

## Profile

PJA Architects + Landscape Architects, p.s., was formed with the idea that a small, well-focused team of architects and designers could provide direct, hands-on service to clients. Emphasizing clear communication between architect and client, PJA has been able to work on projects throughout the world while maintaining the highest quality of client services at every level.

PJA Architects + Landscape Architects, p.s., provides a broad scope of design and management services to the public and to private sectors while delivering projects consistently on time and within budget. PJA has developed a team of professionals whose goal is to establish innovative trends in zoological and botanical planning and design, theme parks, wildlife sanctuaries, and in the interpretation of nature and culture. Creativity, innovation, and design excellence are characteristic of work produced by the firm.

Our principals and staff professionals will work closely with each client to understand and meet the individual needs of every project, translating those needs into aesthetic, functional, cost effective design solutions.

We believe that a clear understanding of the relationship between nature and man is critical to maintaining a quality of life for all, as well as for the proper stewardship of our planet. By providing a wide range of design services, we can make a meaningful and hopefully unique contribution to our natural, man-made, and social environment.

## Services

Programming  
Master Planning  
Concept Design

Schematic Design  
Design Development  
Construction Documentation

Bidding and Negotiation  
Construction Observation  
Post-Construction Services  
Consultant Coordination

Additional Services:  
Interpretive Planning  
Graphic Design  
Ecotourism Planning  
Conservation Planning  
LEED™ Consulting

# The Firm

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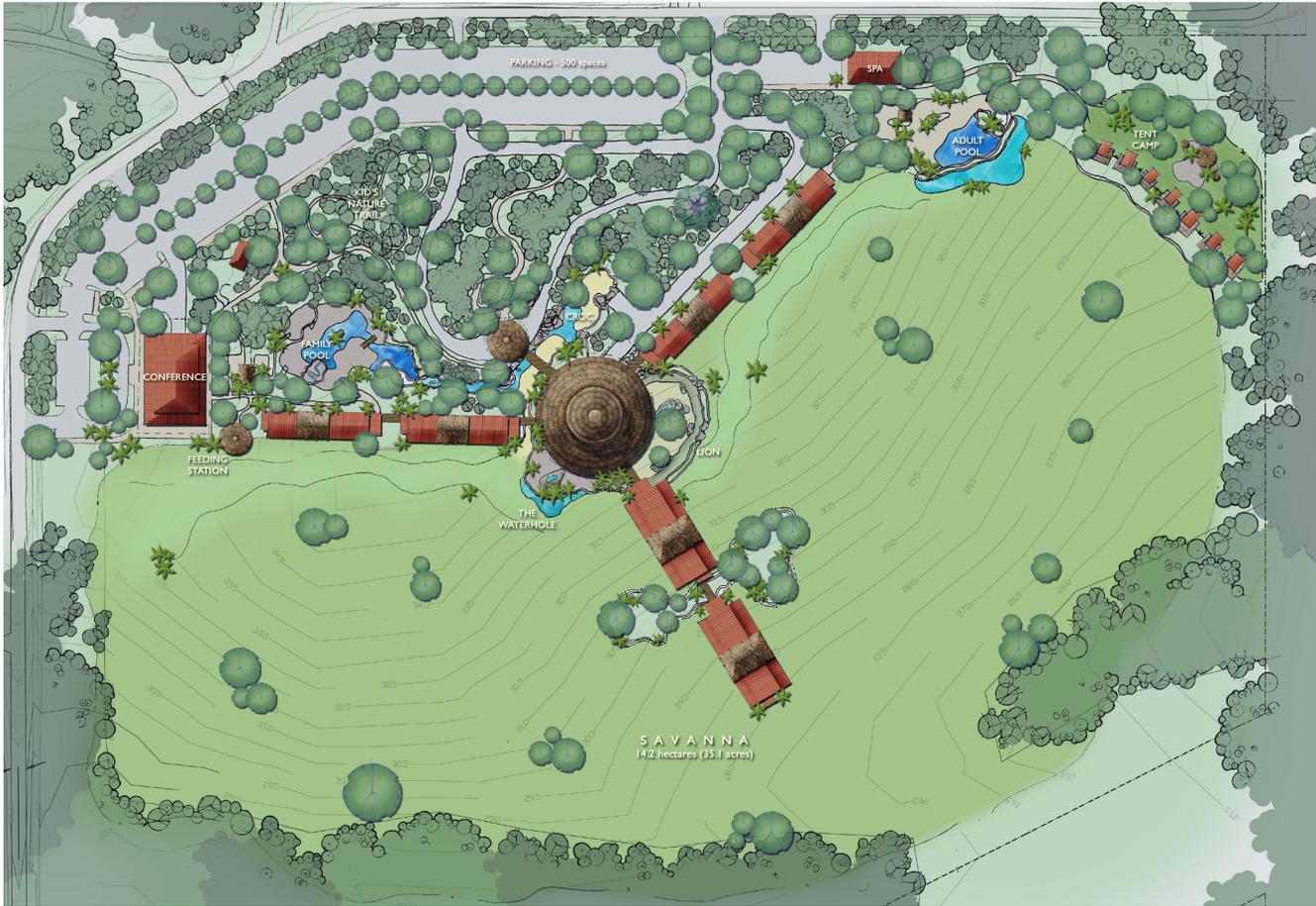
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# Australia Zoo Hotel



Australia Zoo, Beerwah, Australia

The Australia Zoo, Home of the Crocodile Hunter (Steve Erwin) is in the midst of significant expansion and the new hotel will be part of the new amenities and experiences being offered to visitors. The 350 room hotel will offer guests a variety of family friendly accommodations, wild animal viewing, and a conference center. Designed to be a destination resort hotel, the facilities include two swimming pools, a day spa, multiple dining options, and thematic rooms.

The main hotel is inspired by the grand safari lodges of Africa with signature thatch roofs, grand lobby, and rooms with views of the savanna animals. Guest room layouts are flexible to accommodate all sizes of families and budgets.

All rooms include extensive outdoor decks which afford excellent views of the animals on the savanna. In addition to the traditional hotel rooms, adventurous guests are offered overnight accommodations in a luxury tent camp with exclusive viewing, dining, and lounging opportunities.

For the children, a themed play area, storybook nature walk, and interactive swimming pool provides fun entertainment that is consistent with the animal theme of the resort. The hotel is located adjacent to the zoo and will provide shuttle service for guests. A world class conference center accommodates groups of 50 to 500 people and includes catering services.

**Australia Zoo Hotel**  
Australia Zoo  
Beerwah, Australia  
2008



architects landscape architects, p.s.



# Perilous Playground

This play area will excite and amuse children with encounters of dangerous animals from Australia and Africa.

After entering through a roaring lion head, visitors are confronted with a deadly copperhead snake protecting its prey and a funnel web spider preparing to attack. Climbing the web to an elevated deck above, children get a thrill from the huge black spider looming overhead.

**Playground**  
**Australia Zoo**  
**Beerwah, Australia**  
**2008**

From the deck, children can swing from vines of the old tree or climb to the top of the tree house to look out over the playground and neighboring trees.

Crossing a wobbly rope bridge over a pond with snapping crocodiles, visitors explore a labyrinth of mud houses modeled after the sophisticated mud structures of the Dogon people in West Africa. Jewel case enclosures are molded into the rock wall for children to discover live animals that pack a deadly sting like scorpions, spiders and snakes.



Australia Zoo,  
Beerwah, Australia



# Batumi Aquarium Competition



In January 2010, PJA was invited to participate in a competition for a new Aquarium in Batumi, Georgia. At first, the client wanted to renovate and restore an old, existing aquarium but later decided to build a new aquarium in better a location with a distinctive architectural character.

PJA wanted to focus its inspiration on something that was part of Batumi. Batumi is a seaside city on the Black Sea coast located on the site of the ancient Greek colony in Colchis called Bathus or Bathys - derived from the Greek phrase bathus limen or bathys limin meaning "deep harbor". This meaning, along with the origin of aquarium, which combines the Latin root aqua, meaning water, with the suffix -arium, meaning "a place to relate to", led PJA to think about the most basic of the elements: WATER. PJA created a contemporary building that simulates the rhythm of waves and creates the feeling of water undulating up and down. The building's shape is reminiscent of the stingray - a fish that represents



the oscillation of water with its movements and rhythm. The flattened bodies of stingrays allow them to effectively fly through their environment. This enabled us to create an entire world beneath its wings.

The stingray's family includes species found in marine waters, as well as species entirely restricted to fresh water, which makes this aquatic animal a good representation for both salt water and fresh water exhibits.

**Batumi Aquarium Competition  
Batumi, Georgia  
2010**



Batumi Aquarium, Georgia

# Hugh Kaul Children's Zoo



PJA were the animal exhibit architects for this project, a children's venue that showcases wildlife of rural and wild Alabama. An explorer's path leads through Grandma's backyard revealing animals in their native habitats. Children get an underwater fish-eye's view of otters and beavers in a stream, meet skunks and opossums, spiders and insects, native snakes, eagles and even explore a dino dig. The barn houses domestic animals like chickens and goats. And the goats will take the children for a ride in the goat pull too!

Around 20 animals are on rotating or permanent display in the area. Cool relief for hot summer days is brought by the interactive fountains at the water playground.

The goal of the exhibit is to make children aware of the amazing fauna and flora that surrounds them everyday and to equip them with the means to explore and preserve by forging relations to their environment.

**Hugh Kaul Children's Zoo**  
**Birmingham Zoo**  
**Birmingham, Alabama**  
**2001-2002**  
**\$ 4 Million**



Birmingham Zoo, AL

# Buffalo Zoo, Buffalo, NY

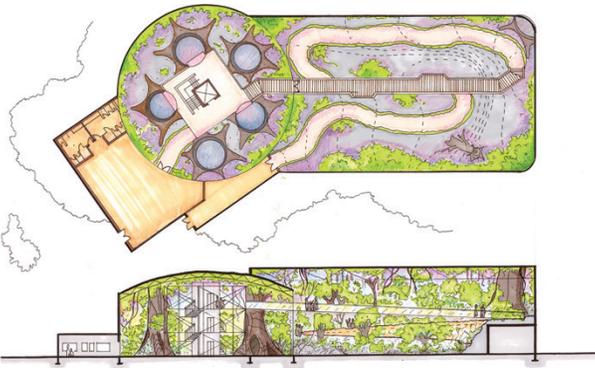


Over the next 10 years, phased implementation of the Master Plan will bring about major new exhibits, animal enclosures, and facilities to this compact 23.5 acre Delaware Park footprint. Dramatic renovation and improvements to the Zoo's historic structures and existing buildings are also scheduled to take place.

