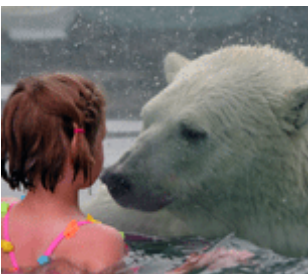


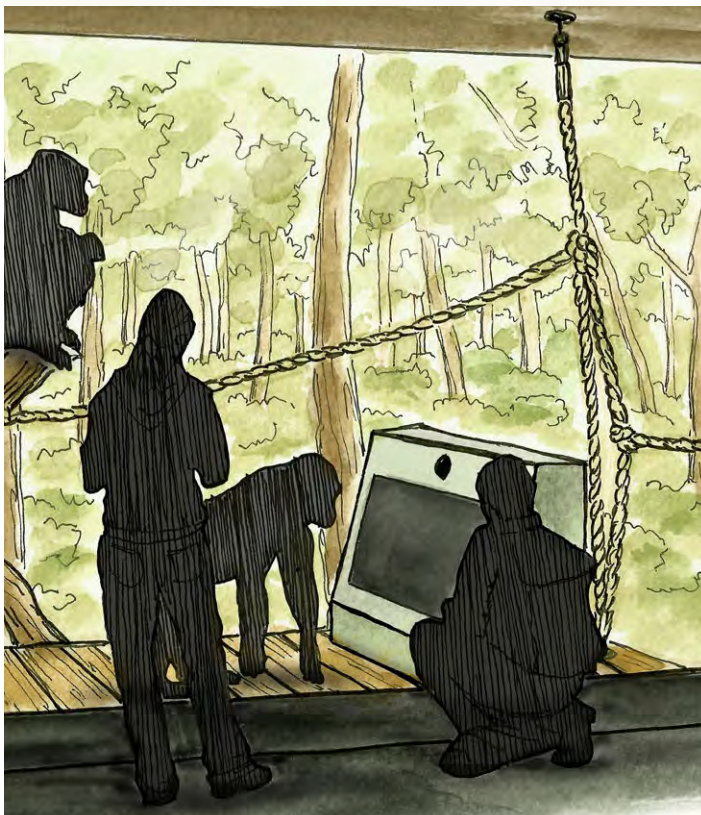
Ursa International • GETTING CLOSE TO WILDLIFE





PROJECT BRIEFS

*U*rsa International has been fortunate to be involved with many wonderful projects since 1994. During that time we have improved the conditions for captive species in zoos to thrive in a home that has well being at it's core.



Bonobo Conservation and Research Center, Georgia

Sahara Retail Complex	Murouj Farm	2020
Save the Chimps	Arboreality Project	2020
Zoo Atlanta	Savanna Expansion	2019
Oklahoma City Zoo	Master Plan and Projects	2017
Ape Cognition Initiative	Bonobo Research Center	2016
North Carolina Zoo	Polar Bear Expansion	2015
Oklahoma City Zoo	Picnic Grove/Great Lawn	2015
Columbus State	Cougar on Campus	2014
Chimp Haven	Planning/Development	2004/14
Zoo Atlanta	Carnivore/Trader's Alley	2010/11
Rwanda	Karisoke Center	2010
Mississippi River Museum	Campus Plaza	2009
Riverbanks Zoo	African Leopard	2009
Zoo Atlanta	Boundless Budgies	2009
Zoo Ljubljana	Master Plan	2008
Boston's Stone Zoo	Black Bear	2008
Madagascar Palace	Master Plan	2007
Blue Hills Reservation	Master Plan	2007
Cape May County Zoo	Master Plan	2006
Brandywine Zoo	Master Plan	2006
Boston's Franklin Park	Tropical Forest/Gorilla	2006
Cherokee Tribe	White Oak Flats	2006
Roger Williams Zoo	Polar Bear Area Plan	2005
Rwanda	Museum Design	2005
Cochrane	Polar Bear Sanctuary	2004
Zoo Atlanta	KidZone Planning	2004
Zoo Atlanta	Base Camp Discovery	2003
Atlanta	Brook Run Park	2003
Boston Stone Zoo	Sierra Madre	2003
Rome Bioparco	Master Plan	2000
Rome Bioparco	Brown Bear	1999
Dallas Zoo	Asian Tiger /Primate	1997
North Carolina Zoo	Chimp Renovation	1997
Woodland Park	Northern Trail	1995
Seneca Park Zoo	Rocky Coast Polar Bear	1994
Birmingham Zoo	Ecoplex Concept	1994
Brookfield Zoo	Habitat Africa	1993
Denver Zoo	Primate Panorama	1994
Zoo Atlanta	Masai Mara	1989
Zoo Atlanta	Gorillas of Cameroon	1988

Ursa International Project Brief



Murouj Farm, Kuwait City, Kuwait Petting Farm and Children's Adventure Park, 2020

Cost: Preliminary Planning Only
Client: Al Jazeera Real Estate Development
Contact: Sainath. General Manager
+965 22203404

Ursa was asked by the Al Jazeera Real Estate Development Company to assist them with a Domestic Farm for the children's area of their luxury shopping/eating and Nightlife destination in Kuwait City. They had a plan for it to be inside an existing Horse Barn and were uncertain about how to make it all happen. On my review of their concept for Pony rides, Camels, petting farm animals as well as Kangaroo, Llama, Deer, ground birds and Ostrich, I suggested that a site visit was in order. They were kind enough to agree and I soon found myself (after two very long flights) in Kuwait City at the very high end Sahara Country Club guest accommodations in the middle of the night. My three day site visit was eye opening to say the least. We reviewed their site, met with one of the owners, got to travel to his thoroughbred horse farm and to a family farm attraction to get an understanding of competition. We also enjoyed meals at one of their high end restaurants as well as a lunch at an extreme indoor mall.

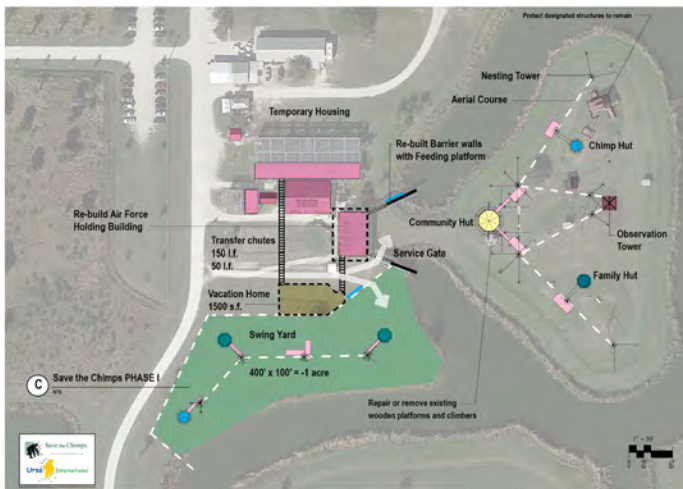
The resulting plan took the petting zoo experience outdoors into a new Petting Paddock so that the children can meet the animals outdoors instead of behind a stable gate. The paddock fences are lined with shade trees and 'artificial' palms and climbers inside the paddocks as well as the Silo, give shade for the visitors and animals.

This is a true "Red Barn" farm experience without the hot and smelly indoor atmosphere. There will be two ride experiences (for Camel and for Pony), plus the petting area as pay experiences within an overall free walk-through. There is an indoor Birthday Party Room in the barn and a behind the scenes visit to the animals if requested, but the barn is essentially a work environment and a shelter for night and extreme weather conditions.

These are preliminary in nature and have been presented to the Owners and directors for their review. There is much to do once it gets approved for design and construction but due to Covid-19, we wait for final design and construction.



Ursa International Project Brief



Save the Chimps, Ft. Pierce, Florida Chimp Sanctuary Arboreality Project 2020

Cost: Preliminary Planning Only
Client: Save the Chimps, Inc.
Contact: Shelly Lacky, Director
Dr. Andrew Hallaran, Director of Care
(678) 897-9448

Ursa was asked to assist Save the Chimps - one of the largest Chimpanzee Sanctuaries in the US. Their facilities sits on about 150 acres and consists of 12, 3-6 acre islands with large moats around each except for individual holding buildings at one edge and used as a management building and shelter during emergency conditions. The landforms on each island consists of an undulating grassy meadow with limited vegetation and wooden climbing decks and shelters. Each island is home to up to 20 individuals and multi-male groups.

The point of the study was to find ways that the Chimps can live an Arboreal lifestyle that maximizes the areas available to the chimps, that offers variety and challenges as well as choice and stimulation to their daily routines. We also wanted to give them a variety of shelters to get out of the extreme heat of the day as well as rain protection on the habitat as opposed to having to come into the management building.

The plan created a series of individual elements that can be assembled on each island based on the various land forms and shapes. They consist of:

- Community Huts
- Family Huts
- Chimp Huts
- Observation Towers
- Aerial Courses with Nesting towers
- Renovations to the existing Holding Buildings
- New Barrier walls with feeding platforms and service gates
- Transfer chutes to auxiliary prima domes or 'swing yards'

These concepts are preliminary in nature and have been presented to the board of directors for their review. There is much to do once it gets approved for design and construction (though the concept was enthusiastically received), but due to Covid-19, priorities have shifted and this project will need to wait for funding.





Cost: \$20 M Elephant Savanna
\$25M for Cyclorama
\$5M for Grand Plaza

Client: Epstein Group, Architects prime
Atlanta-Fulton Co. Inc. Owner

Contact: Tim Fidler, V.P. Facilities
Raymond King, CEO



Ursa International and The Epstein Group was asked to create a concept for the adaptive re-use of the Historic Cyclorama which for the past 80 years sat at the entry to the zoo and was operated by the City of Atlanta as a Civil War Museum. The great painting, diorama and exhibits (including a full size locomotive) were moved to the Atlanta History Center. Our Plan is to demolish the old Administration building to create an expansive Zoo Plaza, put the zoo's offices on the first two floors of the Cyclorama and transform the upper floors into a two story event space with a view into the new expanded Masai Mara Savanna Exhibit on three additional acres that the City transferred to the Zoo in this transformative project, the Zoo is calling, The Grand New View.

There are many moving parts and pieces to this project including a new park path to bring people from the upper parking areas, renovations to the Zoo's entry and ticketing process, expansion of the Gift Shop and the Administrative and Event Venue in the Cyclorama. In the Zoo, the old Elephant is being refitted for White Rhino, the Giraffe/Zebra Savanna exhibit has been updated, flattened and has expanded feeding opportunities, a new Meerkat and warthog exhibit and the new Elephant Savanna occupy the old rhino area as well as the additional three acres. The new Elephant Barn will house up to 7 Elephants (currently 3) including a Bull to give Zoo Atlanta the opportunity to contribute to the African Elephant SSP and provide guests with a realistic experience of Elephant behavior and the African Savanna.

The Concept Plan was approved in July of 2014 and the Elephant/Giraffe area was soft opened in August 2019, while work continues on the Cyclorama and entry plaza. The Zoo Elephant staff couldn't be happier working in this amazing new facility.

Master Plan 2017



Cost: \$71M Master Plan/10yr.
Client: Zoo Friends of OKC
Oklahoma City Zoo
Contact: Dr. Dwight Lawson, CEO
(405) 425-0230

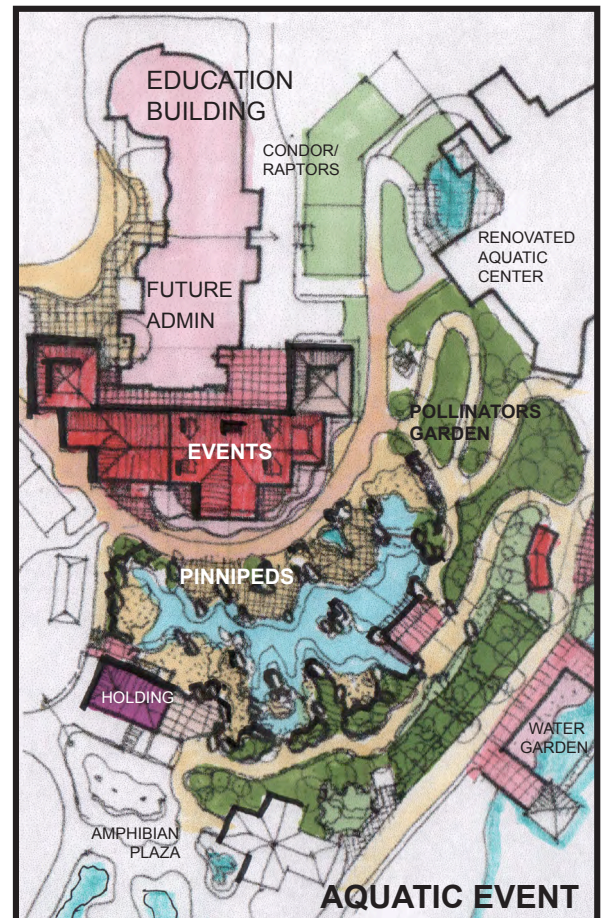


Ursa International was asked to create a Concept Master Plan in conjunction with a Business Plan undertaken by Schultz Williams. We had the chance to comprehensively review the entire +120 acre site

We developed concept plans for many new projects recently approved by the Trust. The highest priorities, as agreed upon by several focus groups was a major exhibit sequence from the entry gate occupying 18 acres, a new Africa habitat renovating existing historic buildings, and new construction, a train, feedings, & behind the scenes tours. a major conservation area “The Preserve”. In addition, a new large Event Space is envisioned that overlooks a new Seal/Sealion habitat which overlooks the Zoo lake. A Farm area is proposed to care for domestic breeds and with agricultural themes, demonstrations, petting, and pony rides. Many other smaller projects include Adventure Islands aerial trail system, new Condor flight cage and Galapagos Tortoise habitats as well as an Amphibian garden are planned as infill to major projects. The zoo had us look at a “project of opportunity” across the lake on city parklands. We proposed a major nature park with camping, “glamping” and zip-lines and trails for groups of all kinds. The Zoo is currently in discussion with a “Girl’s” organization to build their camp on the site.

In addition to the strong Zoological exhibits, several Botanical Gardens are proposed to build on the zoo's desire for a more beautiful campus. We consulted with Tres Fromme to integrate the garden spaces within the zoo, including Pollinator Gardens, Formal Water Gardens, Kopje succulents garden as well as plaza and terraces on this lake side site.

The 10 year/\$71M Master/Business Plan was approved in October 2017 and we have begun working on The Condor Mesh Structure over existing WPZ grottos, a new Galapagos Tortoise habitats in the Children's Zoo and new climbing structures in the existing. Orang Habitats as early action projects before Africa begins.



Ursa International Project Brief

Oklahoma City Zoo, Oklahoma City, OK Picnic Grove and Great Lawn Concept Plan, 2015

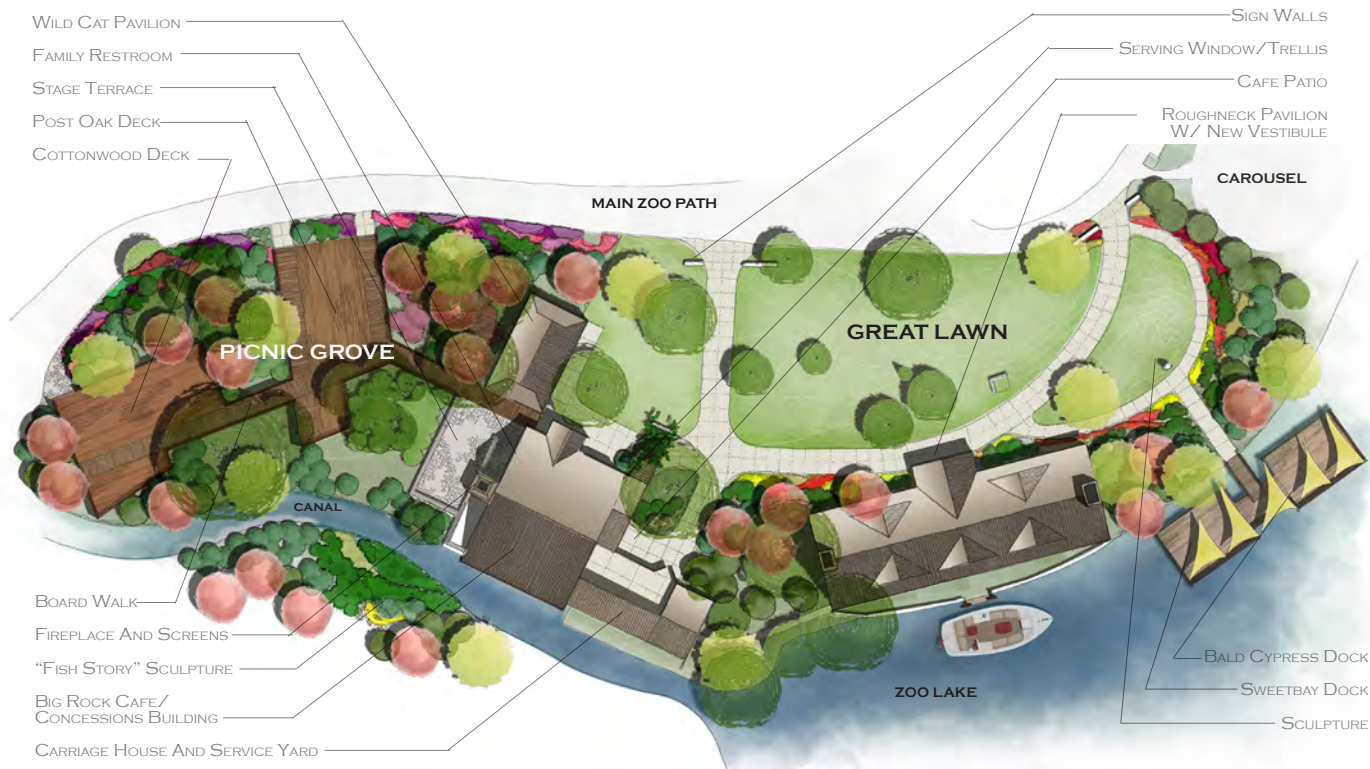


Cost: \$3.5M complete
Client: Oklahoma City Zoo Friends, Oklahoma City, OK
Contact: Dr. Dwight Lawson, CEO

Ursa International and Tres Fromme, a Botanical Garden Designer from Atlanta were invited to develop a concept plan for parts of the Oklahoma City Zoo. The original zoo area has many areas that need upgrading including their very important Picnic Area. While it functions for large corporate events and groups, it is loved to death and needs a facelift.

