention so that a clearly non-human order is established. For this to occur human control has to, at least initially, be abandoned. It may be unrealistic to imagine that the environmental zoo will always exist with absolutely no intervention; it is after all intended to be a site visited by people. However, once an order other than that of the human built is established - an order that is driven by its own tangled confusion of multiple indifferent logics - then the addition of some minimal human intervention will not undermine its integrity. The important thing will be that the level of human intervention will always remain a critical question so that it does not overwhelm the autonomy of the zoo as a living, almost wild, place. Perhaps, in this way the zoo may even teach some lessons about how to interact with existing places of wild nature.

As the zoo structure is absorbed by nature, the artificial will begin to become natural and the distinctions between artificial and nature will become blurred. This situation, which often happens accidentally already, will raise questions about the definitions of what is natural and what is artificial. For example, the Rock Mountain Arsenal National Wildlife Refuge, in Colorado near Denver, has often been called "[America's] *most ironic nature park*"[31]. Initially a chemical weapons factory and later the site of commercial fertilizer production, the site had been contaminated by toxic chemicals seeping into the

ground. As one of the most polluted sites in the nation it was then abandoned for decades until a team of scientists investigating the extent of the contamination was surprised to find a thriving wildlife population living there. Nature, having been given the chance, had taken over the site and claimed it as its own and it is now designated to become a nationally protected wildlife refuge.

x) Wildlife at the Leslie Street Spit

A similar example closer to home is Toronto's Leslie Street Spit. Created as the result of dumping clean fill into Lake Ontario, the site is totally artificial in origin and yet nature has creped into the site, absorbing the city's refuse as it grows. Many parts of it now read as a place of nature and it is a home to an impressive variety of birds and other wildlife.

y) Different definitions of nature

These types of places, where the distinction between artificial and natural has been confused, raise questions about how we understand nature and natural places. While speculating similar questions Michael Pollan argues that once a landscape is no longer considered "virgin", it is often written off and abandoned to human development and yet this idea of a prior existing wilderness is unrealistic since nature is constantly changing and shifting. Rather he says, since intervention with the natural world is inevitable, we should look for ways of intervention that also leave room for other orders to exist at the same time as ours[32].

The very artificiality of the zoo then will grant it certain freedoms that a more traditional conservation oriented zoo does not have. Those zoos have charged themselves with a very important responsibility to its animals and this responsibility demands specific responses. Since the wellbeing and survival of each individual creature is understandably so important, a high level of control over the animals' habitat and daily life is necessary. An animal in such a zoo could not live in anything like a naturally acting ecosystem and with good reason; their specific protection and safety is just too important to give up enough control

and influence to let that happen. Therefore the animals have to be divided into carefully monitored and controlled enclosures.

Yet, this is not at all how things operate in the natural world. Nature is complicated, chaotic, indifferent and at times even cruel and this is not ever really evident in a traditional zoo's displays. However, with this proposal for an environmental zoo the artificiality of the place will grant it certain freedoms since it will not come with the same responsibilities as a piece of 'existing' wilderness. This means that the environmental zoo can be less controlled. The different species at the zoo can struggle against each other and at times some will even decline or die; but this will only provide the opportunity for other species to thrive. Because there will be no fear of contamination, the environmental zoo will also be open to the arrival of new species, whether through natural processes or by way of the visitors themselves. It will be constantly in a state of volatile change and act, in essence, as though wild.

CONCLUSION: THE ENVIRONMENTAL ZOO AS STRATEGY

In truth, the thing on display will be the vitality and resilience of nature as a whole. The built form will really only act the way sutures act on an injured body: they will provide the thin framework that allows the system to heal and rebuild itself into that space. The structure essentially creates the potential space that gives nature the room to grow into something substantial. As an approach this could take other forms beyond that of the environmental zoo. While sometimes nature is provided the space to grow by toxicity, inattention or political strife, amongst other reasons, this project would like to suggest that we can knowingly created that void ourselves whether quite literally, as in the case of this project, with a physical mesh form or as a more conceptual scaffolding.

This is not to suggest that existing wildlife or nature should not be protected and conserved, nor is it to suggest that contemporary conservation zoos are unnecessary or misguided. Rather it would like to suggest that perhaps we have come to a time when it is necessary to rebuild nature ourselves and that by abandoning the clear distinctions between natural and artificial we may be more able to give nature the space it needs to re-establish itself as its own order, separate from that of the human.

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