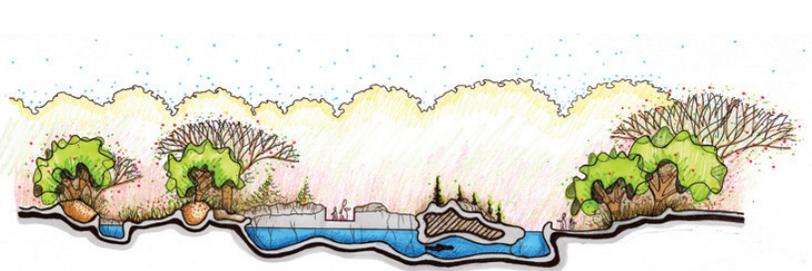
**Master Plan  
Buffalo Zoo  
Buffalo, New York  
2005**

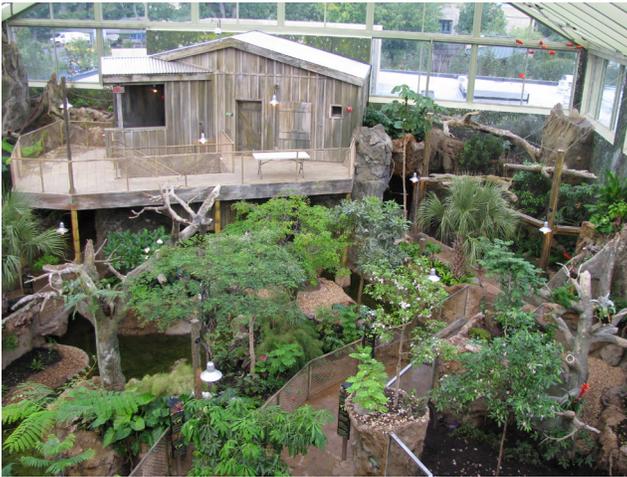


# Master Plan



The \$70 million Master Plan incorporates an interpretive theme of water and its relationship to Buffalo, Erie County and the Great Lakes. It includes a new Entry Plaza adjacent to the existing parking lot with a Sea Lion and River Otter Exhibit. The entry will be transformed into a "Dining-with-the-Animals" Experience with direct views into the new Asian River and Highlands Exhibits. The South American Rainforest Building will house a year-round tropical forest. Other exhibits include the African Watering Hole, the Arctic Edge Polar Bear Exhibit, and Wonders of Water, an interactive children's exhibit.





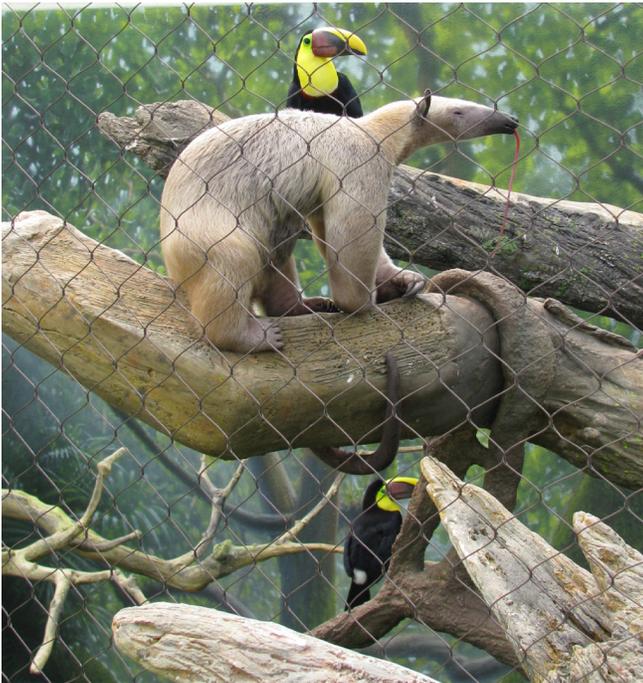
The most significant project to date in the long-term reconstruction of Buffalo Zoo has been realized with the opening of the new \$16-million, 18,000 square foot Rainforest Falls exhibit. The indoor exhibits are sheltered within a technologically-advanced building shell, designed by Foit-Albert Associates. The transparent, energy efficient roof employs an innovative technology used perhaps for the first time in a North American zoo. High-tech membrane “pillows” insulate the building, while allowing maximum UV penetration to benefit plants, mammals, and the reptiles on exhibit.

The focal point of the exhibit space is a naturalistic rockwork plateau, which simulates the isolated “tepuis” of Venezuela. A 25-foot high thundering waterfall evokes Angel Falls, the world’s highest free-falling waterfall on Mt. Auyantepui. Caves and crevices in

Buffalo Zoo, Buffalo, NY



# Rainforest Falls



the eroded granite plateau reveal glass-fronted exhibits of vampire bats, anacondas, and piranhas. Along the twisting pathway, tarantulas, poison dart frogs, and other small animals await discovery in jewel-case exhibits that are cleverly integrated into artificial tree trunks, stumps, and log jams.

A small collection of carnivorous plants highlight some of the unique botanical wonders of this isolated habitat.

At the foot of the plateau, a meandering river leads visitors to a mixed-species exhibit of dwarf caiman and capybara that inhabit an open pool. Individual netted exhibits display ocelots, monkeys, tortoises, and anteaters. The expansive interior space is in fact a free-flight aviary animated by scarlet ibis, spoonbills, mot mots, and other tropical birds.

**M&T Bank -  
Rainforest Falls Building  
Buffalo Zoo  
Buffalo, New York  
2004 to 2008  
\$16 Million**



The Sea Lion and Otter Exhibit will be the first exhibit that visitors encounter at the Buffalo Zoo after implementation of the new Master Plan, which PJA developed.

The sea lions are presented in a dramatic rockwork pool that is bordered by an open amphitheater. The theater can seat up to 250 visitors for educational shows or just to observe the behavior of the animals in comfort.



# Sea Lions and Otters



Buffalo Zoo, Buffalo, NY

In addition to underwater viewing opportunities, the visitors are given the unique possibility to 'enter' the exhibit: an Island in the center of the pool is accessible to the public by way of a rugged bridge.

The water quality of the new salt water pool will be maintained by state-of-the-art bio filters.

The Otter Exhibit emulates a stream and waterfall in upstate New York. Included in the Master Plan Package was also a concept design for a new Polar Bear Exhibit.

**Sea Lion and Otter Exhibits**  
**Buffalo Zoo**  
**Buffalo, New York**  
**2002 to 2005**  
**\$ 5.1 Million**



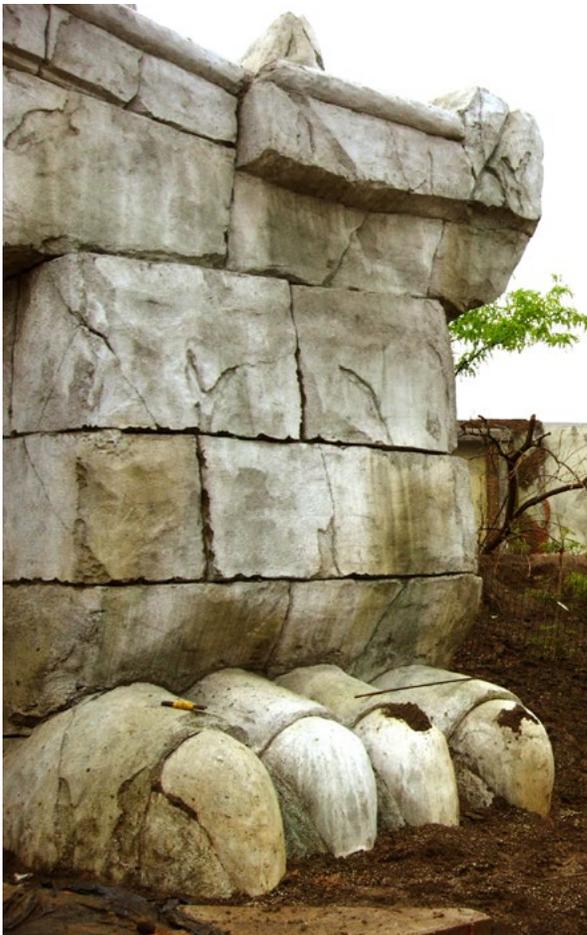
# Columbus, OH

The exhibit complex renovates existing facilities and continues the thematic and highly interpretive philosophy implemented in the Islands and Australia exhibits completed in 2003/2004.

The exhibits are designed as a trek through the different habitats of Asia. Natural and cultural variety is highlighted through plantings, geology, and the architecture of each region. The Malayan sun bear forages in a bamboo forest while a red panda climbs among dense evergreen foliage of the temperate rainforest. The walk-through pheasant aviary includes typical Chinese garden pavilions. Markor are viewed in a high, stark landscape of sharp rock pinnacles and the Siberian tiger is seen from a rustic stone and log shelter typical of the north.

Visitors enter the experience through a giant, semi-ruined stone-tiger gateway and walk past ancient stone walls inhabited by a group of Langurs.

# Asia Quest



# Columbus Zoo,

They are introduced to the "Quest" in a simulated urban center reminiscent of Kathmandu. In this interior experience, visitors will also view Langurs and bats and can preview their journey on a three-dimensional map that is the focal point of the indoor plaza.

The building includes a market square where interactive, interpretive exhibits provide visitors with information about wildlife conservation and the varied cultures of Asia that they are about to experience.



The exhibit concept takes visitors on a journey across the island continent and introduces them to the many animal wonders on the mainland and the tropical islands just off the north coast of Australia. The exhibit is presented as a complex of outback buildings that have been converted to house a small roadside collection of indigenous animal species. Visitors begin their adventure at Bob & Evelyn's Roadhouse, a typical Australian general store serving food and drinks, hardware, hiking gear, and assorted supplies for travelers.

Columbus Zoo

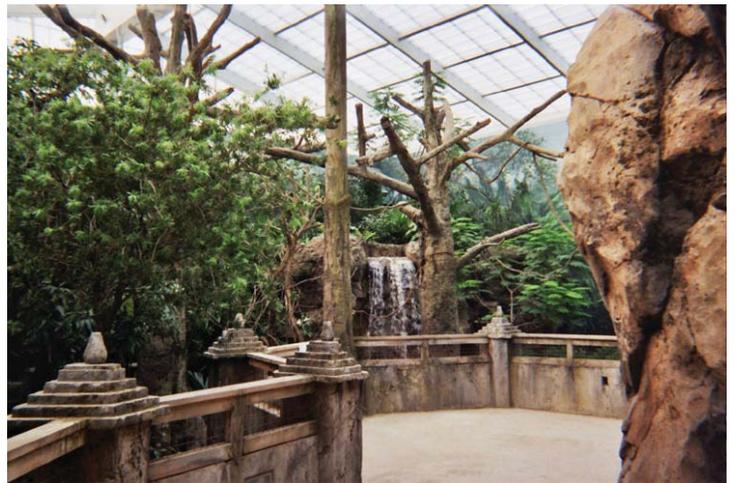
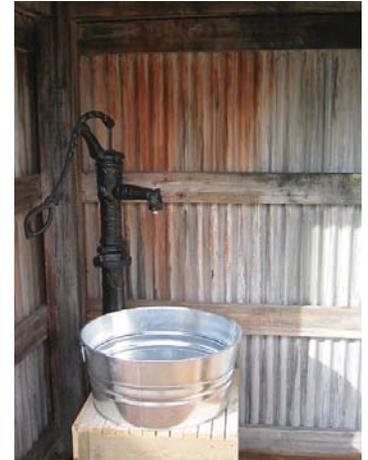