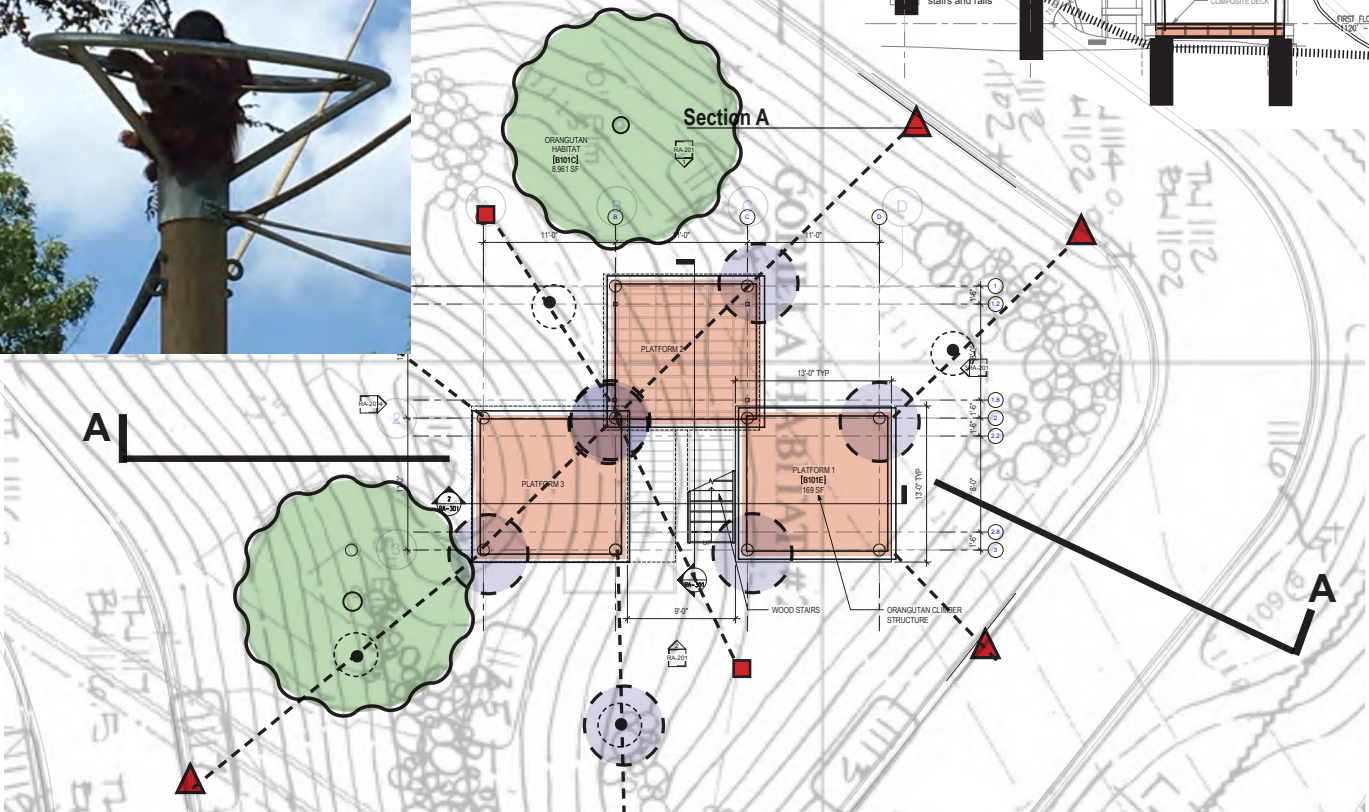
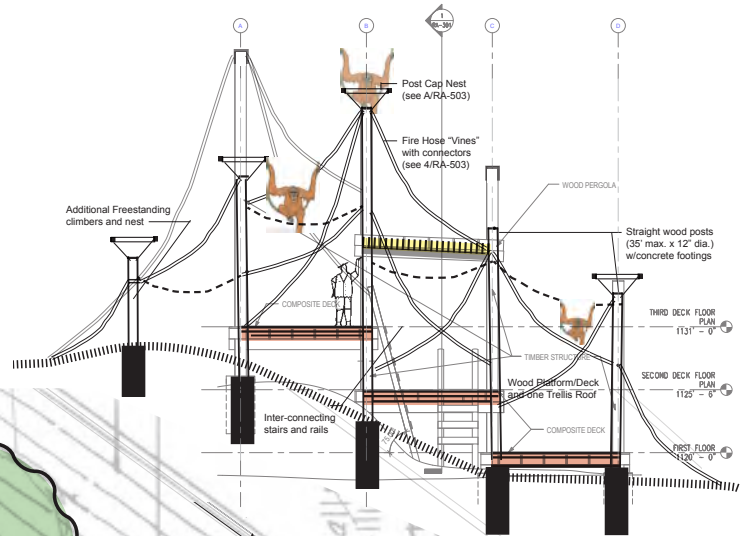
The design of the Picnic area is divided into two major areas; Picnic Grove and Great Lawn. The Picnic Grove is covered with a stand of Live Oak trees and compacted soils. Our solution developed two large interconnected deck structures that provide seating for hundreds of guests in the shade of the wonderful Oaks. The Great Lawn is a sunny, under-utilized location behind an old Concessions building. By replacing the Lunch Cafe into the existing Concessions buildings in the center of the site, we can remove the old Cafe, open up the lawn area as a flexible seating area in front of two large open historic pavilions that can ground the Great Lawn and provide a major hub for special events programming. The Concessions building make over will allow for new family Restroom facilities, Cafe serving and production kitchen, Service yard and storage areas as well as maintaining a catering Kitchen for the Pavilions.

Overall, the project will accommodate the largest groups (3000 people) to the individual guests either bringing their own food and purchasing food and beverages from the Big Rock Cafe. All this in a new Garden setting that will offer another new venue for Weddings and other special events on the edge of the zoo's lake. Nevin and Tres developed the concept plan for this area, cost estimates and 3D renderings for fundraising purposes. The project is currently being integrated into the new Events Center (old Pachyderm building) project under development and will soon provide the zoo with an outdoor venue for a relaxing meal or parties at the Zoo.





Ursa was invited to prepare documents to build a new climbing structure for their Orangutan Habitat. Complicated attempts were made by others to satisfy the program; to let the Orangs Climb, which cost upwards to \$7-figures. Our approach was to create a wood frame work of platforms and high posts with interconnected ladders and "crows nest" perches on some post tops. Donated firehose was used to connect all the posts down to the platforms and ground level access, for the Orangs to utilize the entire area arborially. The platforms double for shade structures and hides as well as a safe place for keepers to enrich the structure on a daily basis. Ursa International has been working on several planning and design projects at Oklahoma since 2015.



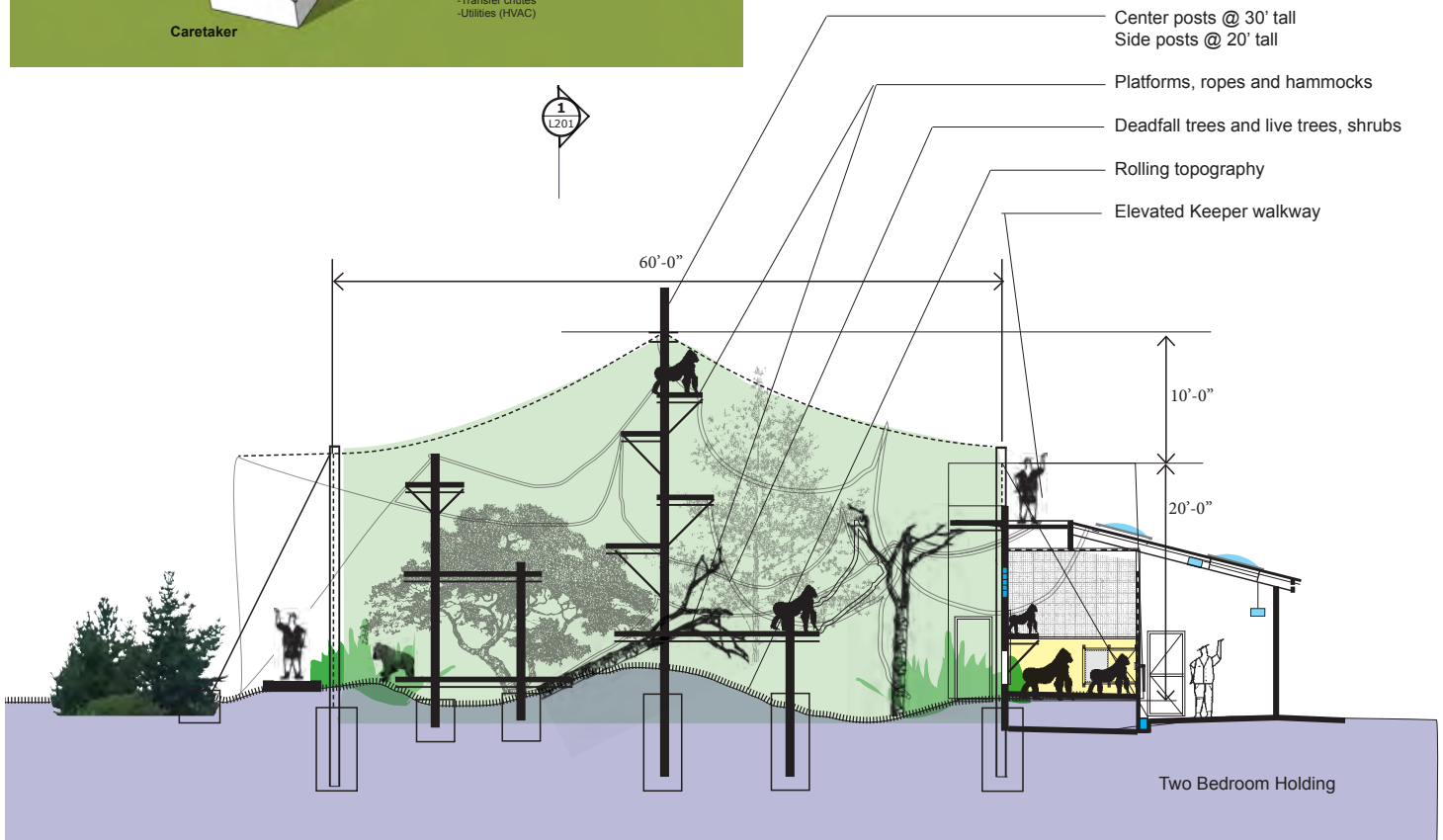
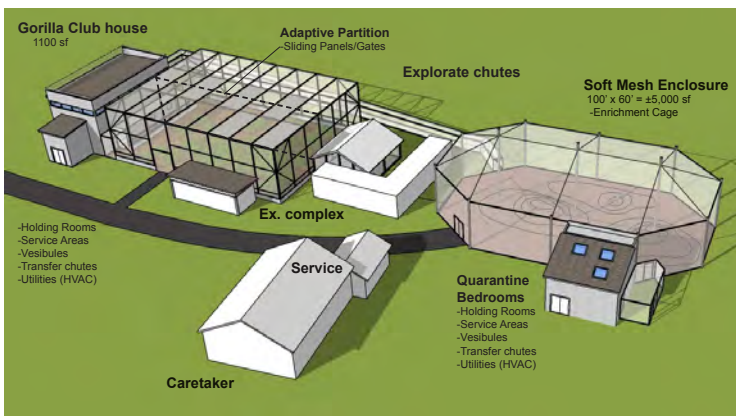
Projected Cost: \$10,000,00 (estimated)
Client: Gorilla Foundation, Inc.
Contact: Gary Stanley, 650-722-6810



The Gorilla Foundation contacted Ursa in 2016 to prepare designs for a revitalization to the Woodside, CA. property where Koko the Gorilla lived for 47 years. The plan was to expand the capabilities of the center to house an additional family group of Great Apes that Koko can be intergraded into as the Grandmother.

New facilities were included for a Gorilla Club house, revitalize the Existing Cage and holding trailers, and add a new 5,000 sf. x 30' tall soft mesh enrichment cage with its own new holding building. We also provided an "Explore Chute" that could connect together all the facilities.

This plan was abandoned when Koko died, and the Gorilla Foundation found themselves fighting in court to hold onto Koko's companion Silverback, Ndumi. They lost that case, and he was sent back after 25 years to Cleveland Zoo.





Project Cost: \$3,500,000 (Estimated)

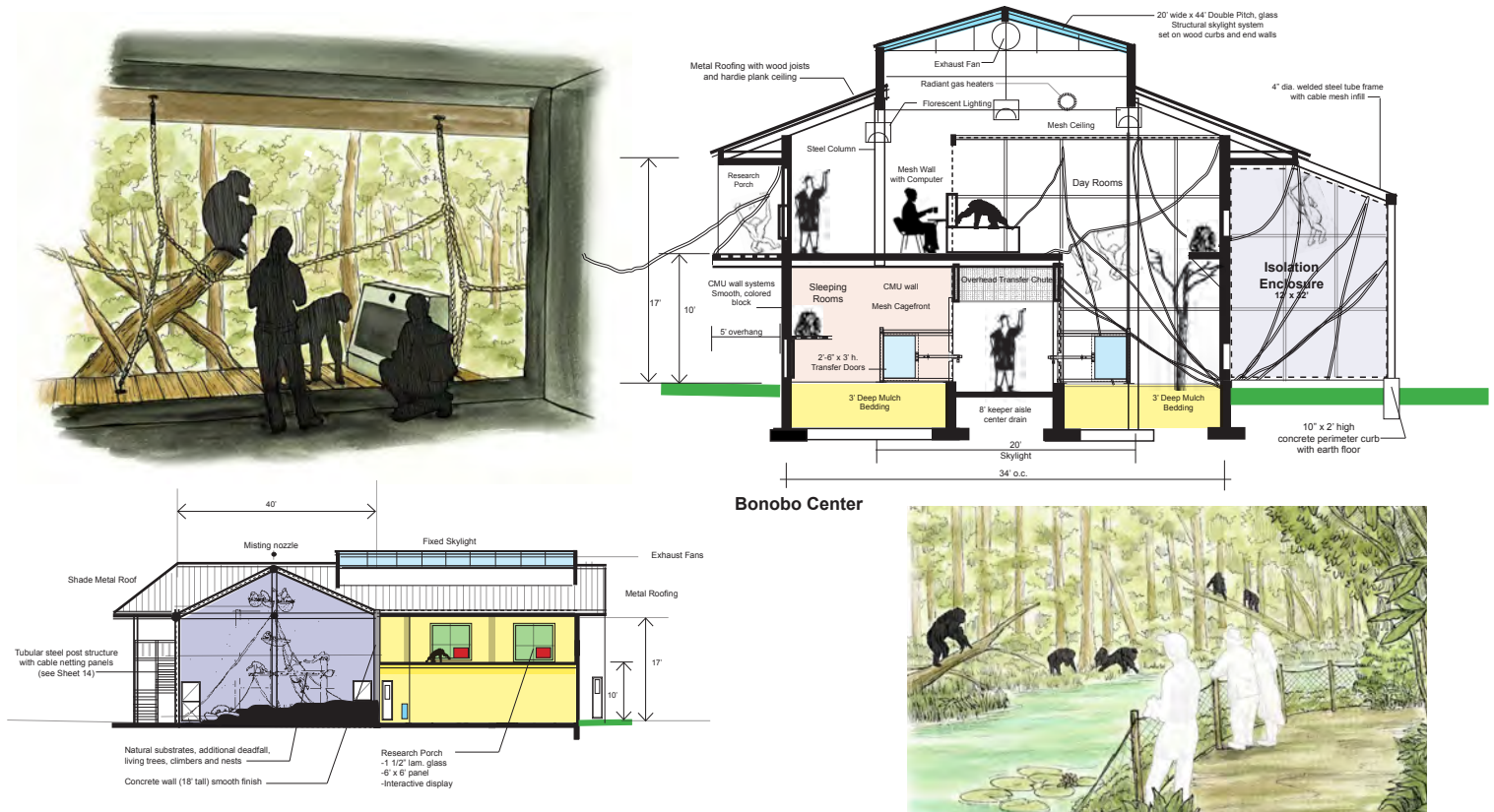
Client: Ape Cognition and Conservation Initiative

Contact: Dr. Jared Tagliatela (404) 932-4682

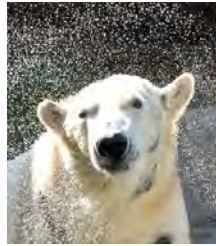
Ursa International was hired by Ape Cognition and Conservation Initiative (ACCI) to prepare a Concept Plan for a new Research Center in Georgia for Bonobos and Chimpanzees currently housed at the Great Ape Trust in Iowa, as well as additional individuals that may become available to ACCI.

The project consists of the reuse of the existing Cabin for Administrative functions and two large Chimpanzee habitats with indoor holding buildings that can be phased as two separate construction projects depending on funding. Additionally, there is a Quarantine habitat and indoor facilities and a veterinary treatment suite and isolation area for medical care.

Dr. Jared Tagliatela from Kennesaw and Dr. William Hopkins from Georgia State provided the Conceptual Program for the Center as well as many detailed sizes and quantities that were used to develop this Concept Plan. We met regularly to review the Concepts and Site to determine its feasibility. This report outlines the proposed facility and documents the final product used to generate a Budget Estimate. Ursa was asked to develop an initial Concept Plan that makes use of the largest open fields to locate two large habitats, each with 2500 s.f. holding buildings. One habitat is approximately 1.25 acres and the other is twice that size at 2.5 acres.