# Australia

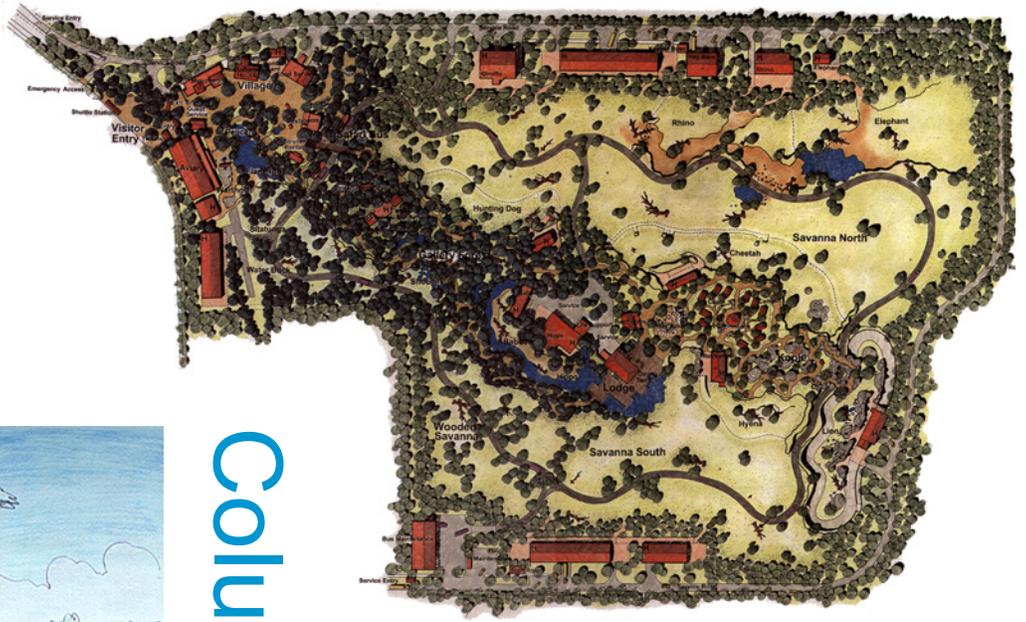
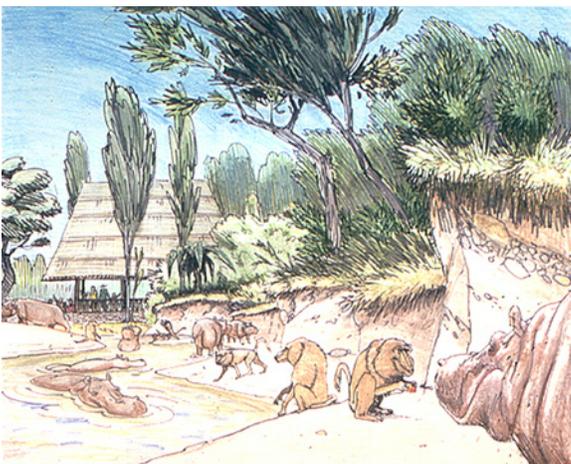
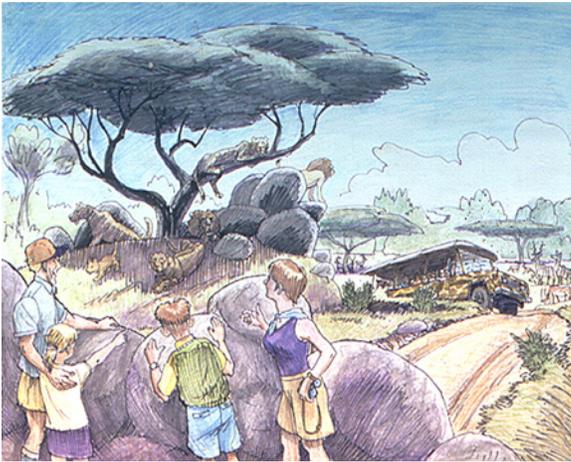
In the backyard Bob and Evelyn have converted their porch to create an exhibit of nocturnal species that include Bats, Kiwi, Prevost Squirrels, Tree Kangaroo, and Shrews. They have meshed over their backyard to create a tropical aviary full of colorful birds from the islands, an attractive water-fall, a ruin temple wall, and Asian artifacts collected on their travels abroad. Outdoor exhibits include Koala viewing, a free-range Kangaroo walk-through exhibit, and an old greenhouse that has been converted into an aviary where visitors can feed colorful free-flight Lorikeets.

Columbus, OH

**Australia**  
**Columbus Zoo**  
**Columbus, Ohio**  
**2000 to 2004**  
**\$ 6 Million**



# East



Columbus Zoo, Columbus, OH

# African Plains

Adjacent to the existing zoo, the East Africa Plains project includes 65 acres of simulated East African habitats. A visitor's journey begins in a village overlooking a small lake with flamingos and pelicans. Warthogs burrow in an abandoned airstrip. In the village guests pass through the Customs House where they receive a passport. From the village, visitors embark on a bus safari through wooded and grassy savannas and kopje habitats. There is also a walking path that leads through a gallery forest to the lodge, serving refreshments. Rested visitors can walk from the lodge to the kopje and interpretive playground.

**East African Plains Master Plan**  
**Columbus Zoo**  
**Columbus, Ohio**  
**1998**  
**\$ 80 Million**

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**pja**



Columbus Zoo, Columbus, OH

# Habitat Hollow



Habitat Hollow is a fun, interactive learning experience that introduces kids to the concept of habitat with its four main elements: Food, Water, Shelter, and Space.

Project Goal: Build awareness in children and adults to help them make informed choices in order to preserve habitats for wildlife and save our own environment. Around the Farm House, Barn, and Backyard three North American habitats are showcased: Prairies, Temperate Forests and Wetlands.

PJA's involvement included conception of the interpretive storyline and design of the structures and outdoor exhibits. A number of green building technologies and materials were used in the construction of the "farm house" that houses the interactive interpretive exhibits. The insulation and wall boards were experimental recycled panels, low flow toilets and urinals were used, as well as recycled plastic products and sustainable harvested lumber.

The project opened on Earth Day 2002.



**Habitat Hollow  
Columbus Zoo  
Columbus, Ohio  
1999 to 2001  
\$ - n/a**



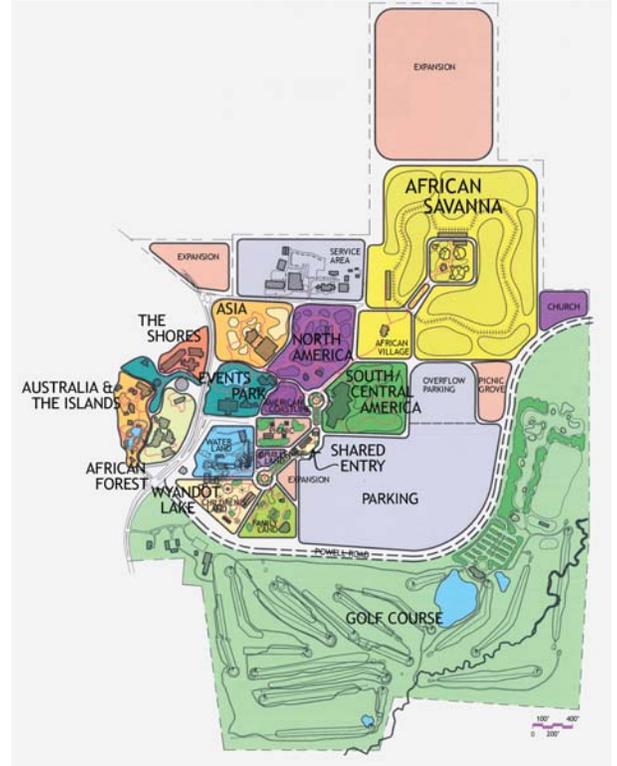


The master plan for the Columbus Zoo incorporates the plans for the East African Plains expansion and the adjacent water park into a comprehensive plan that includes a new entry complex, new live-animal exhibits, expanded parking and picnic facilities, and thematic concepts for the expansion of the existing water park.

The new park will be a multi-day destination and will maintain the zoo's reputation for world-class animal exhibits. It will provide the residents of central Ohio with high quality family fun. Bio-geographical animal precincts will include the Arctic Circle, South America and Antarctica, African Plains and the rehabilitation of the North America and Coastal America precincts.

Tropical American animals and plants will be exhibited in a large, climate controlled conservatory, and Arctic animals will be exhibited in large, immersive exhibits which replicate

# Columbus Zoo, Columbus, OH



their natural habitat and are visitor-friendly even during winter months. Adventure and exploration of distant lands is the theme that will guide zoo exhibit interpretation, and similar themes will be incorporated into the rides, games and entertainment venues of the theme park component.

**Long Range Plan  
Columbus Zoo  
Columbus, Ohio  
2004**

# Master Plan



Polar Frontier simulates an abandoned mining building set in the Alaskan wilderness. Sitting at the edge of the Arctic Circle, wind swept conifer forests meet the vast and stark arctic tundra. This extreme environment is home to polar bears, brown bears and Arctic fox. All, to an extent, share overlapping territories where competition for food is fierce and demanding.

The project features a 1.32 acre polar bear habitat with a 167,000 gallon saltwater pool. Spectacular underwater views into this pool are afforded with a 30 foot long acrylic 'J' window. The brown bear habitat, at almost an acre, includes a 42,000 gallon freshwater pool stocked with trout. The Arctic fox habitat represents a mining shed that the foxes now use as a den. In addition to these habitats, the project includes a children's activity zone, a new food and beverage facility, and an interpretive center that is re-purposed from an existing church on the site. Here, issues relating to global warming and habitat conservation are interpreted.



**Polar Frontier**  
**Columbus Zoo**  
**Columbus, Ohio**  
**2008-2010**  
**\$19 Million**  
**AZA 2011 Top Honor Award**



Columbus Zoo, Columbus, OH

# Polar Frontier



Columbus, OH



# The Islands

Columbus Zoo



The Islands opened to great visitor response in Spring, 2003. The exhibit takes the visitor on a journey to discover the animals and culture of Southeast Asia. Guests have the choice of a walking tour or a river ride to experience this highly immersive exhibit.

On the islands, the visitors encounter small-clawed otters, gibbons, komodo dragons, and the signature species orangutans. The orangutan exhibit features an enrichment device that allows the apes to activate a spray nozzle, cooling the guests on the boat ride.

**The Islands**  
**Columbus Zoo**  
**Columbus, Ohio**  
**2000 to 2003**  
**\$ 8 Million**

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# African Savanna

Dallas Zoo, Dallas, TX

The new African Savanna exhibits at the Dallas Zoo expand the zoo into a previously undeveloped ten acre property that is located adjacent to the existing African Forest exhibits at the zoo. The project focuses on landscape immersion to simulate a trip to the savanna. Species on exhibit include elephant, giraffe, zebra, lion, and warthog. The new five acre elephant habitat will house four cow elephants and a separate one acre expansion area that may be developed for bulls in the future. The project includes waterholes, rock formations, a children's water play zone, viewing amphitheater, and a climate controlled day lodge with visitor service facilities and classrooms. All water systems will be re-circulated and treated to current state of the art standards, and plant selections will feature drought tolerant species. The new exhibits are contiguous to the existing African Village and will expand upon the authentic character of the architecture, the geology, and the landscapes of Africa.

**African Savanna**  
**Dallas Zoo**  
**Dallas, Texas**  
**2010**  
**\$ 24 Million**





# New Doha Zoo

PJA was part of an international, multi-disciplinary team selected to design a new, state-of-the-arts zoo for the State of Qatar. As the lead designers for all animal-related facilities, including exhibits, back-of-house holding, veterinary, commissary, and quarantine, PJA played a major role in the overall design of the park. Pat Janikowski was also given the role as Co-Concept Guardian, whose task was to ensure that the main concept of the park was maintained as the team took the design from Concept through Construction Documents. The New Doha Zoo is divided into different Safari adventures. The Driving Safari, will allow guests to



**New Doha Zoo  
Doha, Qatar  
2012 - Present**



experience wildlife from around the world from their personal vehicle or if they choose, from a themed, zoo safari vehicle. The driving adventure will take guests through African, Asian, and South American habitats. Guests will also have the option to experience these same habitats by walking. Three separate adventures await them in the African Walking Safari, Asian Walking Safari, and South American Rainforest/Cenote Walking Safari. The safaris were designed to give the guests unique and immersive experiences,

separate from that of the Driving Safari. PJA also developed a separate River Ride where guests move from tropical jungle to an underground river. A one-of a-kind viewing opportunity for guests, the River Ride will provide a realistic journey through this unique habitat. The Children's Safari and Playground, an exclusive adventure for teens and pre-teens, will explore the wondrous world of animals and plants from around the world. This area will also engage children in adventure play by giving them a chance to simulate animal activities, both challenging and fun.