Ursa International Project Brief



North Carolina Zoo, Asheboro, N.C. Rocky Coast Polar Bear Expansion, 2015

Cost: \$8.5 M + 1.0 M for Sealion Saltwater
Client: HH Architects, Raleigh, N.C. prime
N.C. Dept. of Natural Resources, funding
N.C.Zoo Society, for design funding
Contact: Ken Reininger, (336) 302-7678
Gerry Parker, PE, 336-879-7515

Improving on the Standard

The Polar Bear Exhibit Expansion is designed to move the existing Polar Bear facility into the 21st century, complying with the Manitoba Polar Bear Housing Standards and allowing the zoo to receive Canadian Bears.

The existing 6,300 sf exhibit is 90% gunite-covered and is mostly comprised of a large pool, with great underwater viewing as well as a sunny overlook terrace. The new exhibit connects to this exhibit through an "ice cave" that is visible from a new viewing blind that has large glass panels for viewing into the new +20,000 sf upland Tundra exhibit. The new exhibit has a shallow water feature, waterfall, and rocky bluffs. An interpretive building provides a long view down the length of the exhibit (over 200 ft), and multiple computer kiosks and flat graphics that talk about the story of Piper the Polar Bear and Climate Change.

There is an additional 1700 sf holding building to accommodate a maternity suite, isolation den, medical holding and off-exhibit holding for the male. The existing holding was renovated to enlarge individual cells to above standard size. The complex can be managed as two separate enclosures or as one joined exhibit depending on the population and management requirements.

Mr. Lash was selected to conduct a design workshop and produce concept planning and fundraising documents which were used to successfully raise the funds. HH's design team was selected with Ursa maintaining the Design Lead role responsible for overall zoo design and documents for Zoo-built features including, Landscape, Rockwork and Exhibitry, Caging as well as Site Planning and details for visitor areas. Construction began November 2010 with ultimate completion in October 2015.

This is the fourth project Ursa has worked on with the North Carolina Zoo. The State believed in the zoo enough to fund this project in 2008, when no-one funded anything. We were shovel ready!



Cost: \$3.0M complete
Client: Columbus State University, Special Projects
Contact: Dr. Kimberly McElveen, Director for Student Engagement

Cats on Campus

Columbus State University is represented by a Cougar mascot. The President's office decided they would pursue the idea of housing a real Cougar on Campus - not for Football Games, but to educate the students and give respect to the great native Cat. Ursa was invited to assess the possibility and report on a recommendation. The client had a site proposed, but would entertain any other available parcel on the 500+ acre campus.

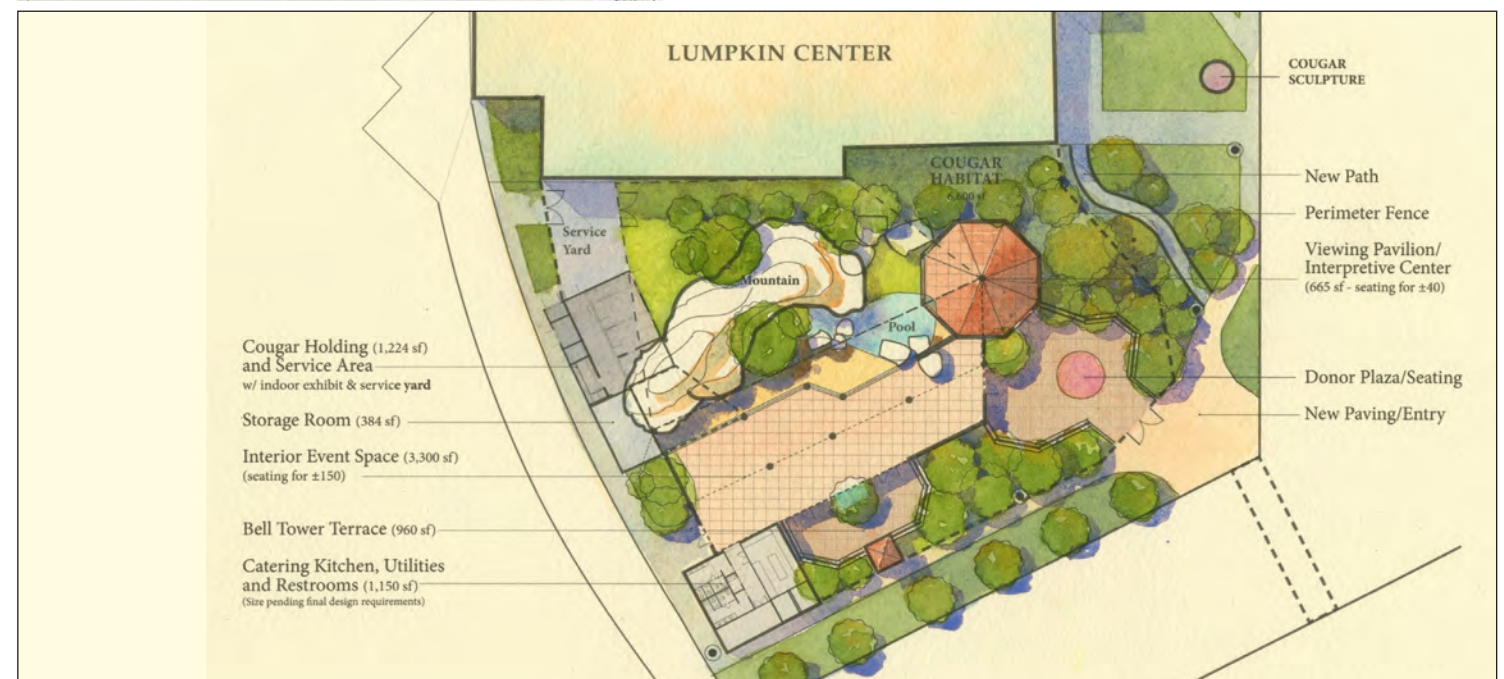
Ursa's Concept Workshop Process

Ursa coordinated a ½ day workshop with the President, Deans and several department heads to discuss the questions, understand the mission and goals of the project, and get direction from the highest level at the University. We toured the entire campus and determined our favorite location for the new Habitat – by the river, on a slope, with tall canopy hardwoods. We also evaluated the proposed site, a flat lawn adjacent to a 6 story athletic building and fronting the Men's Baseball field, across the street from the Student Center. At a second meeting we were able to present to two options and evaluations. The client wanted the central site for security concerns - Ursa wanted the natural site, for the cat. In the end, this will be a great habitat and long term home for the Columbus State Cougars.

The project not only provides adequate holding and habitat for a pair or threesome of Cougars, it also provides indoor space for 150 people, as well as catering, restroom and service areas to host a wide range of events, viewing the Cougar. It will also be open for impromptu student and townspeople to visit and learn about the state of the Cougar, on Campus and in the world.

Role

The Lash's worked together on this as a Master Planning team, Exhibit Design and Biologist, to determine the design criteria, program, material selection, site design and many options. We coordinated with all stakeholders, staff including Alumni and Faculty representatives. We advised the President of the University and his senior staff spearheading the effort. We prepared the presentation material for promoting the project to the private sector. The project had been approved and tabled as a new president was appointed and Cougars on Campus was not on his agenda.



Ursa International Project Brief



Chimp Haven, Inc., Shreveport, LA. **Chimpanzee Sanctuary, 2004-14**

Project Cost: \$11,600,000 (Phase I & II Cost:)

Client: Chimp Haven, Inc.

Contact: Allen Smith and Rana Smith 318-925-5783

Chimp Haven's National Chimpanzee Sanctuary is a National Institute of Health (NIH) funded retirement community for over 300 chimpanzees situated on 200 acres in rural Shreveport, Louisiana. The project involves the safe management and socialization of chimpanzees in order to form large groups. This approach is far more cost-effective than standard laboratory housing while providing an enriched environment for the chimpanzees. Chimp Haven is built on the expertise of individuals devoted to the most professional and humane care and management of chimpanzees. It is supported by diverse individuals and organizations, representing the research, zoo and animal welfare communities. Chimp Haven is an educational facility that provides opportunities for students of all ages to learn about chimpanzees. It offers learning experiences to observe, appreciate and better understand these remarkable beings who have given their lives to better understand Humans.

Ursa International has been working on the design of the entire facility since 1998, helping the Chimp Haven Board raise the necessary funds and support to establish this major facility. He is currently acting as Owner's Representative/Landscape Architect during construction, reviewing Architectural and Engineering activities, as well as working on the design of the Phase III Expansion Area. Phase I and II are complete and provides housing for the first 300+ chimps.

Within the first week out in the habitats, some of the chimps were already in the trees. The project is extremely successful in allowing the staff to build large multi-male groups, in fact Chimp Haven has the two largest groups of nineteen chimps living together in captivity.



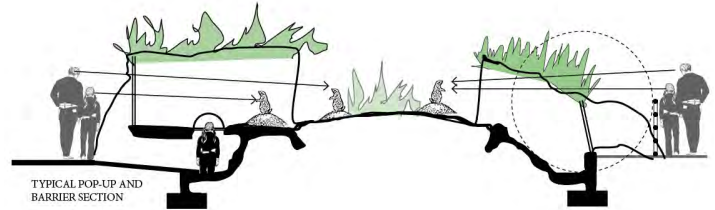
Ursa International Project Brief

Zoo New England, Inc.

Nature's Neighborhoods, 2012-13

Welcome Plaza, 2012-13

Project Budget: \$6M
Client: Zoo New England, Inc.
Contact: John Linahan, Zoo Director (617) 989-2054
Marshall Judges, Facilities Director (617) 989-3735
Size: 3.75 acres



Typical Exhibit Section: Prairie Dog (Ursa International)

Project Description:

Ursa International was asked to join an existing Design Team under Cambridge Seven, Main Street Design and Coyle and Caron, to consult on the Animal Management Program elements of the project. Working directly with Coyle and Caron, we helped develop and document the design criteria for each species in the proposed Children's Zoo development during the Schematic Design phase of work.

The exhibits at the time consisted of all species that could be housed within the Temperate zone including:

Grasslands species: Prairie Dog, Quail, Snake

Woodland species: Red Panda, Muntjac, Asian Birds

Wetlands species: River Otter, Sea Ducks and Waterfowl, Turtles and Fish

Welcome species: Flamingos, Kori Bustards, Zebra & Wildebeast

Ursa consulted on the design of both the exhibit elements (barrier design, water requirements and climbing and landscape elements) as well as the holding areas requirements, locations and materials needed. We also worked directly with the Interpretive team to plan activities and play spaces for children.

Special considerations involved creating 'parallel play' activities that the Children would be encouraged to interact with that mirrored activities that the animals would normally engage; such as Bamboo Climbers at the Red Panda overlooks, Tunneling at the Prairie Dog burrow and a crawl-through Beaver Lodge at the Otter habitat. During this phase of work we had several workshops with the complete design team including Owner staff and stakeholders to confirm the scope of work and the proposed layout and features. Coyle and Caron's role as Exhibit Designers and Landscape Architects interacted with all design team members to develop the plan of the Children's Zoo as well as the connection to the proposed Welcome Plaza, entry buildings and exhibits. We also provided input for the exhibits proposed in the entry plaza, including new exhibits for Flamingos and Kori Bustards.

Ursa contributed to the project documents that outlined a comprehensive view of the entire projects for cost estimating and value engineering to scale the project to the budget prior to moving into Design Development with the confidence that animal requirements would be met.



Nature's Neighborhood Interpretive Exhibit Plan (Cambridge Seven)

Ursa International Project Brief

Zoo Atlanta, Atlanta, Georgia Carnivore Complex, 2010

Project Budget: \$1,200,000 complete
Client: Atlanta-Fulton County Zoo, Inc.
Client Contact: Dr. Dwight Lawson
Bill Cooper

The Carnivore Complex is a two-phase renovation of the Sumatran Tiger Exhibit designed by Nevin (while at CLR) in 1992 with a small mesh topped habitat for cubs and Mom, and a large fenced enclosure for the adults. The Zoo had at that time wanted an open air building with shade and sun areas, and warmed dens and keeper areas. By 2010 (or before) it was agreed that the Sumatran Tigers would like some HVAC.

This project began with the goal of enclosing the building and adding another Carnivore species. After much searching and debate, the zoo decided to go with Malayan Sun Bears. A new 18' x 40' holding building was added on the ground floor adjacent to the renovated tiger holding, and a 20' tall serpentine concrete block wall divided the two habitats.

New visitor viewing areas provides for a variety of viewing types including, a central trellised area with glass viewing into both Tiger and Bear, two (steel) bamboo barriers for a more unique experience as well as a new covered terrace above the new Bear Holding, themed as a Thai house with open viewing through screening of the bear and tiger.

Ursa worked with the Zoo to establish the concept design and hire the architectural team, and continued on as the Exhibit Designer/Landscape Architect for the project



Ursa International Project Brief

Karisoke, Rwanda

Concept Planning, 2010

Project Budget: \$9.5 M USD

Client: Dian Fossey Gorilla
Fund International (DFGFI)

Contact: Clare Richardson
(404) 624-5959

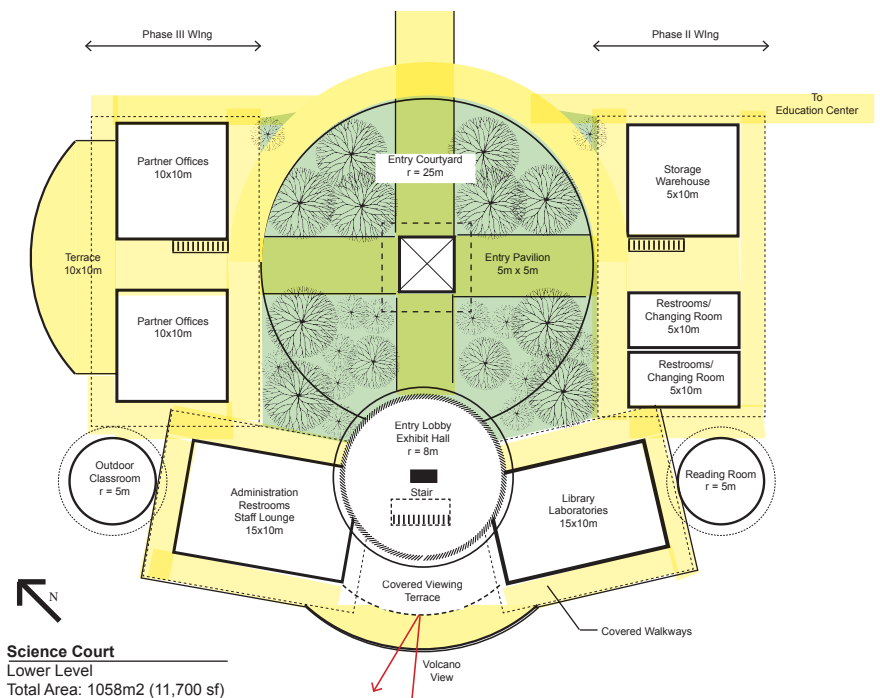
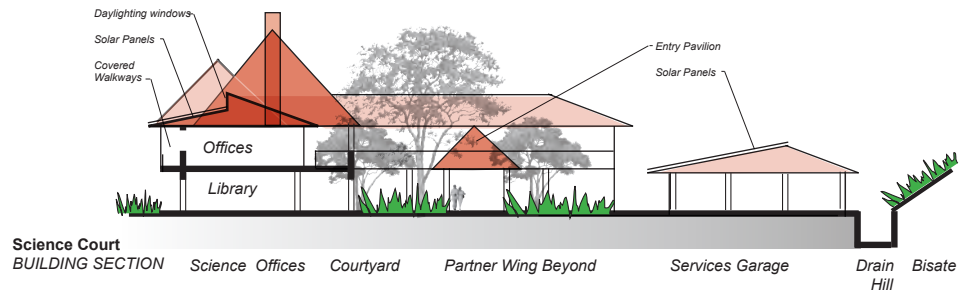
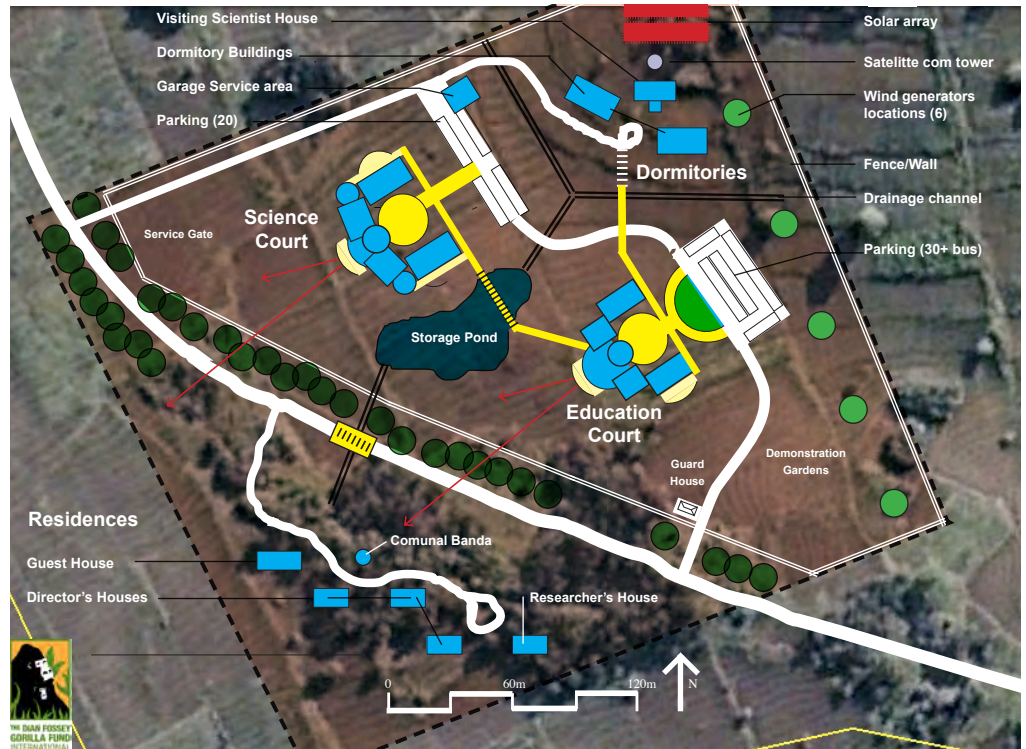
Ursa International was asked to undertake a site selection study and develop a concept plan for the new Karisoke Research Center. This facility, dedicated to the work of Dian Fossey within the home range of the Mountain Gorillas, is to provide an operational base for international scientific research and for conservation education for local people as well as to the tourist who come to see the Gorillas.