Doha, Qatar



The zoo expansion encompasses an 8-acre addition to the existing zoo property and includes new animal exhibits and a new main zoo entry. The Africa experience is one that immerses visitors in a savanna environment and contains dramatic views of giraffe, zebra, gazelle, antelope, ostrich, and wetland birds in expansive, free-range habitats. Lion, wild dog, warthog, and mandrill are also be encountered along the trail.

In the village, traditional African structures of mud and thatch combine with a modern research station in which visitors view meerkat and mole rats underground. The research station also provides facilities for overnight group camping and special functions.



# Passport to Africa



Cultural immersion is evident in the village's indigenous architecture and at the lion exhibit where the animals inhabit the ancient Zimbabwe ruins. The savanna animals in the background complete the illusion of being in a natural landscape complete with the fauna, flora, geology, and culture of Africa.

**Passport to Africa**  
**El Paso Zoo**  
**El Paso, Texas**  
**2004-2006**  
**\$ 9.7 Million**





# Master Plan

The new Master Plan for the existing Emperor Valley Zoo was developed in the 7.2 acres site where the zoo is currently located. It will create new exhibits for their major exotic animals while improving all other exhibits and accessibility and open spaces for the general public.

This Master Plan organizes the animal collection into 4 geographic zones: South America, Asia, Africa, and Trinidad and Tobago. It also includes a New Entry and Cafe.

The \$57 Million TTD project was divided into 11 phases. Some of the exhibits included in phase 1 are a brand new Giant River Otter Exhibit, Flamingo Exhibit, Hummingbirds and Butterfly gardens and other smaller exhibits.

**Emperor Valley Zoo Master Plan**  
**Port of Spain**  
**Trinidad and Tobago**  
**2006**  
**\$57 Million TTD**



# Giant River Otter Exhibit

Emperor Valley Zoo, Trinidad and Tobago



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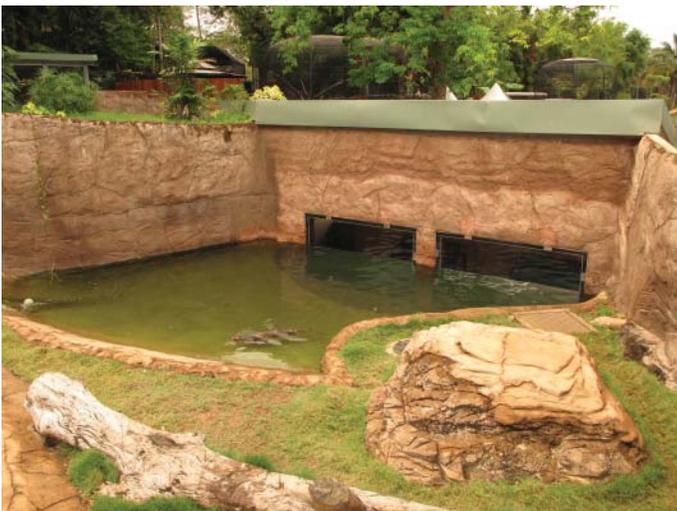


This brand new exhibit is part of the Phase 1 of the Master Plan.

This exhibit includes 2 pools of approximately 15,000 gallons, an underwater viewing building, a brand new holding building, and LSS system. Waterfalls complement this exhibit creating water streams that otters can use to slide into the pools.

Besides the underwater viewing, two other viewing structures were planned to allow the visitors views into the exhibit from different perspectives.

**Giant River Otter Exhibit**  
**Emperor Valley Zoo**  
**Port of Spain**  
**Trinidad and Tobago**  
**2012**  
**Undisclosed**



# Children's Play Park

Emperor Valley Zoo, Trinidad and Tobago

The Children's Play Park is part of the re-development of the Emperor Valley Zoo and Royal Botanical Garden on Trinidad. The emphasis is placed on open-air activities and physical play that is integrated with the new visitor experience.

Children and families will enter the Play Park from the level of the restaurant and the terrace that overlooks the play area. The first station is a generous sand play area shaded by a pavilion.

The boardwalk with rope bridges, climbers, and a spectacular tree house takes the visitors over the heads of the children playing below in the maze and in the water play area. Parents can watch over their children comfortably from the seats of the adjacent plaza while the children chase through the interactive jets and brave the winding water slide. The rock wall skirting the water play provides the backdrop for splashy waterfalls and offers safe rock climbing to active children.

**Children's Play Park**  
**Emperor Valley Zoo**  
**Trinidad and Tobago**  
**2006**  
**\$ 10 Million**



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**pja**

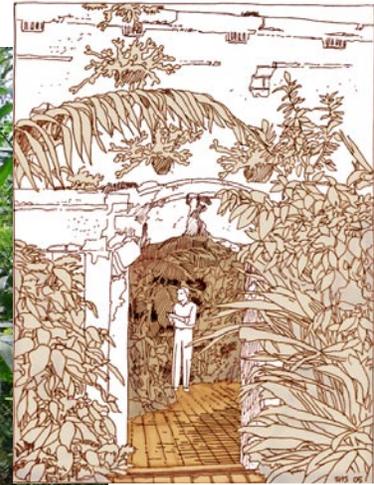
# Master Plan & Conservatory Renovation Plan

The renovation plan for the tropical conservatory at Fairchild proposes not only architectural changes, but also converts the facility into the garden's main location for interpreting the history, plant collection, and the research and conservation work conducted by the institutions.

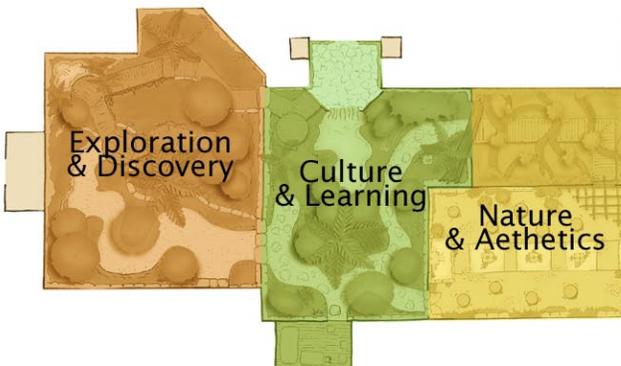
More than the exhibition of tropical plants, the new conservatory will tell stories about how plants are collected, studied, and propagated for introduction into gardens, orchards, food stores, and re-habilitation of disturbed habitats. By telling these stories through the writings of David Fairchild, the interpretive exhibits will also inform of the garden's heritage and original purpose.

Visitors will be guided through a series of garden rooms with distinct interpretive themes. The plant collection and architecture in each room are designed to reinforce the messages of the interpretive exhibits while creating an exotic, beautiful, and memorable visitor experience.

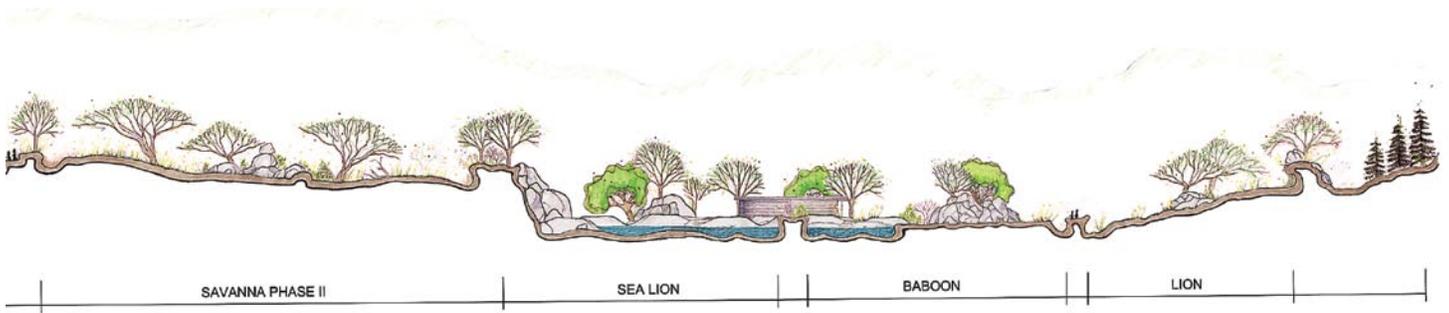
The project includes new science and research laboratories, staff offices, herbarium, meeting rooms, and a library. Views into the GIS Lab, Molecular Lab, and the Herbarium will provide visitors with opportunity to experience the behind-the-scenes work conducted by garden scientists. The experience will be interactive, dynamic, and educational for visitors of all ages and cultural backgrounds



architects landscape architects, p.s.



Master Plan and Conservatory Renovation Plan  
Fairchild Tropical Botanic Garden  
Miami, FL  
2004 - 2005  
\$ 6 Million



# Master Plan

## Gaia Park



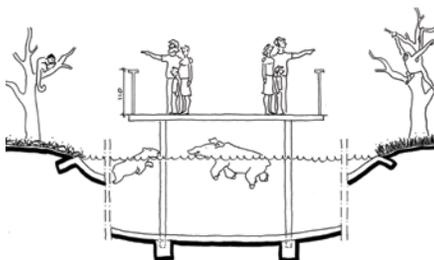
## Netherlands

PJA, together with Apenheul Zoo staff, created the interpretive story line and the master plan for this new 25-hectare zoo in the South of the Netherlands.

The design is guided by the ocean currents: The visitor travels through the South African Desert and Coast; through Amazonia, Congo, Tundra, Europa, and Himalaya Exhibits. Traveling through time, the public visits the Carboniferous, the Cretaceous, and the Ice Age, and finally current day Limburg.

Gaia Park stresses the connection between the animate and inanimate in the evolution of fauna, flora, and environment. The park opened in May 2005.

**Master Plan  
Gaia Park  
Kerkrade, Netherlands  
2001**





# Master Plan

The Master Plan for the Greenville Zoo proposes new animal exhibits and visitor amenities. These changes will improve the visitor experience, diversify the animal and plant collection, and increase the revenue generation capacity of the zoo. The plan includes a 9,000sf Restaurant and Events Center, a 1,500sf Cafe, a 3,500sf Gift Shop, and a 1,500sf Birthday Pavilion and Children's Activity Zone.



The Master Plan is organized to emphasize the primary purpose of the zoo, that is, to exhibit live animals in ways that are fun, entertaining, and educational to zoo visitors. The components of the plan also intend to create a family friendly, comfortable, and relaxing environment, and as such, the new plan includes new visitor amenities, entertainment venues, and animal experiences that are specifically chosen to engage young visitors.

The physical Master Plan is integrated with an interpretive master plan that acts as a bridge between the exotic, worldly locations that the animals represent and the local, uniquely Greenville story.

The plan is also integrated with a Strategic Business Plan that charts a clear and financially responsible course for achieving the goals of the master plan by increasing attendance and revenue. A phased capital investment schedule was developed to support the business plan.



**Greenville Zoo Master Plan**  
**City of Greenville, S.C.**  
**Budget: \$60 Million**  
**2012**

architects landscape architects, p.a.



The vision of the new zoo is to inform the citizens and the visitors of Guyana of the rich natural world that exists just beyond the limits of Georgetown.

As responsible stewards of Guyana's rich and threatened biological diversity, the Ministry of Natural Resources and the Environment (MNRE) and the Protected Areas Commission envisions the zoo as an urban reflection of the flora and fauna of the nation. The Master Plan represents a new kind of experience for visitors to the zoo - one that organizes animal species in habitats representative of the natural protected areas of the country.

The animal exhibits will be grouped to represent the following four regions of the country: Coastal Wetland, Savannah, Mountain Highlands and the Lowland Rainforest. Visitors will experience a virtual trek from the coast to the highlands, progressing along a main visitor pathway with short loop trails into habitats. The main pathway will be extended south of the manatee ponds leading visitors in a new expansion zone of the zoo where future exhibits of international animals will be displayed. The expansion zones may exhibit animals from Africa, Asia, or other distinct habitats of South America. This new pathway will create a large loop leading visitors back to the main walkway.



**Master Plan  
Guyana Zoo  
Georgetown, Guyana  
2013**

# Master Plan

Guyana Zoo, Georgetown, Guyana



architects  landscape architects, p.s.



# Windows

# to

# Africa

Hainan Island, P.R. China

Visitors to Windows to Africa will experience an exotic array of free-roaming wild animals combined with the tribal people, cultural traditions, foods, and architecture from the four corners of the African continent. The cultural theme park will present an interactive visitor experience that celebrates the incredible variety of indigenous animals, peoples, and landscapes that one would encounter on a safari to Africa.

The update to Windows to Africa included the addition of a conference and convention center, a 300 room, four star hotel, luxury villas and a beach and yacht club on the ocean front.

Hainan Island, P.R. China  
Master Plan Update  
2012



When fully implemented, this plan will make the Windows to Africa theme park a model for high quality family entertainment on Hainan Island and will be a fine example of excellence for the theme park owners throughout China. Part wildlife park, part living history museum, part luxury resort, the new park will create a culturally rich environment that celebrates the diversity of cultures on the African continent and provide a unique and exciting entertainment venue for all who come to enjoy it.

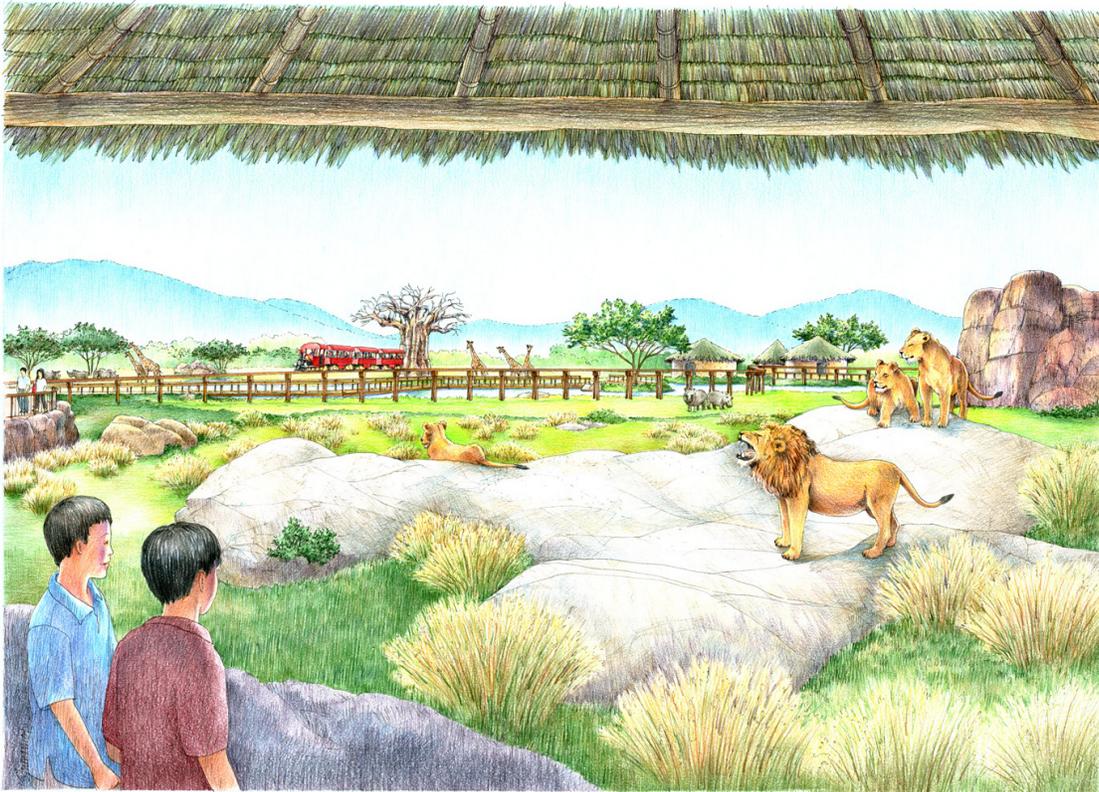


北区总体规划 鸟瞰图  
North Zone Aerial Perspective



# Africa Safari

Hangzhou Safari Park, P.R. China



The new exhibits encompass a 20-acre expansion of the existing safari vehicle experience. The Africa Safari will have a walking trail and a train ride that immerses visitors in a savanna environment containing dramatic views of Elephant, Hippo, Giraffe, Zebra, Gazelle, Antelope, Ostrich and wetland birds in expansive, free-range habitats. Lion, Wild Dog, Cheetah, and Baboon will also be encountered along the trail.

Visitors get up-close looks at some of the smaller creatures of the savanna at the traditional thatch-roofed village with the main interpretive pavilion. In the village, traditional African structures of mud and thatch combine with live animal exhibits where visitors view Baboon Spider, Chameleon, Millipede, Centipede and Roaches in the walls. The village also provides facilities for overnight group camping and special functions. Cultural immersion is achieved by indigenous architecture.

At the Lion exhibit, the visitors view the animals through glass peep-holes set in the hand-laid stone ruin walls from the air-cooled comfort of the interpretive pavilion and across open moats on the outside. The savanna animals in the background complete the illusion of being immersed within the natural landscape of Africa complete with the fauna, flora, geology and human culture of the continent.

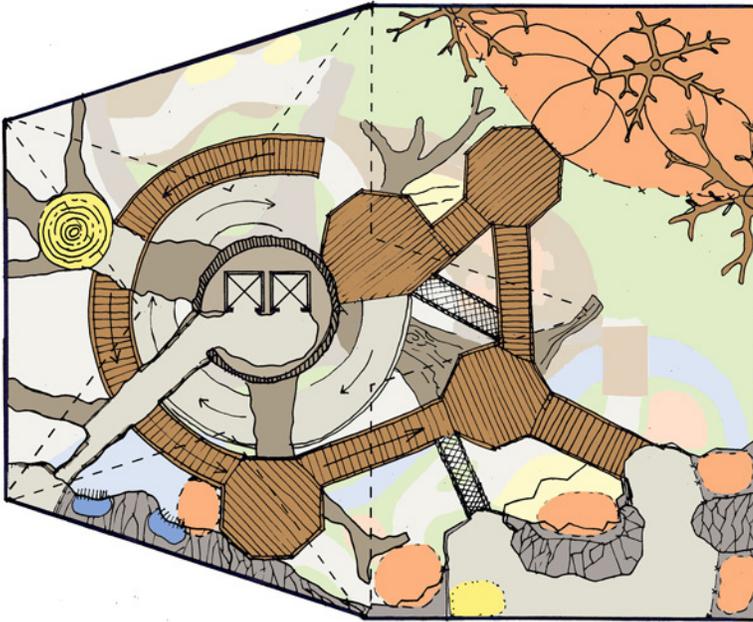
**Africa Safari**  
**Hangzhou Safari Park**  
**Hangzhou, P.R. China**  
**2005-2006**  
**\$ 12 Million**





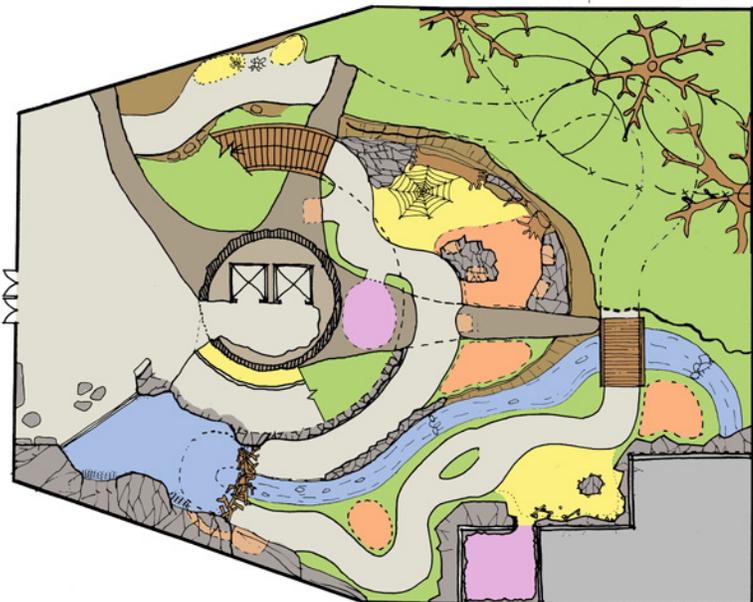
# Discovery Center

Hangzhou Safari Park, P.R. China



The Discovery Center is part of the extensive re-design of the Hangzhou Safari Park. The two-story building will provide indoor exhibit space and display a variety of animals from throughout China. It features tunnels, nests, and other 'architecture' of the animal kingdom. The animal habitats are complimented by interactive play elements and science-museum-like displays.

The Discovery Center features a giant artificial tree as its centerpiece. A spiral pathway leads into the roots through the underground spider play area. Children crawl through the tunnels of the mole rat labyrinth and view the hidden small exhibits of insects and other creatures that dwell in the dark. The path emerges along a creek where visitors can scale the sides of a rock wall. The creek is dammed by beavers and entering the oversized structure offers underwater views of them hard at work.



On the boardwalk winding up through the branches of the central tree, a huge wasp's nest is encountered, which curious visitors will make buzz. The highest points of the boardwalk brings the visitors to the homes of the monkeys in the uppermost branches and to the nests of the swiftlets built on the top of the cliff.

architects landscape architects, p.a.



Discovery Center  
Hangzhou Safari Park  
Hangzhou, P.R. China  
2005



The master plan for the 600-acre park is physically organized to communicate the park's primary purpose to exhibit live animals in ways that are fun, entertaining, and educational to visitors. The emphasis is to exhibit animals in large, open enclosures which resemble their native habitats and provide the animals with space and enrichment appropriate to the species.

# Master Plan

Although the main pedestrian zone of the park is not specifically arranged according to zoogeographic zones or bioclimatic conditions, the drive-through and tram-accessed zones of the park have been organized to represent specific geographic biomes, and exhibited in each area of the plan are animals which cohabit these regions in the wild.

The plan includes a proposal for a new Discovery Center which exhibits reptiles, insects, birds, fish, and small mammals in an indoor, climate-controlled building that illustrates the diversity of small animals and their "architecture". The new Discovery Center is also an ideal children's venue which will allow the park to exhibit small creatures that are often misunderstood or poorly represented in safari parks.

A separate botanically inspired amusement park is included in the Master Plan and is thematically presented in order to integrate it into the existing safari theme of the park. Across the street from the Grand Entry Plaza for the park, a Recreation and Entertainment District has been planned which will complement the family atmosphere of the park, will provide additional revenue, and will extend the season and daily activity at the park.



Hangzhou Safari Park, P.R. China

**Master Plan**  
**Hangzhou Safari Park**  
**Hangzhou, P.R. China**  
**2005**  
**\$ 30 Million**  
**(\$ 240 M Yuan)**



# Adventure

Hangzhou Safari Park, P.R. China



## Polar

The master plan for the safari park creates a framework for growth and development that articulates a vision and affords flexibility to accommodate increased visitation, new exhibits, and additional revenue generating venues throughout the park.