We evaluated several sites, but quickly identified a perfect location, adjacent to the expanded park boundaries within a new economic development zone outside of the village of Bisati. This location provides easy access to the section of the Park DFGFI has historically worked, as well as provides views to the original Karisoke Center on the Mountains. It is also adjacent to a new Ecolodge and can share water resources, roads and power systems.

The Center itself is composed of two courtyards; one, the Education Court provides 12000 sf of public facilities for interactive displays, multimedia, and computer-based distance learning and conference facilities, and the other, Science Court provides 25000 sf of office, library and laboratory spaces for the growing research staff of DFGFI, as well as additional office space for partner organizations. The buildings will be built with local materials, and provide it's own power and heating.

The Center will also provide various housing types for resident directors as well as visiting scientists, students and VIP guests. There will be shared food services, and dining space as well as group meeting and conference areas.

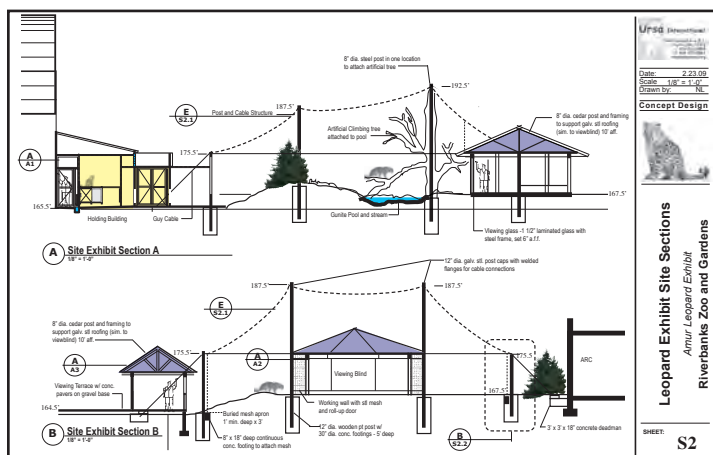
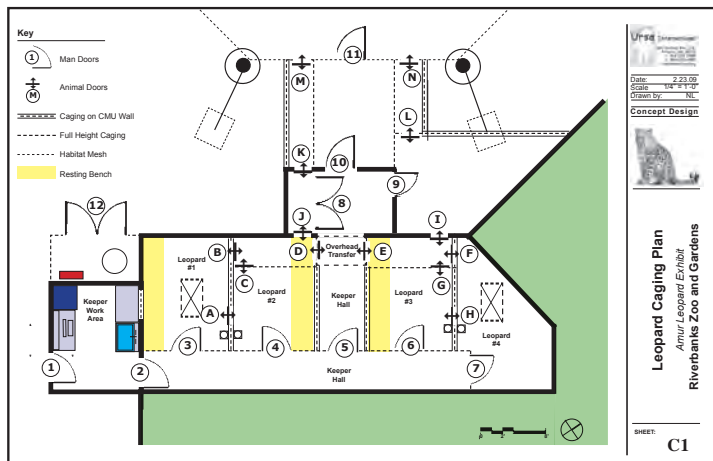
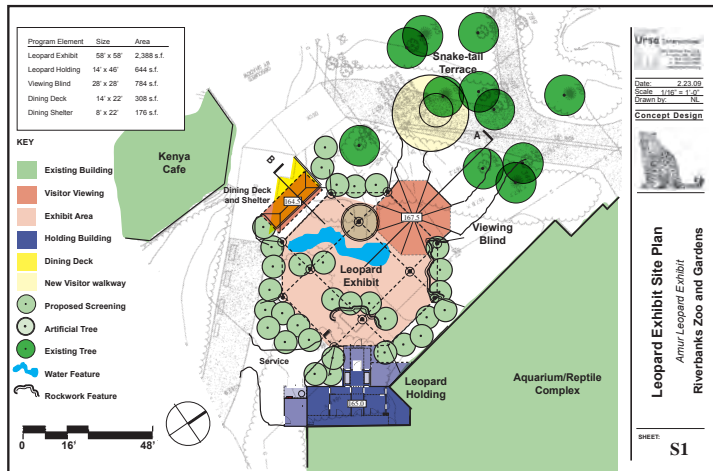
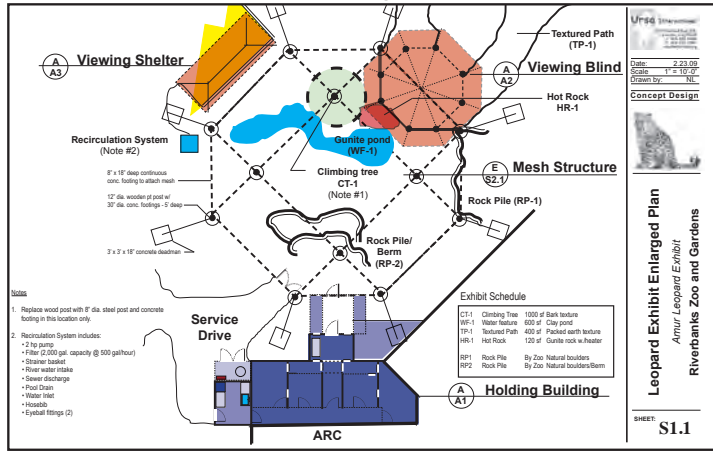
The Campus has received funding for design and construction with MASS design working to realize the project which is planned for a 2022 opening.



Science Court
Lower Level
Total Area: 1058m² (11,700 sf)

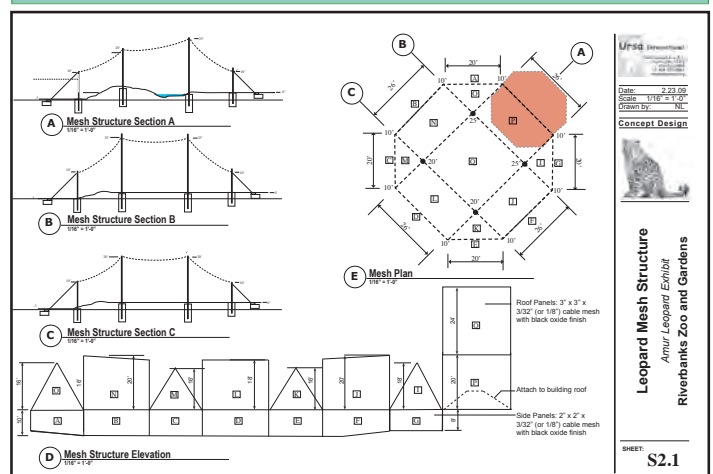
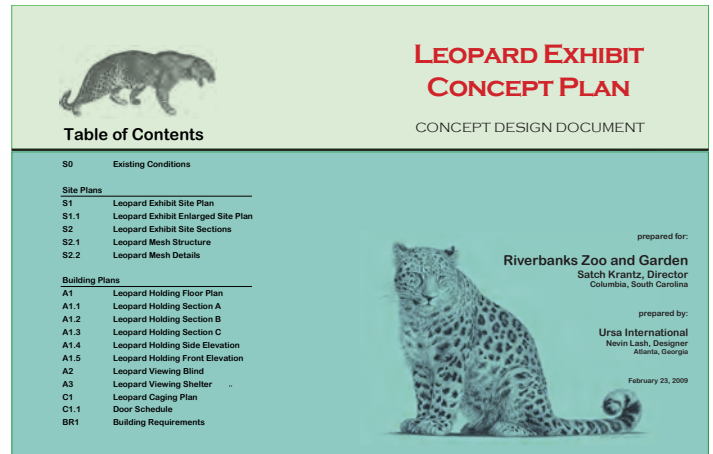


Ursa International Project Brief



Riverbanks Zoo, Columbia, S.C. Leopard Exhibit, 2009

Construction Budget: \$750,000 USD
Client: Riverbanks Zoo, Columbia South Carolina
Client Contact: Satch Krantz, 803-779-8717 x1101



Ursa International was invited to help Riverbanks Zoo determine what new exhibit they can build for around \$500K. We went through a workshop process with the staff to determine what some institutional gaps there might be. Many options were discussed, and sites evaluated. In the end the staff decided on an Amur Leopard.

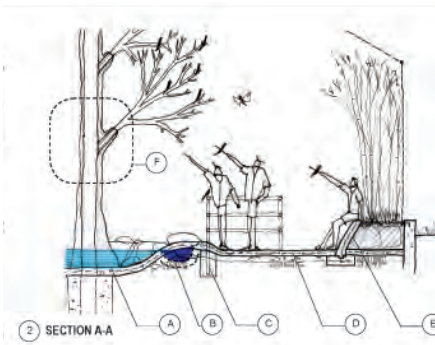
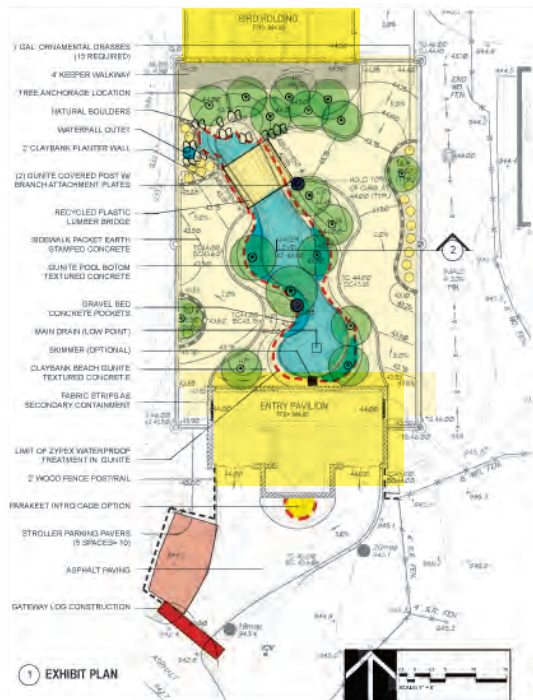
The project consisted of a single, 2,500 sf netted structure and a 650 sf holding building with 4 stalls, plus an off-exhibit, outdoor enclosure. The exhibit would have a small water feature, artificial trees for perching. The visitors would have two vantage points; one through glass viewing blind and interpretive shelter, and the other was from an extension of an eating deck off of their major food service.

After an intensive, comprehensive schematic design process, Ursa developed costs for the project. We all realized that it would be a more expensive and substantial new exhibit option - but we didn't know how much more than the target \$500K. It was agreed that it would add a lot of value to the Zoo experience for the visitors and it was worth developing. A local contractor who had done work with Riverbanks was able to cost the traditional building elements, and Ursa shopped the Mesh, Caging and rockwork components. The cost of the project topped \$750K including design fees and contingency. Unfortunately, this was greater than the zoo was willing to spend at that time, and the project was shelved.

Ursa International Project Brief

Zoo Atlanta,

Boundless Budgies 2009



Project Budget: \$900K USD
 Client: Zoo Atlanta
 Contact: Dennis Kelly, Director, Zoo Atlanta, 404-624-5667

After completing the Bird Management Building at Zoo Atlanta, we designed and built a large walk-through Aviary for Parakeets. The primary mission was to allow children to have a fun experience with Birds in a safe place, but it's also great for Adults. This 30' x 40' Aviary has over 700 parakeets as well as pheasants and ducks in the water feature. There is a 15' x 30' bird holding building that provides housing for colder weather and for management and caring for the birds. There is also a Entry Pavilion designed as two vestibules for visitors to safely enter and leave the Aviary with out losing birds, as well as monitor visitor flow into this popular venue. There is a open gift shop and food stick sales desk and a hand-washing station in the pavilion, too.



Ursa International Project Brief

Zoo Ljubljana, Ljubljana, Slovenia Master Plan 2007 Services Center, 2008

Project Budget: \$50 M Euro

Client: City of Ljubljana Zoo

Contact: Zdenka Fischinger 386-1-42-184

This report is the culmination of a series of Workshops and Worksessions undertaken with the Zoo Ljubljana Staff and Ursa International during 2005-2007. This report documents the design process for the Master Plan for Zoo Ljubljana, Slovenia. The workshops consisted of three to four days of group meetings and work sessions that seek to develop an approved Master Plan for the 35 hectare site. It is with great pleasure that we at Ursa International had the privilege to work with the Zoo Ljubljana staff to determine a bold new direction for the Zoo, representing a direction that will sustain it for over the next 25 years and beyond.

The act of re-building Zoo Ljubljana is an act of re-birth. In order for Zoo Ljubljana to remain relevant to the community, it has to be brought up to date comparable to it's peers and be re-born in the 21st Century. All over the world, zoos are becoming much more than a collection of animals in a park. It is now important to become Conservation Centers and Education Centers and Research Centers. Know longer is it acceptable to house animals in less than ideal conditions for their year-round health and comfort, in just the same way it is no longer acceptable to not provide highest level of visitor services and satisfaction for their guests and visitors. The New Zoo, if it's to take on the important role of Educating the Children, it must be re-born as an innovative and interactive place that it can be. It is already the #2 tourist attraction in Slovenia.

The report and drawings represent the major changes that need to be undertaken in order to present a more modern approach to zoological management. We have developed a Master Plan in nine major Exhibit Zones that can be developed over time. Exhibit Concepts for:

Zoo Entry Plaza	American Tropics
Australian Walkabout	Savanna Safari
African Forest Pavilion	Asian Forest
Slovene Farmyard	Slovene Wildlife
Service and Support	

Services Center

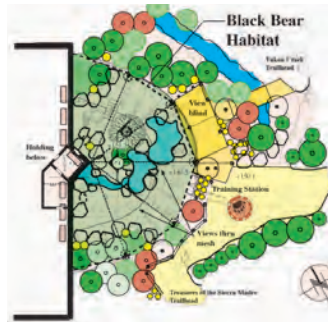
In the most remote corner of the site, adjacent to the main roadway, is a Service and Support Area that is off-limits to the general public. A major new 2 story building is planned to house the veterinary clinic, holding on the upper level and animal food preparation kitchen, keeper office and locker room, laundry, restrooms on the lower level. There will also be a separate building for quarantine with additional off-exhibit holding yards off this new barn. Separate hay storage and food storage facilities will be provided with easy truck access. Facilities are available for truck wheel cleaning water collection. This facility has been programmed to fit the requirements of the services staff and consulting veterinarian and will consolidate all the animal care staff within a non-public area. Consideration has been given for Green technologies use such as Green roofs, passive solar orientation for lighting and water harvesting.

Due to the economic downturn after 2008, and changes in political leadership, Zoo Ljubljana's re-birth is on hold. They continue to offer an animal and nature experience not found anywhere else in Slovenia, yet much remains to be done.



SERVICES PHASE I
Service Complex





Stone Zoo, Stoneham, Massachusetts Black Bear at Yukon Creek, 2008

Project Budget: \$800,000 overall budget
Client: Zoo New England, Inc.
Client Contact: Marshall Judges: 617-989-3735

The Black Bear Exhibit is a renovation of the 1950's Polar Bear exhibit at Stone Zoo. The site is located off one side of the old Large Mammal House, set between the "Treasures of the Sierra Madre" - Mexican highlands exhibit, and the "Yukon Creek" - North American woodland exhibit. The existing Polar Bear exhibit had a 20' deep concrete dry moat with a 25' radius land area for the bears to live on. The standards for Polar Bears have changed significantly since this exhibit was built, that now a new species needed to be considered. The Zoo decided to re-design for Black Bear and create a new habitat within this limited area.

To do this we filled in the dry moat and existing rectangular pool, with natural substrates, and created a waterfall, stream and two pools for the bears to play in. Then we used the existing concrete moat walls to secure large I-beams which carried the load for a stainless steel mesh and cable structure. Rocks and conifers, deadfall and mulch beds, and the Bears moved in.

This renovation took a 1,000 sf. Polar Bear dry moated exhibit to a 4,000 sf. x 13' tall, Black Bear mesh enclosure. During construction, additional funding was provided to add a glass viewing blind instead of viewing through the mesh. This dramatic change took the exhibit into the a modern realm with close-up/nose-to-nose experience. Major modifications were made inside the old Polar Bear holding to allow more visibility and training and enrichment opportunities in the holding area. On exhibit, at the exhibit service access gate, a special keeper training station was provided for Keeper Talks and daily enrichment sessions for the bears, directly adjacent to the viewing blind.

In the end, the zoo was able to bring back an old favorite species in a new, appropriately-sized exhibit in place of an undersized exhibit, in an ideal location, in the Yukon Creek/Northern Woodland exhibit sequence. Within five months, the zoo was able to create a new marketing product, with limited public and private funding sources, that is kid friendly and that showcases the zoo's mission of 'intimate experiences with native animals'.



Ursa International Project Brief

Presidential Palace at Iavoloha

Vitrine De Madagascar, 2007

Project Budget: \$6,000,000 overall budget
 Client: Conservation International Inc.
 Client Contact: Russell Mittermeier: 703-341-2479

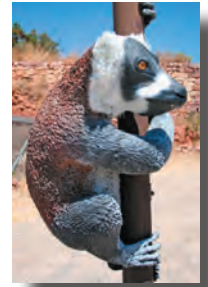
This Exhibit is a live collection of the rich biodiversity of today's Madagascar, its plants, animals, its architectural heritage AND, like nowhere else in the world, it is a display of Madagascar's unique extinct species taken from the fossil record.

The project is divided into 7 major project areas and covers approximately 17 hectares (42 acres). Most visitors arrive after passing through a new gate before the main gatehouse, and drive along the existing roadway to a new central parking area. From the existing Lemur Island, the Aquatic Life Pond and Bird Aviaries, The visitor follows up the hill through the Lemur forest Trail and into the Extinction Trail to the Biodiversity Pavilion located on the top of the site in the footprint of the old Pagoda, and then down to the new Auditorium. From there guests may rest on the Garden Terraces where final views across the rice paddies to the free ranging lemurs are possible.

Each area presents a different group of species within a natural setting. The animals are contained within large habitats specially designed for their needs with special animal management areas. There are interpretive buildings for each project that represent different architectural styles from different regions of the country.

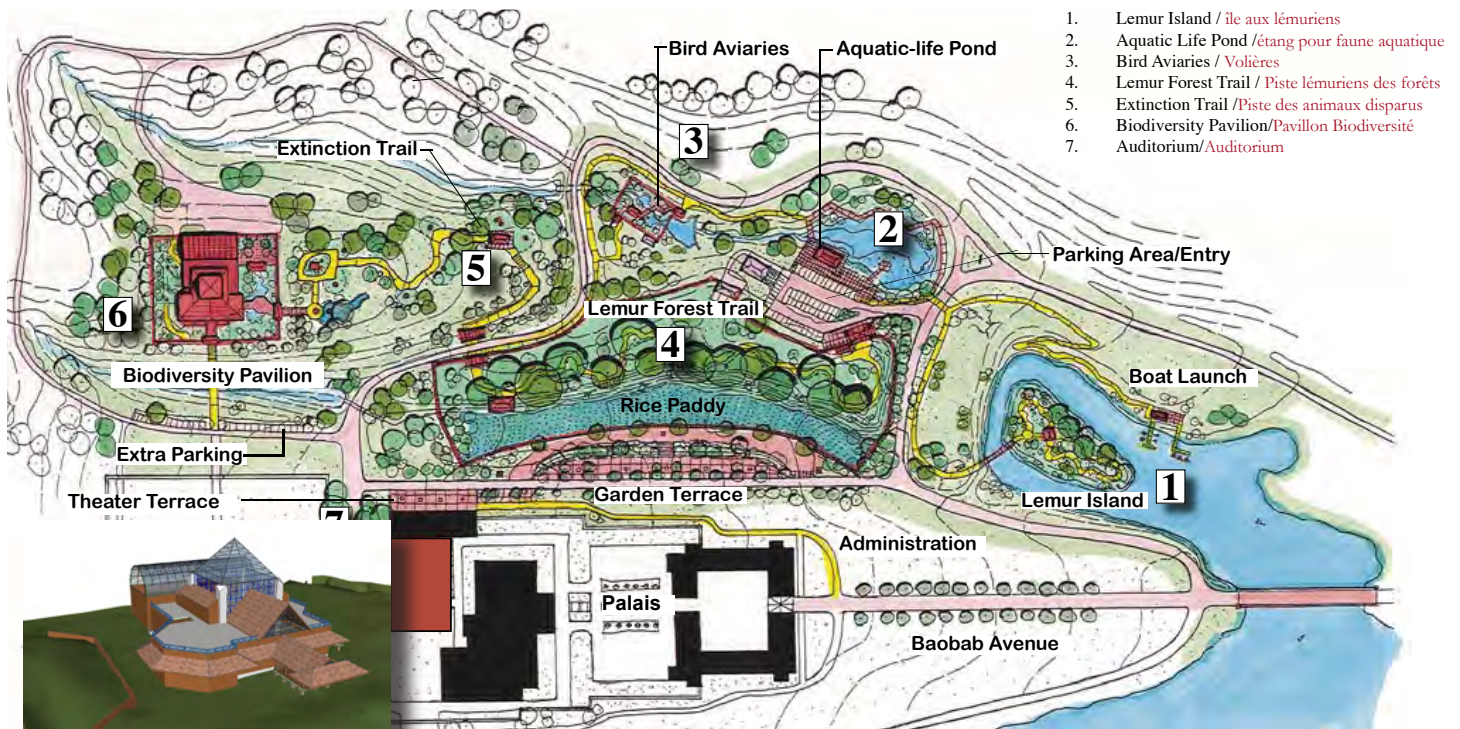
For the presentation to the President, we built a full-size fiberglass sculpture of one of the Extinct species, Megaladapus Edwardii, that would be found in the trees on the Extinction Trail. A dozen other extinct species will be eventually displayed in a natural context to experience what it would have been like not that long ago, when Giant Sloths, and Koala-like Lemurs inhabited the forest.

The Biodiversity Pavilion is the crowning-jewel of the Park, with 8 major galleries and habitats and include:



1. **The Gems of Madagascar** exhibit, displaying some of the small, endemic species such as the Parson's chameleon, the spiny Tenrec, the Mittermeier Mouse Lemur, and Leaf-nosed Snake other unique creatures,
2. **The free-flight tropical rainforest bird aviary** where visitors can explore a two story sky-lit space, with some of the rainforest birds and chameleons, without visible barriers,
3. **The Lemur Gallery**, where several family groups of lemurs live in a specially design mesh structure adjacent to the pavilion, viewed through an expansive glass partition,
4. **The Biodiversity Hall**, where small, 'jewel-tanks' display living insect species, such as the Madagascar Cockroach, centipedes, stick insects, leaf insects and other unique Malagasy invertebrate species.
5. **The Spiny Desert Conservatory**; a re-creation of the dry forests of the south, where truly unique plant species create a harsh environment for a host of endemic species. This walk-through exhibit with a controlled climate and glass roof will be a great introduction a very important habitat.
6. **The Garden Terrace**; a relaxing outdoor patio where visitors can sit and enjoy a drink or light snack surrounded by various small reptiles overlooking the reptile pool.
7. **The Future's Gallery**, an interpretive space that tells the story of Conservation in Madagascar – what is being done to protect the wild habitats and species in one of the most unique countries on Earth.
8. **The Fruit Bat Gallery**; an exterior exhibit for the endangered fruit bats. The visitors exit the pavilion surrounded by the bats that will roost inches from them.

The Project is currently in fundraising. The scope of the project expanded far beyond the original concept of a Bio-diversity Exhibit, into a small wildlife education and breeding center for Madagascar's rarest of the rare.



Ursa International Project Brief



Blue Hills Reservation, Boston, MA. Trailside Center, 2007

Project Budget: \$17,300,000

Client: Massachusetts Audubon Society &
Department of Conservation & Recreation

Client Contact: Barbara Farina
Barbara.Farina@state.ma.us

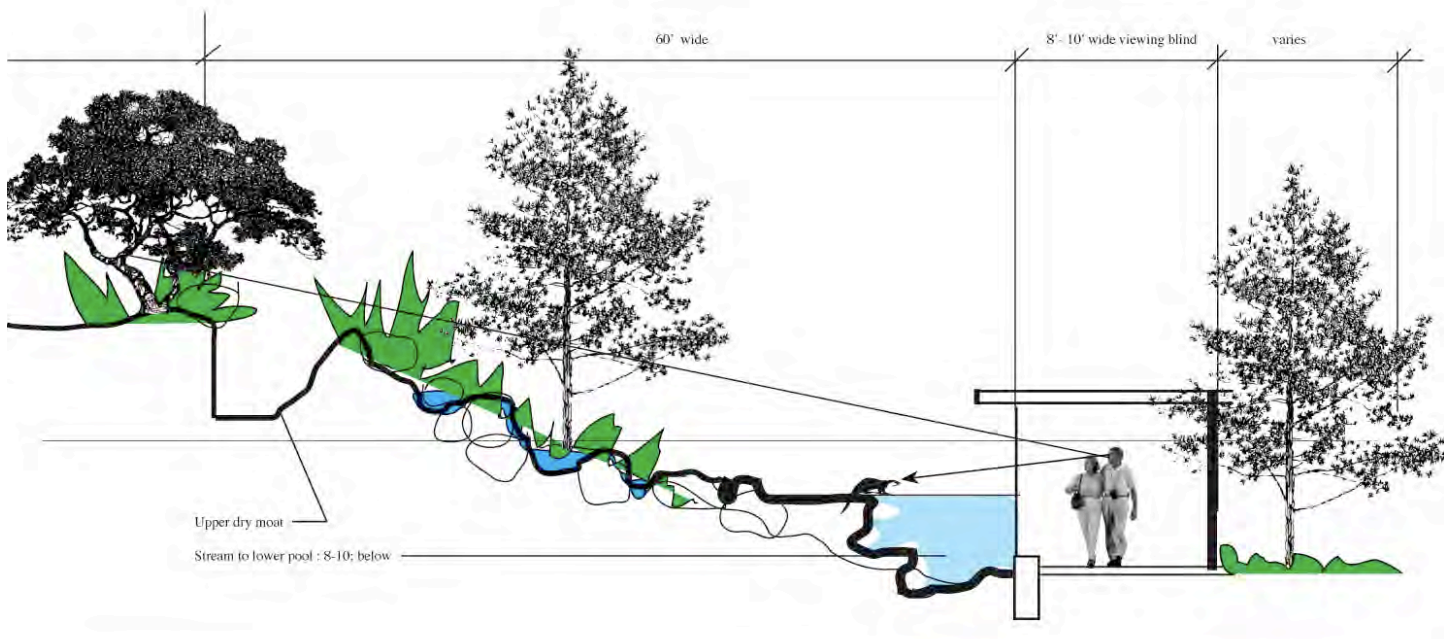
The Trailside Center is a new museum and nature center designed to replace the existing Trailside Museum. The 30 year old facility was no longer able to meet the needs of the visiting public, nor was it the physical embodiment of the lessons being taught. The exhibits were old and in poor repair and in some cases, dangerous to operate.

The Master Plan for Trailside involved a multi-disciplinary group of designers, scientists and educators who wanted to answer the question, 'what should Trailside look like in the future?' No funding was immediately available, but it was important to come up with an appropriate plan that answered the question and attach a price-tag to it.

The Master Plan called for a new 21,780 sf, two story, LEED, nature center building with exhibits, offices, and auditorium space for demonstrations, lectures, films and meetings. The 25 acre grounds were re-designed with modern, immersive exhibits for species found on the Reservation; Otter, Deer, Fisher, Red Fox, Skunk, Hawk, turkey, Snowy Owl, Barn Owl, Turtles, Opossum, and Timber Rattlesnake.

Ursa was involved in the design process to offer a contemporary vision for the facility, design criteria for the animal component and site planning for the new exhibits.

The Master Plan was awarded a Planning Award from the Boston Society of Landscape Architects in 2009. The project has been approved and waiting funding from the Massachusetts legislature and private sources.



Ursa International Project Brief

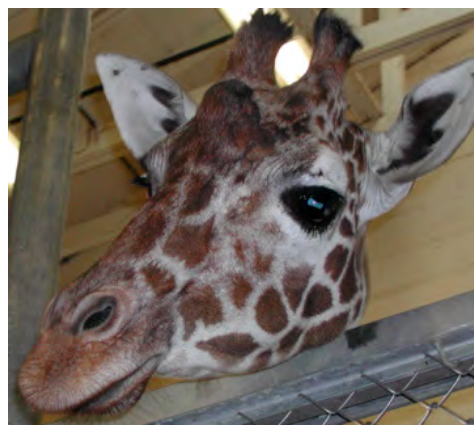
Cape May County Park/Zoo, Cape May, NJ

Master Plan, 2004 and 2008

Project Budget: \$65 M master planning budget
Client: Cape May County Planning Department

Client Contacts: Hurbert Paluch, DVM, Zoo Director, 609-465-3879
Leslie Gimeno, Cape May County Planning Dept. 609-465-6875
Project Timeline: March - October 2004

Ursa was a Subcontractor to Waetzman Planning Group, Bryn Mawr, PA



The Cape May County Park Zoo was established in 1978 as a 20-acre park with a small collection of animals and has grown to over 100 acres with over 180 species. While its growth is exemplary, its organization and facilities are not. The 2004, \$65 million Master Plan seeks to reorganize the site into a modern Zoological Park that the county can rebuild over time. A new circulation system reorients everything from the parking and access roads, thru a new entry plaza, into a single route through the zoo. New exhibits are planned for many of the current collection species and several proposed species, as well as proposed enhancements to existing exhibits. New education programs and facilities are planned for more local community involvement.

Mr. Lash led the initial design effort for the local, multi-disciplinary team during 2004. Ursa returned to Cape May on several occasions to assist with more detail planning for new exhibits as well as Master Plan Updates with the Planning and Engineering Department as they went through an elaborate permitting process. The image above was part of a planning effort to integrate a proposed County Library into the Zoo property with links to the Zoo and the new Community College to the North.

Ursa International Project Brief

Brandywine Zoo, Wilmington, Delaware Master Plan, 2007

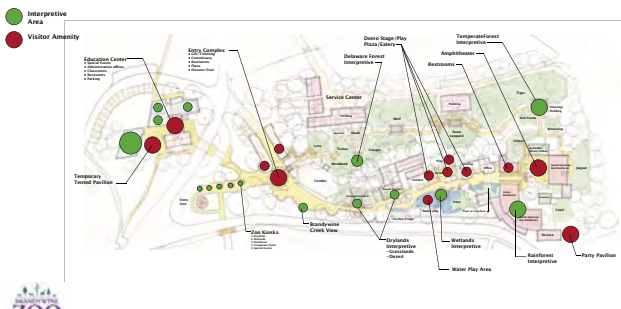
Planning Budget: \$24,000,000 USD
Client: Delaware State Parks
Client Contact: Nancy Falasco, Zoo Director. 302-571-7788



Ursa International in conjunction with MESA developed a Master Plan for the 100 year old zoo to guide its future growth. In the plan, the exhibits are arranged in four water-related biomes that represent habitats from around the world. This allows for ultimate flexibility for the Zoo staff and makes it easier for guests to understand the educational message as they learn the relationships between the animals and their environment. The four biomes are Drylands, Wetlands, Tropical Forest and Temperate Forest. The plan also addresses the underutilized hillside to develop a more interesting loop trail through the Zoo, allowing larger and more natural exhibits for existing and a host of new species at the Zoo.

DRAFT

Visitor Experience



Brandywine Zoo Master Plan
Wilmington, Delaware

This plan will more than double the amount of exhibit area, adding at least 25 new species to the collection. A set of new Tropical Pavilions on the east side of the Zoo will house the current collection in the Exotic Animals House on the other side of Van Buren Street reducing the impact of crossing the street to see the collection. This project will allow for the development of a new Administrative and Education Center, utilizing the existing Education Building and historic Exotic Animal House and forming a new, dynamic, campus environment that includes a Special Events Pavilion and exterior plaza space. These two projects will provide much needed interior exhibit and educational program space.



Ursa International Project Brief



Franklin Park Zoo, Boston, Massachusetts Gorilla Management Plan & Exhibit, 2008

Project Budget: \$3.6 million overall budget
Client: Zoo New England, Inc.
Client Contact: Marshall Judges: 617-989-3735
John Linahan, Zoo Director (617) 989-2054



During 2004, Ursa was asked to work with the Zoo staff to develop a comprehensive plan for renovations of the Gorilla exhibits at the Tropical Forest Building. The project led to a plan to top the interior of the gorilla exhibit, provide viewing blinds and enhanced gorilla exhibitry, a new interior holding area and exterior exhibit for the bachelor gorillas, as well as renovations to the Vet Hospital to better accommodate gorillas. This plan was approved in 2005 and Nevin and his team from Perkins + Will was selected to complete the construction documents and selection of construction managers and contractors to build the first two phases of the project.

In February 2007, Little Joe and Oke, were rejoined with their group, on-exhibit at the Tropical Forest Building after 3 years away. You may remember Little Joe making the news by climbing out of his exhibit on a number of occasions. This project is a direct response to his escape, but goes much further, by creating a much improved environment for Joe and all his friends.



The new exhibit features soft substrates, climbing opportunities, close-up viewing for the public as well as a keeper demonstration/ interactive area where visitors can see first hand some of the training and enrichment activities that go on behind the scenes. The new exhibit is a big success with visitors and Gorillas! It also will contain Little Joe well into the future.

We are now completing work expanding the interior holding areas to accommodate the future expanded bachelor gorilla exhibit. Work was completed and animals moved to the new quarters in 2008.



Ursa International Project Brief

White Oak Flats, Cherokee, N.C. Concept Master Plan, 2006



Planning Budget: \$45,000,000 USD
Client: Eastern Band of Cherokee Indians
Client Contact: Doug Cole (828) 497-1677

Ursa International was invited to assist the Eastern Band of Cherokee Indians in Cherokee, North Carolina in designing a wildlife park to depict the Cherokees relationship with the animal world as seen through their historic stories and culture. After an exhaustive site selection process, we determined that White Oak Flats was the clear winner, there was just one thing - it was nestled high above the town of Cherokee in a saddle between two ridges and Mount Noble.