The Polar Adventure will include highly immersive and interactive exhibits of the north and south pole and will include a variety of species both large and small. The marine exhibits include a large sea lion habitat that replicates the northern coast of North America and includes a wave machine, coastal bird species, and a large amphitheater for demonstration shows.

An indoor climate controlled exhibit featuring penguins, puffins, and otters is sensitively incorporated into a hillside. The animals will be

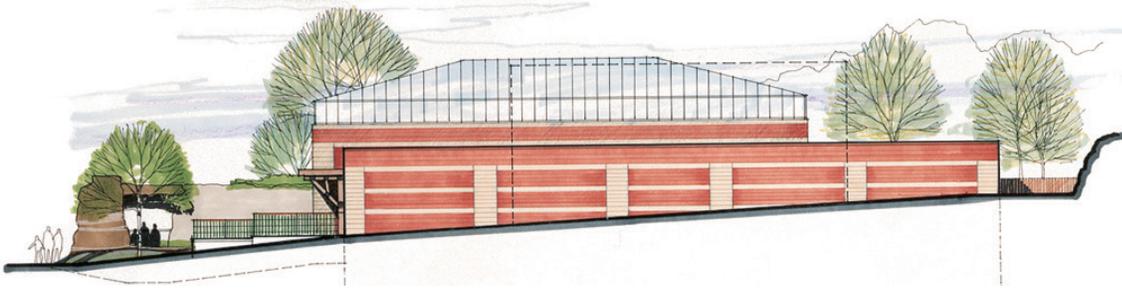
exhibited in open air spaces that replicate their natural habits.

Interpretive graphics and other elements will be used to illustrate the similarities and differences between the southern and northern habitats. Visitor space will also contain environmental elements that simulate the climates of both regions. Two separate Polar Bear habitats complete the experience, one exhibit contains a chilled water pool stocked with fish and the other is visible from safari vehicles.

Designed to take full advantage of the existing site conditions, the exhibit will create an extensive self-contained walking experience.

**Polar Adventure**  
**Hangzhou Safari Park**  
**Hangzhou, P.R. China**  
**2005-2006**  
**\$ 15 Million**

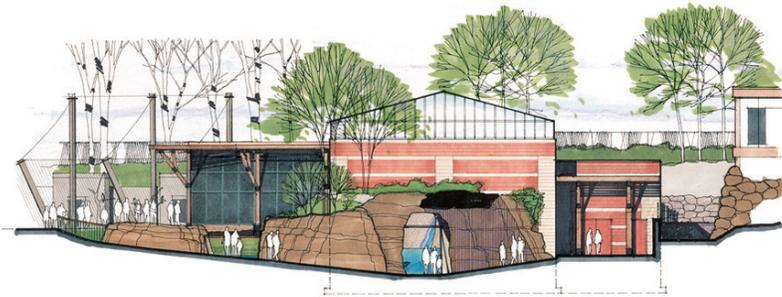
# Tropical House



PJA, in conjunction with Durrant Architects, were asked to design an exhibit for year-round use. The South American Tropical House lets Madison, Wisconsin zoo-goers experience the tropical rainforest twelve months a year.

In addition to housing a significant collection of birds, fish, and small mammals, this free-flight aviary is an Interactive Learning Center set in the forest. Insects, fungi, and other species are incorporated into a living horticultural environment. An integrated interpretive program focuses on biodiversity with "The Fragile Web". Keeper areas blend seamlessly with themed "research" huts where visitors discover connections between the places they live and rain forest ecosystems. Outdoor exhibits include river otters and capybara occupying a series of cascading pools fed by a waterfall and white-water stream.

**South American Tropical House**  
Henry Vilas Zoo  
Madison, Wisconsin  
1999 to 2001  
\$ 4 Million



# Rhino Expansion

Houston Zoo, Houston, TX



The new exhibit encompasses a 2 acre expansion of an existing hoofstock exhibit and includes a new holding building for four White Rhino. Designed so that the animals will share exhibit space with Zebra and with paddocks that are appropriate for both species, the new facilities will improve animal management and keeper safety. The 2,000 square foot holding

building includes a manual squeeze cage for management and animal safety. The exhibit space includes a waterhole and mud wallow for animal enrichment and containment includes fencing and shotcrete walls. The new expansion area was sensitively designed around existing mature Oak trees and other exhibits in this area of the zoo.

**Rhino Expansion**  
**Houston Zoo**  
**Houston, Texas**  
**2011**  
**\$ 4.5 Million**



# African Forest

The African Forest at the Houston Zoo is a 13-acre visitor experience which will envelope guests in a leafy green world of tropical vegetation. The exhibit will interpret the plants, animals, and cultures that inhabit the impenetrable forests of West Africa. Visitors will view tropical birds in a large enclosed aviary, see okapis, bongos, mandrills, colobus monkeys, rhino, and red river hogs along the scoured river bank, enjoy the activity of chimpanzees and the tranquility of gorilla troupes in their forest habitat, be surprised by the graceful movement of hippos under water, observe the quiet movement of the giraffes, and enjoy the opportunity to interact while feeding them from a special platform.

Cultural attractions include a ranger training school, school house, trading post, gift shop, restaurant, and pygmy camp. The exhibit will be fun, entertaining, educational and captivating.

Phase 1 was completed in late 2010 and included chimpanzee, rhino and giraffe exhibits, a gift shop, restaurant, trading post, and pygmy camp. Adjacent to the African Forest exhibits, a new Cheetah exhibit was added as a companion to the existing African Wild Dog exhibit, thus creating a loop trail of African Habitats.

**PHASE 1**  
**African Forest**  
**Houston Zoo**  
**Houston, TX**  
**\$30 Million**  
**2010**  
**11 acres**

Houston Zoo, Houston, TX



# African Forest

## Restaurant and Gift Shop

Houston Zoo, Houston, TX



The African Forest at the Houston Zoo will be a 13-acre visitor experience which will envelope guests in a leafy green world of tropical vegetation. The exhibit will interpret the plants, animals, and cultures that inhabit the impenetrable forests of West Africa.

Phase 1 was completed late 2010 and includes, giraffe, ostrich, rhino, and chimpanzee exhibits. The revenue generation components include a 1,810sf Trading Post; a 3,695sf Gift Shop and a 4,440sf restaurant with two outdoor dining patios and a public plaza that overlooks the animal exhibits, creating a unique and captivating visitor experience.



**PHASE 1**  
**African Forest**  
**Houston Zoo**  
**Houston, TX**  
**2010**  
**\$4.5 Million**

architects  landscape architects, p.s.  
**pja**

# Elephant

Houston Zoo, Houston, TX



The new exhibit encompasses a 3-acre expansion of the existing elephant exhibit and includes new holding buildings for five cows and two bull elephants. Designed so that the animals can be rotated from one habitat to the other or into the management paddock, the new exhibit is very flexible and will improve keeper safety and the management of the elephants.

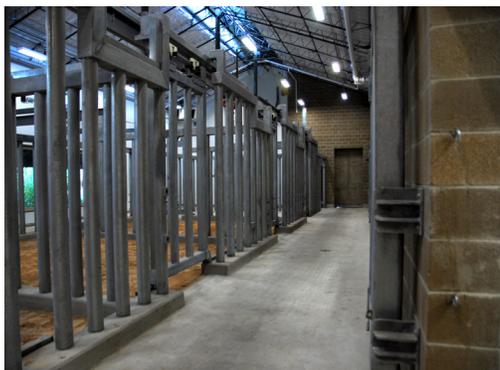
The holding building includes a public viewing window where visitors can see keepers working with the animals in a protected contact manner. The viewing shelter was

designed to accommodate special events and is located adjacent to a small amphitheater that looks out over a large swimming pool for the elephants. Integrated into the habitats are shade structures, mounds of sand, puzzle feeders, and other enrichment elements that can be accessed by keepers throughout the day by rotating the elephants from one habitat to the other.

The new expansion area was sensitively designed around existing mature live oak trees and other exhibits in this area of the zoo.

# Expansion

**Elephant Expansion**  
**Houston Zoo**  
**Houston, Texas**  
**2006**  
**\$ 8.5 Million**



# Natural Encounters

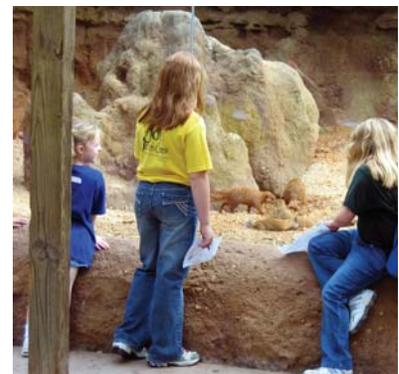
Tree branches stretch out over the pathways. Sliding glass panels silently part, offering an intimate connection to a rainforest habitat. A field researcher emerges from a tent to share intriguing stories of the natural world. A new and exciting era in zoo exhibit design began when the Houston Zoo opened the doors of the new Ethel G. and Allen H. Carruth Natural Encounters Building.

A first of its kind concept in zoo exhibit design, Natural Encounters will bring Zoo guests nose to nose with meerkats, tamarins, Asian small clawed otters, fruit bats, and spectacular coral. "Natural Encounters has been a real-life adventure from start to finish," said Zoo Director Rick Barongi. "From conception to design and construction, Natural Encounters is a state of the art design that will educate, amaze, and inspire visitors of all ages."

With hundreds of animals and an exceptional staff, the Ethel G. and Allen H. Carruth Natural Encounters Building sets a new standard for interactive zoo exhibitry. Natural Encounters' combination of creative keepers and intriguing animals vividly demonstrate the importance of protecting and understanding our natural world.

**Natural Encounters**  
**Houston Zoo**  
**Houston, Texas**  
**2002-2005**  
**AZA 2007**  
**Significant Achievement Award**  
**\$ 5 Million**

Houston Zoo, Houston, TX



With conservation in mind, this new exhibit is focused on the cheetah's race for survival. Some estimates put their numbers at around 10,000 in the wild.

The new exhibit includes a holding building, two cheetah enclosures, and a mesh enclosure for bat-eared fox and ground hornbills. Nestled between the existing plains exhibit and the African elephant exhibit, visitors are immersed in a naturalistic savanna habitat teeming with predators and prey. As the pathway twists and turns it affords spectacular views at each juncture.

It is a well known fact that cheetahs are the fastest land animals alive. The new cheetah exhibit capitalizes on this fact with an interactive sprint track called 'Race A Cheetah'. A radar gun records a visitor's quickness and speed and compares it to a cheetah's. Occasionally, the cheetahs may join in. Proceeds go to support the Cheetah Conservation Fund in Namibia, Africa.



**Cheetah Exhibit  
Indianapolis Zoo  
Indianapolis, IN  
2008-2010  
\$2 Million**

# Cheetah Exhibit



The new Tiger Forest is a major renovation of an existing exhibit in the Forests Biome Zone at the Indianapolis Zoo. Dense thickets of birch and towering spruce, fir, and larch re-create the mixed deciduous-evergreen forest of the Far East; the last remaining wild habitat of the Amur tiger.

The re-designed exhibit provides an ideal environment for fostering the conservation message for the rare and endangered Amur tiger by getting closer than ever. While tigers in their natural habitat are a mystery and rarely sighted, zoo visitors will now have little problem observing these special animals in their new home. A new viewing structure set between the two exhibits provides visitors with a face to face encounter. Floor to ceiling glass allows unimpeded views into the tiger's native habitat. A large timber wall also provides an interpretive space that showcases the vital research being conducted in Russia to prevent these animals from going extinct in the wild.



**Tiger Forest**  
Indianapolis Zoo  
Indianapolis, IN  
2010  
\$1.1 Million



# Tiger Forest

Indianapolis Zoo, Indianapolis, IN



As a commitment to creating interactive and educational exhibits, feeding tubes are integrated into the exhibit and are strategically placed for quick interactive keeper talks with the public. As well, a training wall where keepers can demonstrate the tiger's natural behaviors is integrated into a viewing area off the visitor pathway.



# Africa Expansion

This new exhibit complex expands upon the existing African Forest exhibits by developing previously undeveloped land as a mixed species African Savanna exhibit. The keystone species is a 5 acre African elephant exhibit that includes habitat space and separate holding facilities for cow and bull elephants. Included in the expansion are exhibits for African hoofstock species, zebra, giraffe, and a day lodge that would include retail and restaurant facilities, as well as overnight camping capability. Lion are also brought back into the animal collection, after years of absence, and are a major component of the new exhibit. The project will be constructed in phases as funding becomes available and while fundraising efforts for the new exhibits continue, PJA in collaboration with Tod Ricketts, assisted the zoo in renovating the existing elephant holding facility in order to comply with AZA recommendations.

Jackson Zoo, Jackson, MI

**Africa Expansion  
Jackson Zoo  
Jackson, Mississippi**



# Asia Precinct

Jackson Zoo, Jackson, MS



The new exhibits encompass a five acre redesign of existing exhibit space and include new animal exhibits for leopard and tiger. The experience will be one that is sympathetic with the natural habitat of the animals. The precinct also includes a recently renovated Orangutan exhibit. The new exhibit will be the first phase of a larger Asian precinct at the zoo incorporating architecture, natural landscape features, fauna, flora, geology, and architectural elements that immerses visitors in an Asian forest environment. Leopards will be exhibited in a mesh enclosure while tigers will roam an open exhibit with a shallow pool and waterfall. Future planned exhibits include an enlarged gibbon enclosure, renovated tapir exhibit, red panda enclosures, and a bird aviary.



Asia Precinct  
 Jackson Zoo  
 Jackson, Mississippi  
 2007  
 \$2.5 Million



Tiger Exhibit  
 Jacksonville Zoo  
 Jacksonville, FL  
 2012-2014  
 \$9 Million



Jacksonville Zoo, Jacksonville, Florida

# Land of the Tigers

The character of these new exhibits is that of a lush tropical forest punctuated by openings in the tree canopy where streams and pools are visible from the edge of the eroded stream corridor. The stream corridor is articulated by artificial shotcrete earthbank walls which contribute to the riverine character and create the barriers for the animal exhibits. The animals on exhibit will include hornbill, babirusa, warty pig, small-clawed otter, and tiger each in multiple habitats. Both tiger and otter will be viewed underwater through expansive glass windows and in shallow streams and pools. An innovative “tiger corridor” will allow tigers to roam the perimeter of the exhibit site and pass



over visitor walkways, replicating their natural behavior to patrol territorial habitats in the wild.

The visitor will experience four distinct landscape types as they follow the meandering path along a watercourse. Visitors enter into a primary forest of tall trees and open mid-canopy, wind their way along dense shrub corridors that create the edge of the stream banks and screen views of the open grass covered exhibits, and eventually arrive at a tropical savanna where the tigers roam along rock ledges, pools, and grassy clearings among palm trees and surrounded by a bamboo forest.



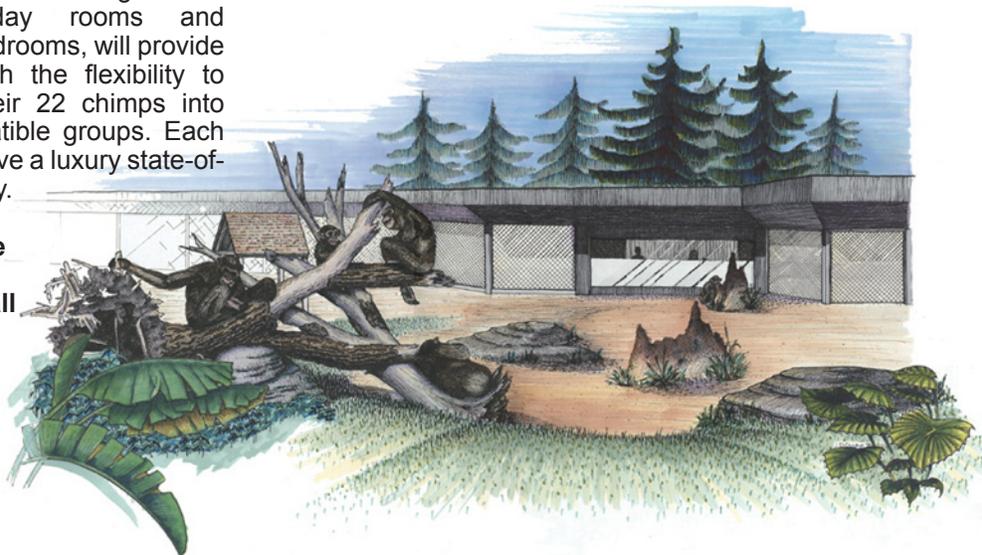
PJA, at the request of the Jane Goodall Institute - Taiwan and in conjunction with the Taipei Zoo, developed a conceptual plan for a new Chimpanzee Exhibit and Sanctuary on an existing 8-acre parcel of land within the Zoo boundaries. The final concept provided for two separate Chimpanzee Exhibits, each at just over a quarter-acre, as well as a 7-acre sanctuary.



# Master Plan

These three habitats, along with night quarters consisting of three separate day rooms and adjoining bedrooms, will provide the Zoo with the flexibility to separate their 22 chimps into three compatible groups. Each group will have a luxury state-of-the-art facility.

**Chimpanzee  
Sanctuary  
Jane Goodall  
Institute  
Taipei Zoo,  
Taiwan  
1998**



Jane Goodall Institute Taipei, Taiwan

Jurong Birdpark is one of the largest and most renowned avian centers in the world. In addition to highly successful and prolific captive breeding programs, it is well known for high-end exhibitory.

PJA finalized a Master Plan to take Jurong into the new century with continued excellence. Emphasis has been placed on increasing the “fun-factor” with more hands-on activities. Innovative exhibits proposed include Free-Flight Parrot Aviaries, a Raptor Aviary, an Everglades and Habitats of the World exhibit, as well as the new South America exhibit and renovated Penguin Building.



**Master Plan  
Jurong Birdpark  
Singapore  
1999 to 2001  
Update: 2006**

# Master Plan

Jurong Birdpark, Singapore



**JURONG BIRDPARK**  
MASTER PLAN  
30 MARCH 2000



SCALE 1:500  
NORTH

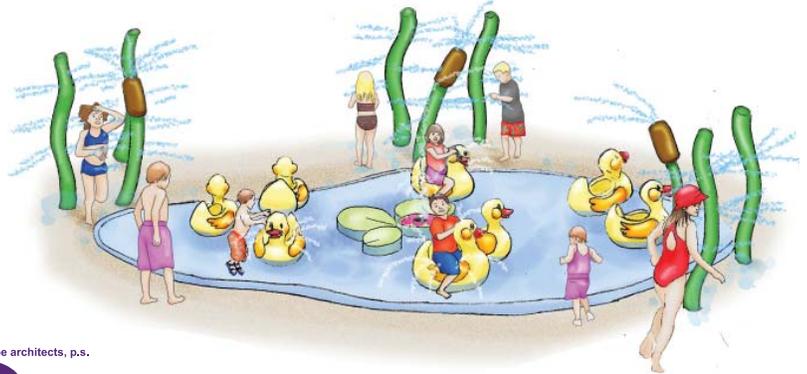
architects landscape architects, p.s.



# Jurong Bird Park, Jurong, Singapore

Children's Play at Jurong Bird Park is a concept for a new family attraction inspired by birds. With amusement rides, dry and wet play, picnic areas and a restaurant and gift shop, there will be hours of entertainment for all ages.

As visitors approach this play area, they hear a large cuckoo clock chiming. People gather to watch the doors open and a large albatross appears. This Albatross Sky Cycle carries passengers in its basket on a track and is one of the many ticketed attractions.



## Birdz of Play

architects  landscape architects, p.s.



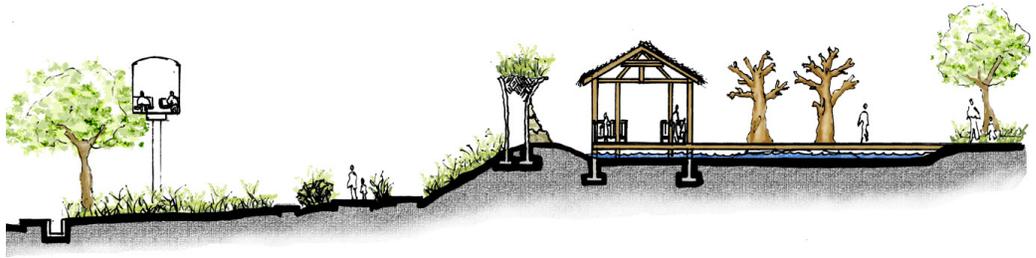
**Children's Play  
Jurong Bird Park  
Jurong, Singapore  
2009**

After buying tickets for the attractions and checking the activity schedule, visitors enter through the colorful entrance portal and meander through large raintrees to another plaza. Here they can choose to enter the dry play area, the wet play area or grab a bite to eat at the whimsical bird house themed restaurant.

The dry play area has activities for all ages including spinning in robins' nests, climbing up into weavers' nests, ascending a rock face to reach an eagle's nest or sliding down from a colorful birdhouse. Here children can also choose to go on other amusement attractions such as the High-flying Kite ride or the Tall Tower ride.

The wet play area has splash attractions for all ages including slides, pop jets, spray birds, water cannons and a duck pond for the little ones. A shower and changing facility assures that all visitors leave dry and happy.





# South America Exhibit



## Jurong Bird Park, Jurong, Singapore

The exhibit design builds on the foundation set in the master plan by PJA. While the landscape design takes advantage of the tropical climate of Singapore to present an immersive and authentic South American jungle, the visitor experience is dominated by the water features chosen to represent the birds and wildlife of one of the largest river deltas of the continent.

Visitors will cross a flamingo lagoon, encounter parrots feeding on the clay banks of the river and visit an indigenous stilt village connected by wooden walkways. Here they are offered close views of the capybaras living among the water plants and various water birds exploring the pool on their stilt legs.

A shaded viewing shelter offers quiet underwater views of diving waterfowl, snapping turtles, and colorful fresh water rays, as well as glimpses of brocket deer in the background. The visitors emerge from the jungle to encounter a Colombian hacienda offering refreshments, adjacent to a themed playground complete with a maize-maze.

**South America Exhibit**  
**Jurong Bird Park, Singapore**  
**2006**  
**\$ 3 Million**



# Regenstein Center for African Apes

When Lincoln Park Zoo decided to replace their highly regarded Great Ape Facility with a new \$25 million state-of-the-art facility, PJA was asked to join forces with local Chicago architects Lohan Caprile Goetsch to help the zoo realize their dream.

The new facility is comprised of separate outside facilities, three of four on view to the general public.



Because of site constraints, one outdoor exhibit uses moats for containment while the other two utilize woven stainless steel cable mesh. Indoors, the guest is invited to view the Great Apes in three separate dayrooms; each dayroom connects to the outside exhibit through two large, sliding glass walls.

At the direction of L.P.Z., PJA designed these indoor dayrooms and exterior exhibits with as many natural looking



Lincoln Park Zoo, Chicago, IL

elements as possible, promoting vertical as well as horizontal travel throughout the space.