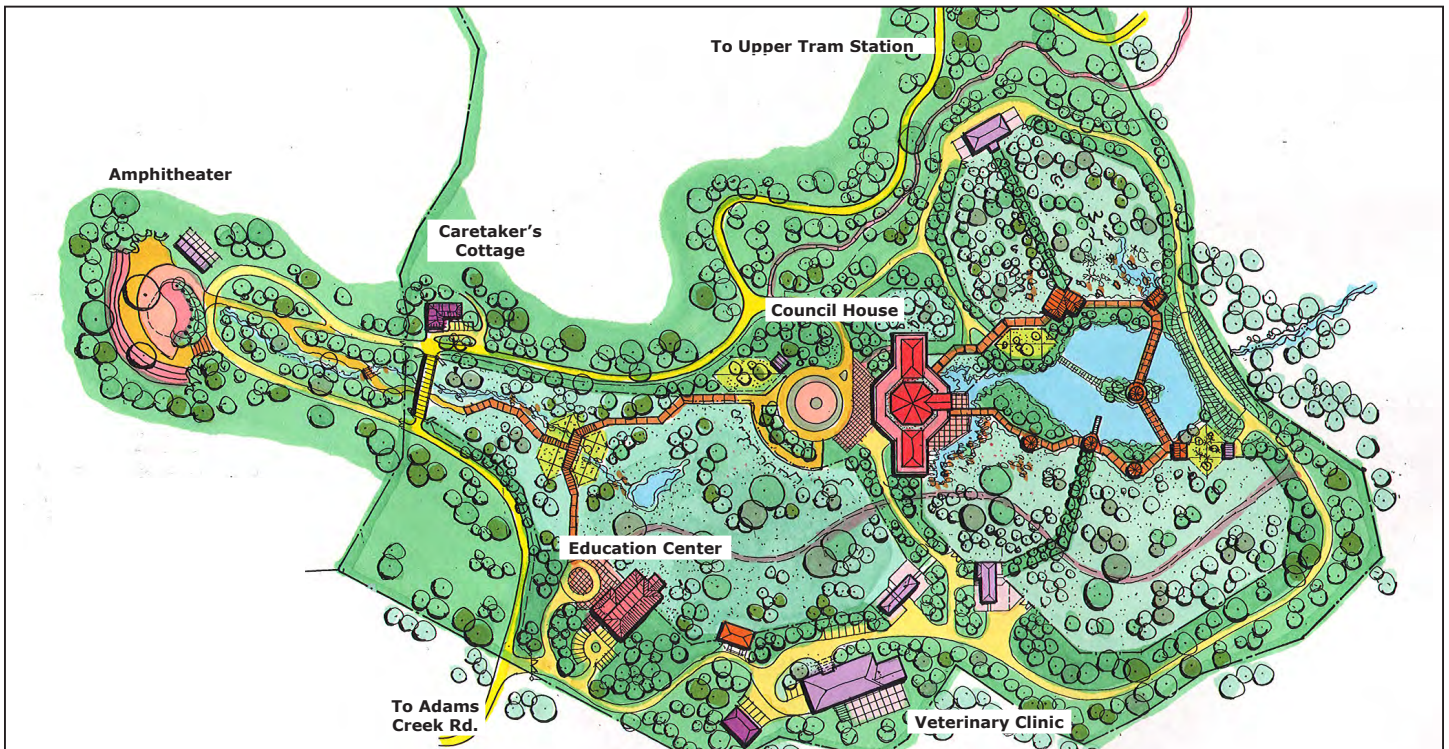
In order to access the site, visitors will arrive at the Oconaluftee Indian Village near the town center and take a 3/4 mile gondola tram ride over 2,000' in elevation to a new "view" restaurant and Tram Plaza. From there visitors can either walk or take a shuttle vehicle to the Council House in the center of the wildlife park.

From the Council House that contains a major performance theater, gallery space for interpretive artifacts, educational materials and an orientation film theater, not to mention restrooms, gift shop, snack bar, eating terrace and gathering spaces for ceremonies and demonstrations. There is also access to the boardwalks that lead out of the east side of the building at the second level providing an interpretive walk through ten naturalistic habitats for the native animal collection: Black Bear, Cougar, Red Fox, Bobcat, Otter, Beaver, Deer, Eagle, Turkey and Red Wolf.

Once back in the Council house, the visitor head west out of the building and into a large ceremonial outdoor plaza that will be programed with special events and dances. The boardwalk trail continues west through the largest woodland habitat for Bison and Elk and then divides to head towards the Education and Vet Center or towards the Amphitheater. Additional features include:

- An Education Center is planned to provide classroom space for school groups, and special meetings and events.
- A Veterinary clinic is also planned to provide necessary care for the animals and teaching opportunities for future scientists.
- A Wildlife Amphitheater with trained birds of prey and other creatures as well as a set of Eco-tents for overnight stays.
- Additional study is needed to determine if a guided ride is possible through the large habitats on the south side.

We also completed a Business Study and Construction Feasibility Study. The project has been presented to the Council as part of a three legged initiative to produce Economic Development through improved tourism products and is awaiting funding.



Ursa International Project Brief



Roger Williams Park Zoo Providence, Rhode Island **North American Trail, 2005**

Project Budget: \$14,500,000 USD
Client: Zoological Society Of Rhode Island
Client Contact: Ron Patalano (401) 785-3510

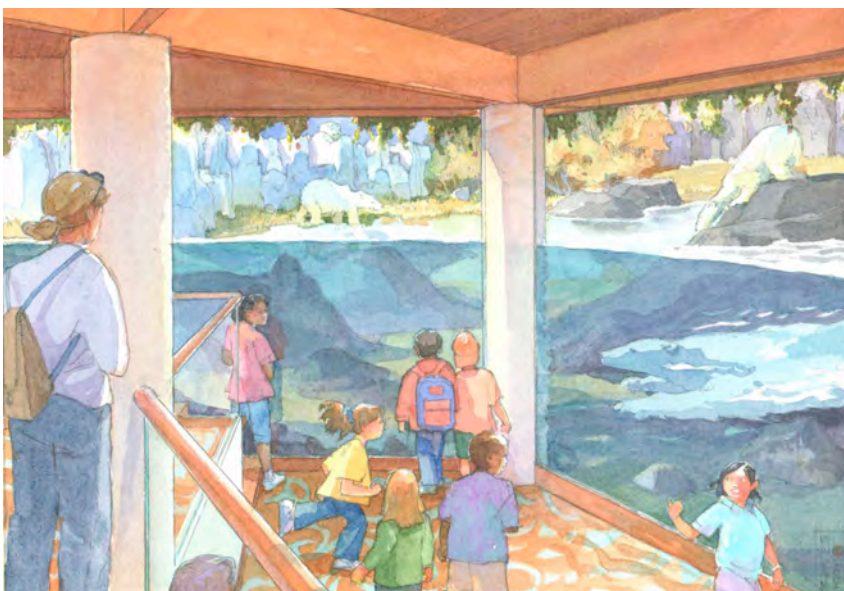
Ursa International was awarded the design of Roger Williams Park Zoo's new Polar Bear and surrounding exhibits project in early 2005. This on-going project is seen as the beginning segment to the zoo's North American collection and thus includes other biomes and habitats beyond Polar Bear tundra, but it is Polar Bear that take center stage in their 20,000 s.f. habitat.

The exhibit attempts to present the Polar Bears in a tundra setting, where the viewers vista extends beyond the confines of the exhibit and across the nearby lake, giving an realistic impression of the vastness of the Arctic realm. There are several other, close-up opportunities as well, where the visitor can stand next to the Bears nose to nose on dry ground, and in the Interpretive Building, completely submerged in the 90,000 gal. pool.

The Exhibit theme involves our notion of "home"; the place where we live, and who we share our home with, the other animals that live in North America. There are many types of homes, both for humans and for animals and they are depicted along the 800 l.f. trail, including log cabins, igloos, eagle nests, prairie dog tunnels and Ice caves. The exhibit will also interpret the conservation success stories due in part to scientific research conducted at Zoos and wildlife partners, bringing the Bison, Bald Eagle and Red Wolf back from the brink of extinction. The Polar Bear is presented as one species that is currently not threatened, yet due to pressures on their environment we are beginning to be concerned for their well-being, and there are things we can do today to help prevent the Polar Bears decline.

Companion species in the exhibit include Bald Eagle, Snowy Owl, Arctic Fox, Red Wolf, Prairie Dog, Bison, Pronghorn, and Harbor Seal. New holding buildings are included for each species. The Polar Bear holding includes four standard dens plus a maternity suite as well as two exterior off-exhibit yards for long term management of this species at the zoo.

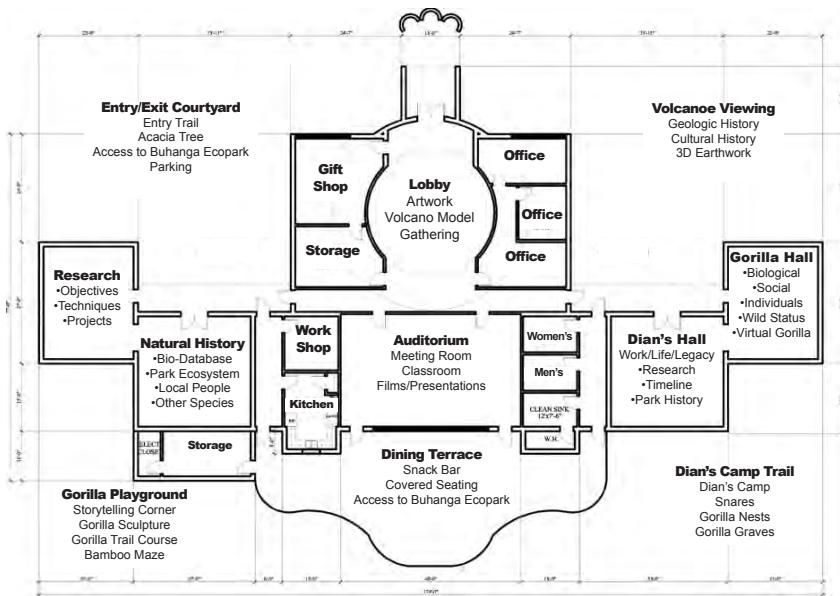
Renderings by Barbara Worth Ratner



Ursa International Project Brief



Computer 3D model of the Discovery Center



Preliminary Interpretive Plan for the Discovery Center



Buhunga Forest, Rwanda Dian Fossey Center, 2005

Project Budget: \$1.5 M USD

Client: Dian Fossey Gorilla Fund International

Contact: Clare Richardson (404) 624-5959

Ursa International was asked to develop a concept plan for a new museum dedicated to the work of Dian Fossey and the Dian Fossey Gorilla Fund International within the home range of the Mountain Gorillas, to provide conservation education to local people as well as to the tourist who come to see the Gorillas.

In order to begin this work, we travelled to Rwanda and to the Virunga Mountains to experience the Gorillas in their National Park home. We worked to the Rwandan Ministry of Tourism and local tourist business leaders to located a site that would be appropriate for development into an easily accessible attraction that would extend the visitors stay in Rwanda beyond the half day Gorilla trek.

We evaluated several sites, but quickly identified a perfect location, off the main road, 1 KM outside the town of Ruhengeri, with an unobstructed view of the Volcanoes. Additionally, the site is adjacent to the only intact forest preserve outside the Park which is being developed by a local architect into an Ecopark, with small lodging, trails and restaurant. The Discovery Center will fit into the development concept and take advantage of common needs for roadways and utilities to create synergy with Buhunga and give our visitors an added experience to explore the Park.

We were inspired by the local historic Huts of the tribal chiefs to create a truly authentic entry area that would welcome the visitors. This entry hall would serve additional functions as a lobby for the multi-purpose auditorium/classroom space. We further developed four exhibit galleries that would have natural light from clerestory windows and built from local stone, wood and clay tile roof. The Galleries focus on the life of Dian Fossey, Gorilla biology, Natural history and the research on-going in the Virungas. These galleries are linked with garden courtyards with local sculpture and additional interpretive features such as Dian's Camp, a 3 dimensional Volcano model as well as a kid's play area where the children can search for the Gorillas in a Bamboo maze while their parents can enjoy the view from a snack terrace.

This project was undertaken in joint venture with Duckett Design Group, Architects, Atlanta, and included 10 wonderful days in Rwanda with DFGFI staff to build consensus over the new facility.





Town of Cochrane, Ontario, Canada Polar Bear Conservation Habitat, 2004

Project Budget: \$4,000,000 Canadian
Client: Town of Cochrane, Ontario, Canada
Client Contact: Jean-Pierre Ouellette 705-272-4361
Dr. William Rapley, Toronto Zoo 416-392-5963

In January of 2002, the Town of Cochrane, Northern Ontario, Canada selected a design team consisting of ANO Architects, Ted Maranda and Ursa International to design a Polar Bear Sanctuary as a tourist attraction to enhance their offerings as well as create a place to house surplus Polar Bears from the region.

Not only did we create a place which exceeds the very rigorous Manitoba Standards for Polar Bear Housing, we created a unique destination along the Trans-Canadian Highway. Visitors during summer can cool off in a special pool adjacent to the Polar Bear's pool - offering endless enrichment opportunities for the Bears and a one-of-a-kind opportunity for the visitors! What we created in Cochrane is a "Swim with the Polar Bears" Experience. In the Winter, snowmobilers enter the region on extended trips through this Taiga Forest. Cochrane provides a destination and a welcome to those travelers, also, creating a year-round attraction in a very remote location.

The facility can house up to five Polar Bears, with two large (1 acre) habitats on view from a central viewing building as well as a large off-exhibit holding area adjacent to a modern animal management building. This project offers a long term commitment to creating a win-win situation for Polar Bears. More recently the facility fenced the 16 acre Hector Lake and have released the bears into that third habitat - and they love it!

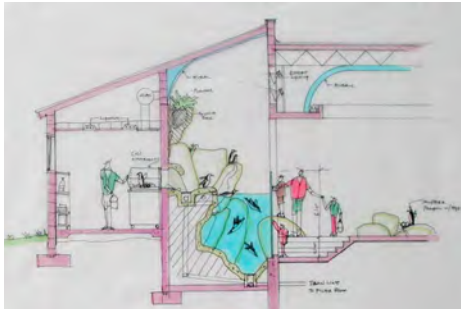
Mr. Lash was design lead for the consultant team, responsible for programming, conceptual site design and siting, holding building and animal management systems as well as exhibit design details. He was retained throughout the project to consult with the Architect during construction document, tender and construction phases. The project opened in August 2004, and the Lake Habitat in 2016.



Ursa International Project Brief



Penguin Plunge



Zoo Atlanta, Atlanta, Georgia KidZone Concept Planning, 2004

Budget: \$15.2 M planning budget

Client: Zoo Atlanta Inc. Atlanta, Georgia

Contact: Dr. Dwight Lawson, 404-624-5617

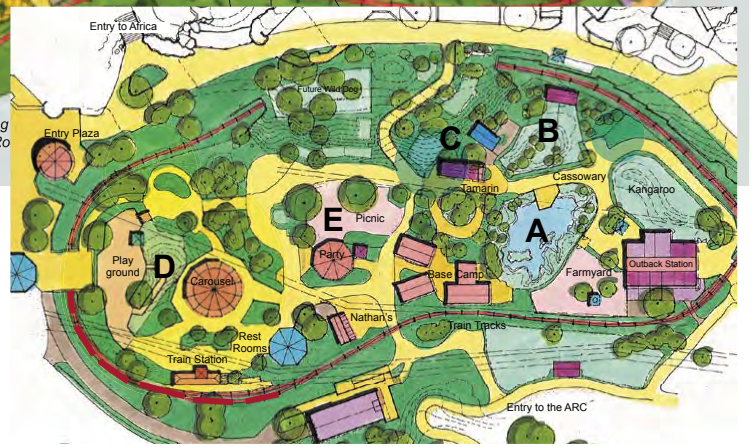
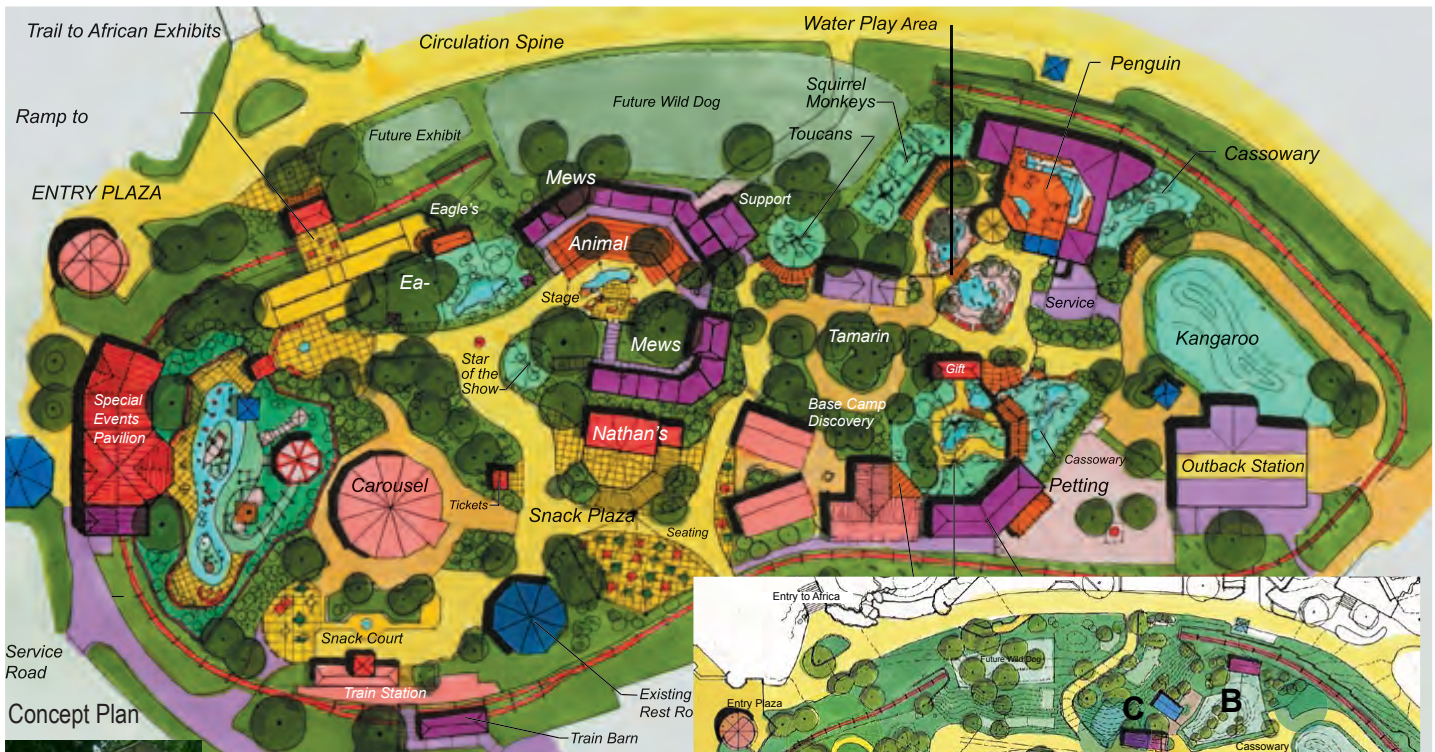
Steve Marshall (while at Zoo Atlanta) (915) 521-1850

Upon completion of the Tamarin Forest, the Zoo Atlanta Staff was asked by their donor, "What's next?" Apparently this was a difficult question, as there were lots of options, but they hadn't done a comprehensive plan within this "KidZone" area, beyond the Orkin Family area, to determine a consensus response.

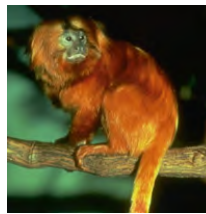
Ursa was asked to lead a concept planning process to answer the question with a definitive list. The Plan represents 4-5 workshop meetings with the staff to brainstorm and analyze options for further development. Goals and mission statements were established and a multi page "Wishlist" was documented. In the end, the plan provides five major exhibit Areas:

- KidZone Playground and Entry Area
- Australian Walkabout
- Wildlife Theater and Snack Bar
- South American Monkey Jungle and friends
- Penguin Plunge

Previous successful projects such as the Outback Station contact area and Train, Safe Playground and Endangered Species Carousel, were integrated into the new overall plan, and new elements were outlined. A new circulation system was designed, as well as a new entry. The Team recommended (unanimously) that the Penguin Plunge be advanced as "What's Next", but by this point, the Donor had moved on.



Ursa International Project Brief



Zoo Atlanta, Atlanta, Georgia Orkin Family Children's Zoo, 2003

Cost: \$1.2 M
Client: Zoo Atlanta Inc. Atlanta, Georgia
Contact: Bill Cooper, V.P. Facilities, 404•624•5617

This project represents the first phase of a multi-phase exhibit area devoted to the zoo's youngest audience. There is a Tented Camp area, "Base Camp Discovery" for overnights, Summer Camp and other educational programs. This is set in our South American tropical forest, "Brazilian Outpost", with free-ranging exhibit areas for the Tamarins, Sloth and Tamandua.

The children can assist in on-going Tamarin research projects to learn that caring for wildlife involves careful observations and data collection. The Tented Camp can sleep 90 children and 6 adults. A small outdoor classroom overlooks the "Wonderful Wetlands" exhibit. The Tamarins have a small holding building that contains a large indoor exhibit area for inclement weather.

Phase II included a big Australian Sheep barn, "Outback Station", with indoor exhibits and interactives, as well as space for Sheep, goats, kookaburra and kangaroos. The 5000 s.f. barnyard allows for free contact with the Sheep and Goats and activities to learn how to care for domestic wildlife. The complex includes a 2000 s.f. walk-through animal barn, 450 s.f. keeper service center, 5500 s.f. red kangaroo yard, and a hand-washing station.

"you bring a unique experiential perspective to the work; you don't just replicate what you see at every other Zoos...and when asked to deliver full products on half budgets, you always keep the experience intact...effectively managing multiple strong personalities, with a clear focus on animal health and the visitor experience."

Shelly Lakly, Ph.D.
Vice President Education and Conservation Programs
Zoo Atlanta



Future Water Play
Tamarin Holding
Tamarin Forest
Kangaroo Plains
Future Aviary
Outback Station
Petting yard
Tented Camp with
Outdoor classroom



Ursa International **Project Brief**
Brook Run Nature Park, Atlanta, GA.
Master Plan, 2003

Project Budget: \$32 million overall budget
Client: Dunwoody Preservation Trust, Inc.
Client Contact: Dave Purcell, 770-621-2340

In 1998, DeKalb County purchased Brook Run, a former hospital and nursing home for the mentally ill, from the state. In January 2001, a \$150,000 grant was awarded to the Dunwoody Preservation Trust by DeKalb County to develop this master plan for the 102-acre property and the EDAW team (including Ursa International) was awarded the contract.

An essential component of any community's quality of life is the opportunity for recreation and experiencing the outdoors. Brook Run offers 102 acres of existing infrastructure and buildings that can be transformed into a symbol for DeKalb County's vitality and character. The purpose of this master plan is to guide Brook Run in developing the property into a first class nature-oriented and educational facility. Like all plans, however, the master plan is only effective if it is used. It is critical that the plan be a living document that reflects and is able to adapt to discussions and decisions by policy-makers and community stakeholders. The master plan, although very specific in many aspects, must also be flexible in order to respond over time to community and financial needs. Some of the proposed directions can be implemented almost immediately; others may take many years. The master plan transforms the 102 acres of greenspace, vacant buildings, and paved streets into an urban oasis while focusing on education, nature, art, and recreation.

The specific goals of the master plan are to 1) create a signature community park with passive recreational and educational opportunities; 2) develop places for community interaction; 3) protect the environmental resources; and, 4) recommend financial resources.

Mr. Lash assisted EDAW and their team in participating in Community Outreach workshops, design team concept development, and production of the final plan and renderings.



- Nature Education Center
- Camp Brook Run Dorms
- Aviary Gardens
- Horticulture Center
- NatureTrail
- Stream Restoration
- Picnic shelters

The Arts

- Brook Run Theater
- Administrative Offices
- Veteran's Memorial
- Arts House
- The Great Lawn
- Nature Trails

Play !

- Children's Adventure Garden
- Skate Park
- Multi-use Court
- Picnic Meadows
- Nature Trails

Ursa International Project Brief



Stone Zoo, Stoneham, Massachusetts Treasures of the Sierra Madre, 2002

Construction Budget: \$3,000,000 USD

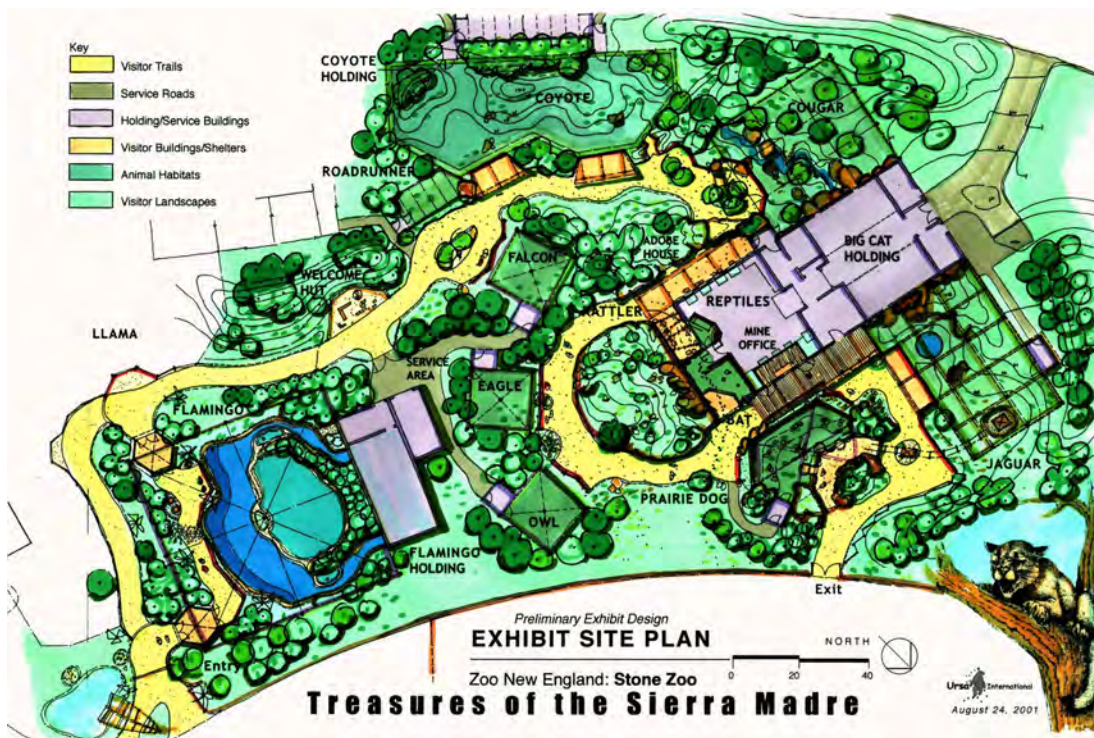
Client: Zoo New England

Client Contact: Marshall Judges, 617-989-3735

Ursa International teamed with Cemrock Landscape to provide Design/Build services for the Exhibit Design portion of a project at the Stone Zoo. The project had a conceptual design but lacked a cohesive look and feel. It was our task to coordinate the architects and engineers in an effort to provide comprehensive design services for the client.

The project depicts the high desert habitat of the Huichol Indian of Northern Mexico and the Miners as seen in the Movie "Treasures of the Sierra Madre". We were able to interpret the landscape, local culture, animal species and the mining industry.

Our Master Plan for the zone included a transect from the Caribbean Coast with Flamingos and other shore birds, into a hilly grasslands with roadrunner and coyote, into the high desert mountain habitats of the Cougar and three raptor enclosures. An abandoned adobe homestead provides niche habitats for small reptiles, amphibians and a special nocturnal exhibit for a Ring-tail Cat (Cacomistle). The trail continues into a Mining Camp with an 'mine shaft' with an exhibit for Vampire Bats and Fruit-eating Bats. Additional small mammals and Reptile enclosures are set in a "Mine office" re-creation with a prairie dog town nearby. The final exhibit depicts a Silver Mine with real mining equipment including a buckboard that provides a place where children get close-up views of Jaguar.



We were able to complete most of the Master Plan within the first phase. The Flamingo Aviary and Prairie Dog exhibit were never built, instead the zoo's llamas graze in the grasslands at the entry and the Mining Camp provides a unique special events area at the exit.

One of the successes of this project stems from the blending of a diverse interpretive and artifact package that relate to the animals habitats with the peoples of the region, both native and colonial. The other success is of course a great animal collection.

Ursa International Project Brief



North Carolina Zoo, Asheboro, North Carolina Kitara Forest Chimpanzee Reserve, 2001

Project Budget: \$2,500,000

Client: North Carolina Zoo, Asheboro, North Carolina

Client Contact: Dr. David Jones, Director 336-879-7101

The Kitara Forest Chimpanzee Reserve is a major renovation of the ground-breaking Chimp Exhibit at the North Carolina Zoo. This update seeks to improve both the chimps and visitor's behavior.

The existing physical configuration created a condition where visitors were able to exhibit dominating behavior over the chimps. This created a responsive behavior of rock throwing and insecure reactions from the chimp group. Expanding the visitor experience and viewing opportunities along with re-grading and expansion of the chimp vertical space are improvements which has transfer to improved behavioral responses from all user groups.

The project also includes a major renovation to the holding facility for both Chimps and Lions. Mr. Lash participated on the In-house programming and concept design team and was selected to work as the exhibit consultant with the local architectural team (TRP Architects) to develop complete construction documents.



Ursa International Project Brief



Rome Zoo, Rome, Italy Bioparco Master Plan, 2001 *Italian Brown Bear Habitat, 2000*

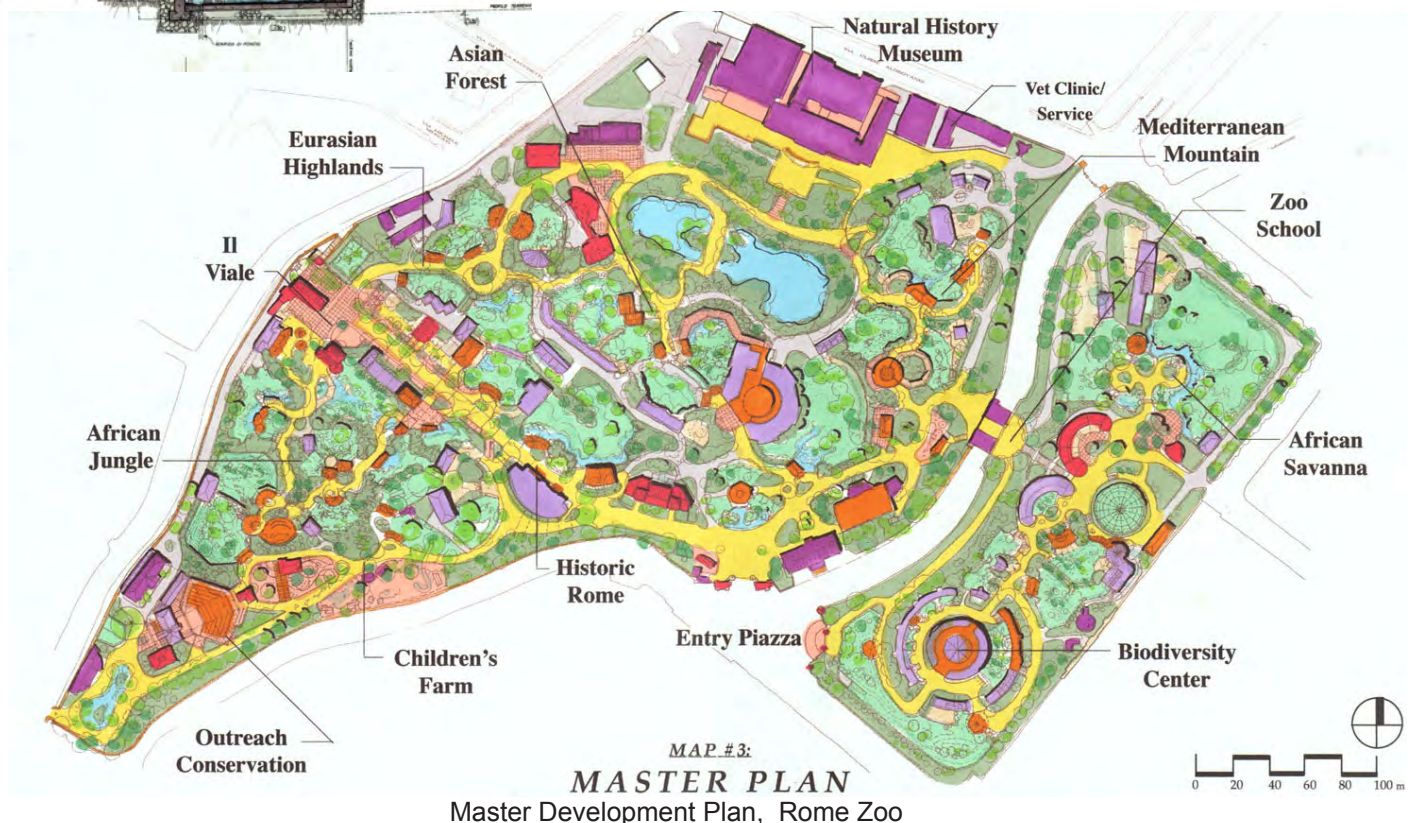
Client: Bioparco, S.p.a., Rome, Italy
Client contact: Giovani Costa, 39-06-360-8211



Ursa International was hired to coordinate the design of a new Master Plan for Rome Zoo as it went from municipal to private management. The Lash's facilitated the development of the plan along with Zoo management and staff, gaining approval by the City of Rome. The Plan and image sketches represent a new direction that is underway at Bioparco. This Redevelopment Plan was the first one in 80 years since the Zoo's original Designer, Hagenbeck laid out the Zoo in 1892. It transforms and enhances the historic park seeking to create more humane environments for the animal collection while preserving the important structures of the past. Additional exhibits include the African Jungle, Biodiversity Center, Eurasian Highlands, and African Savanna.

Opening in the fall of 2000, the first phase of this multi-phase plan; the "Mediterranean Mountain" Italian Brown Bear exhibit replaced 7 terrible bear enclosures with one major habitat. The new exhibit features underwater viewing, interpretive areas and open moat viewing of the 1600 m² landscaped habitat for the Italian brown bears. The adventure trail leads up Bear Mountain to a children's area for close-up encounters and special activities. A major new bear management building provides safe and flexible housing for the zoo's bear collection.

The Lash's were responsible for Programming, Conceptual Site Planning and Schematic Design for each built project, and coordinating with the local Italian Architect, Giacomo Bessio to complete the work.



Ursa International Project Brief



Dallas Zoo, Dallas, Texas Exxonmobile Tiger Exhibit, 1997

Cost: \$3.5 M + 1.0 M for Primate Row
Client: City of Dallas Parks Department, for construct.
Dallas Zoo Society, for design work
Contact: Rich Buickerood, Director 214-670-6826
Michael Meadows, CEO 214-670-6826

Exxonmobile Tiger Exhibit: Tigers of Southeast Asia is a 2 acre valley site featuring two habitats for Indo-Chinese and Sumatran Tigers, in a rotation concept. The site offers the zoo outstanding opportunities to devote focused attention on Tiger Conservation and Breeding of these endangered species. Our approach was to concentrate the major viewing from a Thai-themed viewing structure within the heavily forested "jungle" bowl, spanning the center of the tiger's habitat. The visitor journey along a meandering trail crossing streams with multiple views through bamboo groves and blinds. The trail provides chance encounters and discovery events to understand the behavior and situation of tigers in the wild. The dramatic peak of the experience places the visitors within the center of the Tiger Habitat. Ursa International won the commission after a mini-charrette competition. We were given three days to work with the zoo to develop a program and define a Concept Plan for the site. The design shifted some, but in the end, this is truly a house built for Tiger.



Ursa International Project Brief

Seneca Park Zoo, Rochester, N.Y.

Rocky Coast, 1995

Project Budget: \$8,500,000

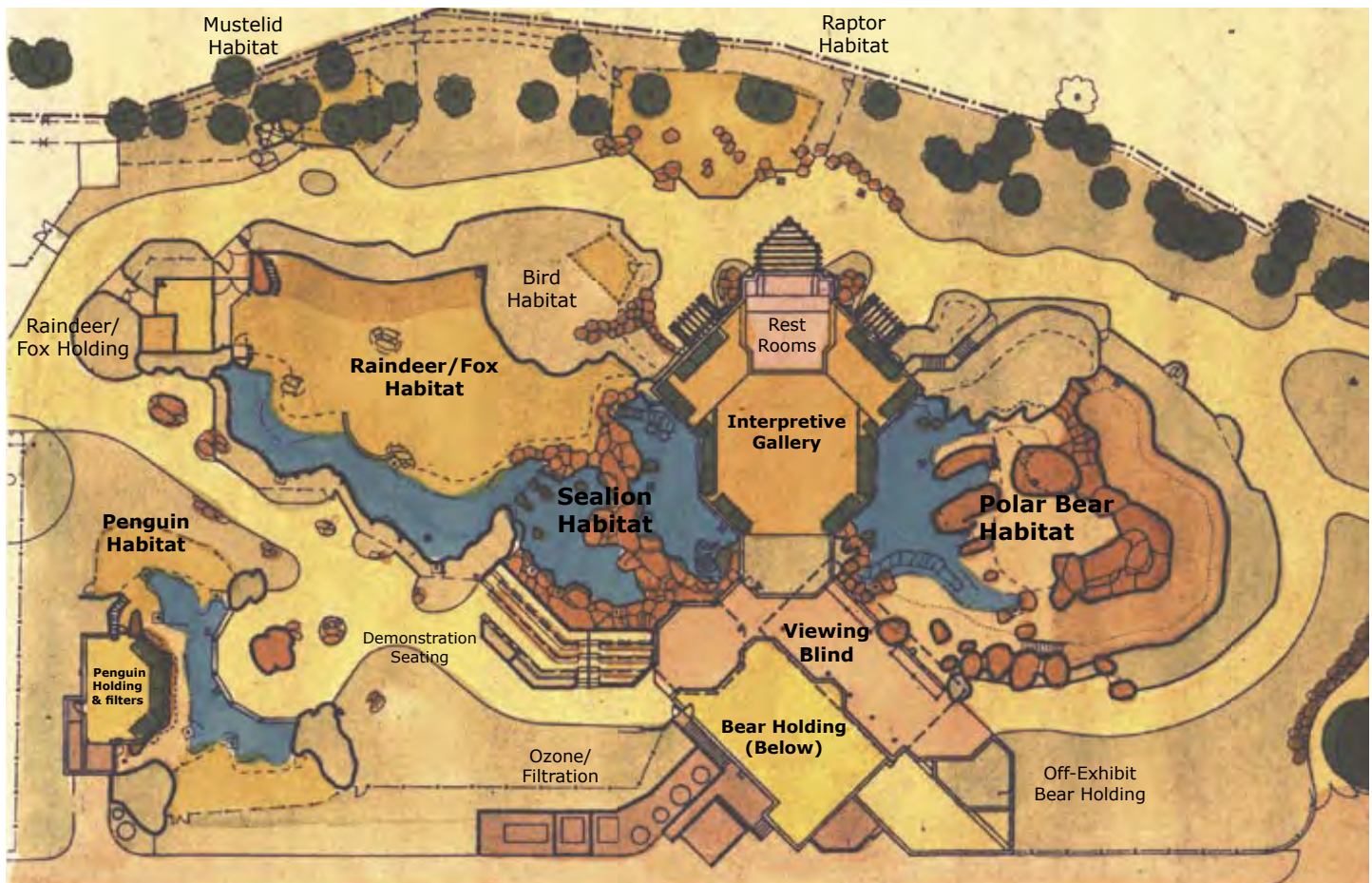
Client: Monroe County Parks Department

Client Contact: Ed Wainer (Retired), 716-274-4664

As the second project designed after the Master Plan's approval, Rocky Coast is a major advancement for the Seneca Park Zoo. This exhibit transforms 2.2 acres of chainlink paddocks into a landscape immersion exhibit replicating three rocky coastlines: Norway (for Seal, Sea Lion, Reindeer and Arctic Fox), South American Skeleton Coast (Black Footed Penguin) and Arctic Coast (Polar Bear).

The Rocky Coast exhibit features the latest technology in life support filtration systems for the aquatic environments (salt), and a major holding facility for these threatened species, with special consideration for nesting for Penguins, salt-resistant caging for the salt environments and polar bear maturity and off-exhibit management area. The visitor experience provides various viewing types including an amphitheater for Pinniped shows, underwater viewing for all species at the Underwater Interpretive Gallery, an explorer's cabin for upper level overlooks and a equal level view over a dry moat for the two main exhibits.

Mr. Lash's role included exhibit design and project management for CLRR during the design and bidding of this project and coordinating the activities of the multi-discipline design team. The project was completed in 1995.



Ursa International Project Brief



Woodland Park Zoo, Seattle, WA. Northern Trail, 1994

Cost: \$5.450,000 (excluding Landscape and Graphics)
Client: City of Seattle, Parks/Recreation Department
Client Contact: David Towne, 206-684-4880

The Northern Trail Exhibit is an 11 acre site featuring taiga, montane and tundra exhibits and interpretive sequences in two phases. The design of this exhibit utilized interactive workshops to integrate user programming and participation. The first phase completed in 1994, included exhibits and holding facilities for Kodiak Bear, River otter, mountain goat, marmot, wapiti, snowy owl, grey wolf, marten, porcupine, red fox, bald eagle and northern birds.

Other features include a Tundra Gallery which simulates an earth bermed "Winter House", Taiga Interpretive Gallery providing underwater viewing of the bears and otters and a tree-top walkway giving access to the mountain goat cliffs and eagle perch. The use of native plant material and sculptural elements integrate the total immersion experience for the visitor. Animal behavioral requirements are met by use of fish feeders for the aquatic environments and movable exhibit furniture.

Mr. Lash was the project manager for this project for CLRdesign starting in 1988 through completion, coordinating the efforts of a multi-disciplinary design team, including local Architecture, Engineering, Life Support as well as directing the Zoo's Landscape installation and Jolly Miller Rockwork fabrication. Northern Trail received the American Zoological Association "Exhibit Award" in 1995.



Ursa International Project Brief



Zoo Atlanta, Atlanta, Georgia Masai Mara Exhibit, 1989

Cost: \$6,500,000 Bond/Privatey Supported Projects

Client: Zoo Atlanta, Atlanta, Georgia

Client Contact: Dr. Terry Maple, Director Emeritus 561-533-0887

Zoo Atlanta Redevelopment Master Plan was completed in 1986 and resulted in the development of a three phase plan funded by a \$17 million city-supported bond and an additional \$8 million privately-support capital campaign. Phase III (1989), the African Savanna Masai Mara exhibits continues the strong landscape theme of the two prior phases. This major exhibit features mixed exhibits for giraffe, zebra, ostrich, antelope and African birds as well as habitats for African Lion, Black Rhino, and African Elephant in a safari-style immersion exhibit. Integrated visitor services include a themed "Swahili Market" with thatched restrooms, snack bar with dining terrace overlooking the mixed species habitat, special events Rhino tent and an Elder's tree theater for storytelling, african dancing and drumming.

The Masai Mara" Exhibits achieved American Zoological Association "Significant Achievement Awards" in 1989 and have proven fifteen years of excellence for breeding and exhibiting endangered species.

Mr. and Mrs. Lash continue to be involved with Zoo Atlanta completing design projects on a yearly basis to continue to enhance the visitor experience.



Ursa International Project Brief



Zoo Atlanta, Atlanta, Georgia Lion Exhibit, Masai Mara, 1989

Project Budget: \$ 1.6M USD

Client: Zoo Atlanta

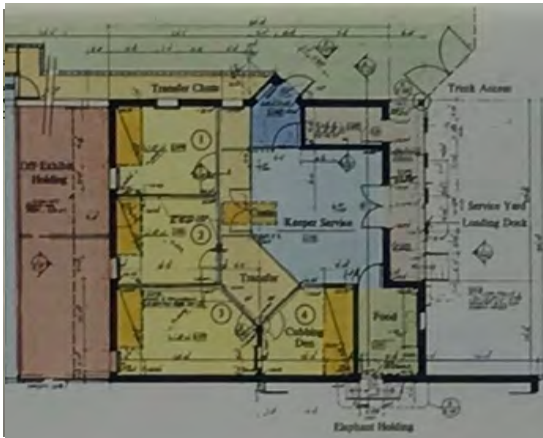
Client Contact: Dr. Terry Maple, 561-533-0887

The final part of the three-phase Zoo Atlanta Redevelopment Plan was the 6 acre Masai Mara Exhibit. It has a wonderful lion habitat set across from the mixed Hoofstock Savanna habitat, creating a classic, predator/Prey exhibit relationship. Together with a Black Rhino and Elephant Habitats and holding buildings, the Masai Mara Exhibit is a Walking Safari into Africa. Narrow trails, tall grasses and "Acacia" trees immerse the visitor into that landscape ends at the gateway to West African themed crossroads, "Swahili Market" with a Cafe and outdoor eating area, Restrooms and the Elder's Tree theater for Storytelling, Animal encounters and music and Dance.



The Lion habitat is open, with a moated view along the front, a glass view blind for close-up viewing through a "thornbush" thicket. The back and remaining sides are either moated or 5M walls allow for extended vegetated views beyond the exhibit and not at other buildings.

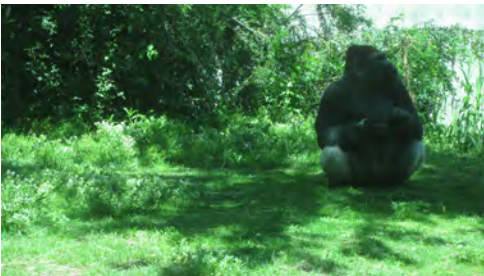
In the 1,600 sf (150 m2) Lion Holding building, provisions were made for four adult lions to be exhibited and managed. The four, interconnected, climate-controlled stalls has a transfer chute along the front that provides access to the exhibit. Two enclosed outdoor holding yards are accessible from the interior stalls to give safe outdoor access 24/7. A cubbing den is isolated from the other stalls to safely birth and raise cubs. Transfer chutes and outdoor holding areas allow the keepers to transfer the Lion with mobile cages on a regular basis to promote ease of access for medical procedures.



The Masai Mara" Exhibits achieved the Association of Zoos and Aquariums "Significant Achievement Awards" in 1989 and has had over thirty years of excellence in breeding and exhibiting endangered species of all variety. Nevin was the Project Manager/Landscape Architect for CLRR Inc. and Dr. Lash was the Zoo Biologist for Dr. Maple throughout the entire redevelopment. They continue to be involved with Zoo Atlanta as Ursa International, completing design and construction projects on an almost, yearly basis that continue to enhance the visitor experience and add impact to the Zoo Atlanta brand.



Ursa International Project Brief



Denver Zoo, Denver Colorado **Primate Panorama, 1996**

Cost: \$12,500,000 two phase budget
Client: Denver Zoo, Denver, Colorado
Client: Clayton Frieheit, Ex. Director



Primate Panorama, is an 7-acre site featuring a wide range of primate species in outdoor habitats, interior day rooms and exhibits and interpretive sequences in two phases. The design of this exhibit utilized interactive workshops with all staff levels, to integrate user programming and participation. Nevin worked with Gary Lee to design this complex with local architectural team coordination and Clayton Frieheit, while with CLRR, yet didn't get to participate with the Construction phase services.

The first two phases completed in 1996-97, included exhibits and holding facilities for Gorillas, Orangs, Mandrills, Gibbon, Guenon, Macaque, tropical Birds and smaller species in the Emerald Forest building with interior exhibits for Sako, Titi, Tamarins, Marmosets, Lemurs etc. See the Zoo's Visitor Map above to see the scope of the project.

We returned after 20 years to see what became of that expansive dream, concocted in the heads of Clayton Frieheit, and Gary Lee. I was lucky to be around at the time to pick up all the pieces and put this project together with the help of lots of talented individuals and companies.

20 years later, and the place looks great! It's a forest for Primates, created by Zoo Designers, but built and maintained by the Zoo. The photos were taken on a sunny day in Denver, 2014.



Ursa International Project Brief



Zoo Atlanta, Atlanta, Georgia Ford African Tropical Rainforest 1986

Project Cost: \$7,000,000 Bond/Privately Supported Projects
Client: Zoo Atlanta, Atlanta, Georgia
Client Contact: Dr. Terry Maple, Director Emeritus 561-533-0887



Zoo Atlanta is a multi phase redevelopment of a historic city park into a 21st century Zoological Park. The Lash's have served on both owner and designer teams to plan the implementation of the new Zoo Atlanta. Exhibits included the African Savanna "Masai Mara", West African "Ford African Rainforest" and Asian Tropical Forest of Ketambe. Additional projects included many visitor plazas and service outlets integrated into the themed development on this 40 acre site.

The innovative Gorilla Exhibit provides four outdoor exhibit habitats for gorillas living in natural groupings with flexible holding for a growing collection of 20-30 individuals.



Both, the Ford African Rainforest and Masai Mara Exhibit received the Significant Achievement Exhibit Award from the AZA in 1988, and 1989. Nevin's role included project management and exhibit design for CLRR during the entire Zoo Atlanta Redevelopment; Gail was Zoo Biologist responsible for coordination with all zoo staff.



Ursa International Project Brief

Brookfield Zoo, Chicago Illinois Habitat Africa! 1993

Project Cost: \$8,000,000

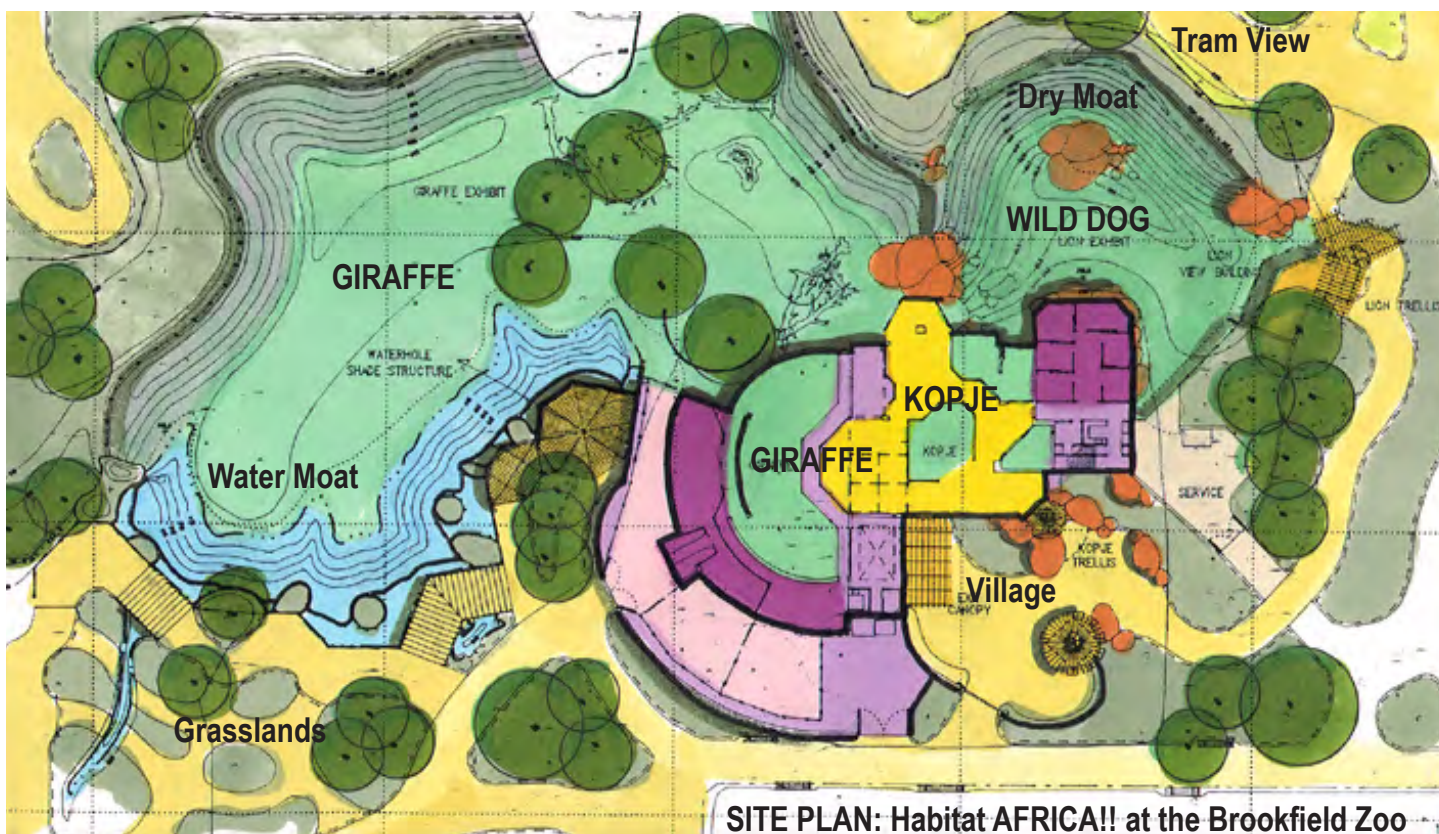
Client: Zoological Society Project

Client Contact: Dr. Georgia Rabb (deceased)

Habitat Africa! was the first project in CLR's Master Plan for the Northwest quadrant of the Brookfield Zoo for their African collection. It included the renovation of the Existing Giraffe Barn into a themed, interior free-flighted kopje habitat with klipstranger, mongoose, birds and reptiles, a large addition for interior giraffe exhibit and holding attached to the walk-through Kope, Close-up Lion (or later Wild Dog) viewing as well as an outdoor 33,000 sf, water moated exhibit for Giraffe and Zebra, and a 7,000 sf, dry moated exhibit for Lion (later changed to Wild Dog) with a second addition for Lion Holding and service areas.

There are several exterior visitor areas including a close-up themed viewing blind at Lion, a African Village entry area for special events and demonstrations and a series of open viewing areas in a grassland landscape with water features, shade structures and marshes with bridges.

Nevin's role included project management and exhibit design with Jon Coe and Gary Lee, during the design and construction of the entire project.





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