A number of animal-activated devices are scattered throughout the area to provide the apes with the opportunity for random scatter feeding, forced-air cooling and heating, and intermittent sprays from shower heads. Guests, if situated in the correct location, will also be recipients of effects controlled by the apes.

The result is an 85,000 sq. ft. complex, probably the most technologically advanced facility housing Gorillas and Chimps to date.

**Regenstein Center  
for African Apes  
Lincoln Park Zoo  
Chicago, Illinois  
Opened July 2004  
AZA 2006  
Significant Achievement Award  
\$ 25 Million**

# Rainforest of the Americas



The rainforest exhibits will include animal species from Central and South America and will immerse zoo visitors in a green world of cascading waterfalls, indigenous architecture, and colorful and exotic plants and animals. The visitor pathway winds upwards, climbing to the spectacular waterfall grotto before entering an existing walk-through aviary.

The signature species of tropical America, the Jaguar, is exhibited along with the rare and endangered Harpy Eagle, Baird's Tapir, Black Caiman, King Vulture, Macaw, Toucan and Howler monkey. Visitors will view animals from underwater, across

Los Angeles Zoo, LA, CA



open water moats, mesh aviaries and glass enclosures which reflect regional architectural styles, detailing, and materials.

Free-flight Macaws and free-roaming Golden Lion Tamarins contribute to the illusion that the animals of the exhibit are able to move everywhere and carefully located overlooks and vegetative screening eliminate disparate views.

The project utilizes the existing landforms and vegetation to create an intimate and secluded experience that is unique within the context of the rest of the zoo. The warm climate of Los Angeles makes the rainforest experience a reality.

**Rainforest of the Americas**  
**Los Angeles Zoo**  
**Los Angeles, California**  
**2004**  
**\$ 8 Million**





Longsha Botanical & Zoological Garden is a new zoo opened in June 2014, sited on the edge of the downtown core and adjacent to a new recreational lake. The site encompasses 80 acres and is designed as a zoo that will exhibit animals from around the world in outdoor exhibits and indoor simulated habitats during the winter months. The design process included a Concept Master Plan and a Schematic Design, and was engineered and constructed by local architects and engineers.

# Longsha Botanical & Zoological Garden

PJA was responsible for the overall layout, exhibit design, and animal management facilities of the park, along with all visitor amenities which include entry, gift shops, cafes, restaurants, animal theater, and a science discovery center.

The organization of the zoo is generally biogeographic and includes African savanna, North America plains, Asian steppe, Asian taiga, Asian rainforest, Australasia, wetland birds, and the American Farm. The larger open range areas and taiga zones will exhibit cold hardy species from northern latitudes in outdoor exhibits throughout the year, while other species will be moved into indoor exhibits during the colder months of the year.



Longsha Botanical & Zoological Garden  
Qiqihar, P.R. China  
2012-2014  
\$110 Million RMB





The new Longsha Botanical & Zoological Garden planned and designed by PJA includes a comprehensive system for communicating interpretive messages to zoo visitors. The interpretive signs include graphic images and text that is easy to comprehend, attractively displayed, and full of fun and interesting facts about the animals, plants, and habitats that make up the zoo experience.

The signs contribute to the educational content of the zoo and contain brief descriptions of what visitors are seeing and factual information about the flora and fauna in the park. Each animal identification sign communicates this information in five specific categories: physical characteristics, food, range map, behavior, and fun facts. Habitat signs and plant identification signs are organized around similar categories. All signs are color coordinated and have individual shapes for easy identification and graphic clarity.

# Interpretive Design



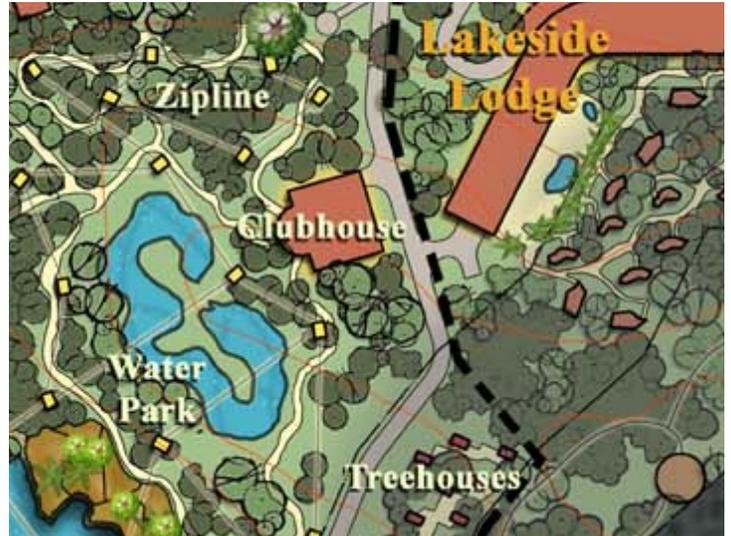
architects ■ landscape architects, p.s.



Interpretive Design  
Longsha Botanical & Zoological  
Garden  
Qiqihar, PR China  
2014

As prime consultant, PJA collaborated with Morris Architects, Baker Leisure, and Azure Limited for the conceptual master plan and development program for a world class nature based theme park near the site of the existing Singapore Zoo. The design includes family friendly activities inspired by and focused on nature interaction. These include zip line towers, natural water park elements, an activity clubhouse, overnight camping, a discovery center, environmental café and shops. Lodging options include the treehouse camp, the rainforest hotel, and the lake view inn with shuttle connections to the new and existing venues at the site.

Surrounded by a nature reserve, the new park will highlight educational, interactive, and entertaining experiences with local flora and fauna while at the same time connecting to worldwide conservation efforts via electronic information technology.



# Mandai Master Plan



The park will be part of four separate gates and will be a unique opportunity for nature based life style choices and family fun. The master plan includes recommendations and guidelines for development of the site that allows potential developers of the park significant freedom to reorganize or replace venues while maintaining the natural integrity of the site.

Recommendations for best practices site development, green architecture, energy conservation, and sustainable practices are outlined, and criteria for critical evaluation of the development proposals are included. A sample business plan, gate fees, and hotel rates provide potential developers with the financial assessment of the proposed plan and detailed program information meets Singapore development standards.

**Mandai Master Plan**  
**Singapore Tourism Board**  
**Singapore**  
**2008**



# A Journey through South East Asia



Melbourne Zoo, Melbourne, Australia

The master plan for the Asian Precinct at the Melbourne Zoo builds upon the principles and award winning success of the Trail of the Elephant exhibit which opened in 2003 and was Phase I of this 10-acre parcel in the zoo. The precinct will take visitors on a trek through a variety of South East Asian landscapes inhabited by some of the signature animal species of the region.

The interpretive story of the plight of four species, whose shrinking habitats are being destroyed by human encroachment, will be told

by four separate voices. Sumatran Tiger, Asian Elephant, Small-clawed Otter, and Orang-utan are species under stress and each requires a different human response for their conservation. Each exhibit will explore how man and animal can survive together if rational responses are made and habitat protection efforts are implemented by local, regional, and international conservation groups.

A multiple-species exhibit will highlight the Melbourne Zoo's conservation efforts throughout

Asia and specific on-going programs in the Philippines with Crocodile, Spotted Deer, and Visayan Warty Pig. As planning for the entire zone continues, the design for an Orang-utan exhibit will be developed and constructed as Phase II of the Asia Precinct. The new exhibit opened in 2006.

**A Journey Through South East Asia Asia Precinct Master Plan Melbourne Zoo Melbourne Australia, 2004 \$ 30 Million (AUS)**

As phase II of "Trail of the Elephants: A Journey Through South East Asia", this new exhibit for orang-utan and gibbon will continue the thematic and highly interpretive philosophy implemented in the elephant exhibit completed in 2003. Visitors will observe primates both from outdoor elevated walkways and from the main building. Designed as two interconnected exhibits, one enclosed in mesh and the other in an open-air space, visitors will be introduced to the animal enrichment procedures conducted at the zoo as well as the ongoing rehabilitation experiments being implemented at nature reserves in Borneo, Kalamantan, and Indonesia.

Animal care staff will work with orang-utans at three separate "training walls" and interact with visitors on the walkways and in a discovery room which is adjacent to a two-story training room. The training room is equipped with multiple climbing structures, can be opened out into the mesh enclosure, and employs deep mulch flooring substrate for animal safety and ease of maintenance.

The main building and the discovery room are highly interactive and interpretive and include large glass viewing windows into the exhibit spaces. Animal staff and volunteers will engage visitors with demonstrations and workshops on puzzle feeders and other enrichment devices seen in the exhibits. A small activity zone will include interactive play elements where children can mimic the behavior of the animals.

**Orang-utan Forest Sanctuary**  
**Melbourne Zoo**  
**Melbourne Australia**  
**2004**  
**\$6 Million**

Awarded the  
**Best Interpretive Practice**  
by the  
**Australian Interpretation Association**



Melbourne Zoo Melbourne, Australia



# Orang-utan Forest Sanctuary



The "Trail of the Elephants" exhibit at the Melbourne Zoo, Australia, breaks new ground by incorporating the interpretive messages into the physical plan of the exhibit and facilitating an interactive animal management program which depends upon choreographed activities and animal enrichment throughout the day.

As principal-in-charge, Jim Brighton led the efforts of the design teams in the US and Australia by developing the concepts, facilitating all client workshops, coordinating design documents, and participating in construction observation.

The exhibit facilities articulate the latest thinking about housing large groups of elephants; separate facilities for cows and bulls are incorporated in the exhibit design and the holding facilities for optimum animal health, safety and welfare.

Elephants can be rotated through three separate exhibits throughout the day providing a variety of habitats and physical features for animal enrichment and visitor enjoyment.

The "Trail of the Elephants" exemplifies the principles of habitat immersion by placing visitors literally within elephant habitats. The experience is one which is intimate, appealing to all age groups, and consistently interactive for the visitor and the elephants.

**Trail of the Elephants**  
**Melbourne Zoo**  
**Melbourne, Australia**  
**1999 to 2003**  
**\$ 11 Million (AUS)**



# Trail of the Elephants



**Architect of Record:**  
**Jones & Jones, Seattle**  
**Principal-in-Charge:**  
**Jim Brighton, ASLA**

**Awarded with the**  
**National Award for Excellence**  
**in Heritage Interpretation**  
**by**  
**Interpretation Australia**  
**Association**

Melbourne Zoo, Melbourne, Australia

# Florida: Mission Everglades

The native Florida exhibits at the Miami Metro Zoo will highlight the unique habitats and animals of South Florida. The exhibits encourage exceptional interactivity between visitors and animals.

The client encouraged PJA to find creative ways to involve their visitors in experiences that were fun, memorable and unique. The 5 acre multispecies exhibit zone includes an adventure boat ride, an interactive eagles nest, a crocodile crawl, an alligator bridge challenge, an otter slide, a bear den tunnel and a bobcat tree-house. Visitors will view animals underwater, in the tree-tops, underground, and from directly above their watery habitats. The fauna and flora collection will highlight five of the major habitat types evident in the Everglades, as well as the rich aquatic habitats in the shallow waters of Florida Bay.

The meandering air-boat ride has additional animal viewing combined with theatrical and cultural elements along the banks of the river. A children's play area within the confines of the exhibit complex incorporates a whimsical theme of "A Day at the Beach" where kids and adults will play among a variety of sculptures representative of the native animal species of Florida. The total experience will be one that is spontaneous, highly interactive, and entertaining for children of all ages.



**Florida: Mission  
Everglades Exhibit  
Zoo Miami  
Miami, FL  
2008-Present  
\$24 Million**

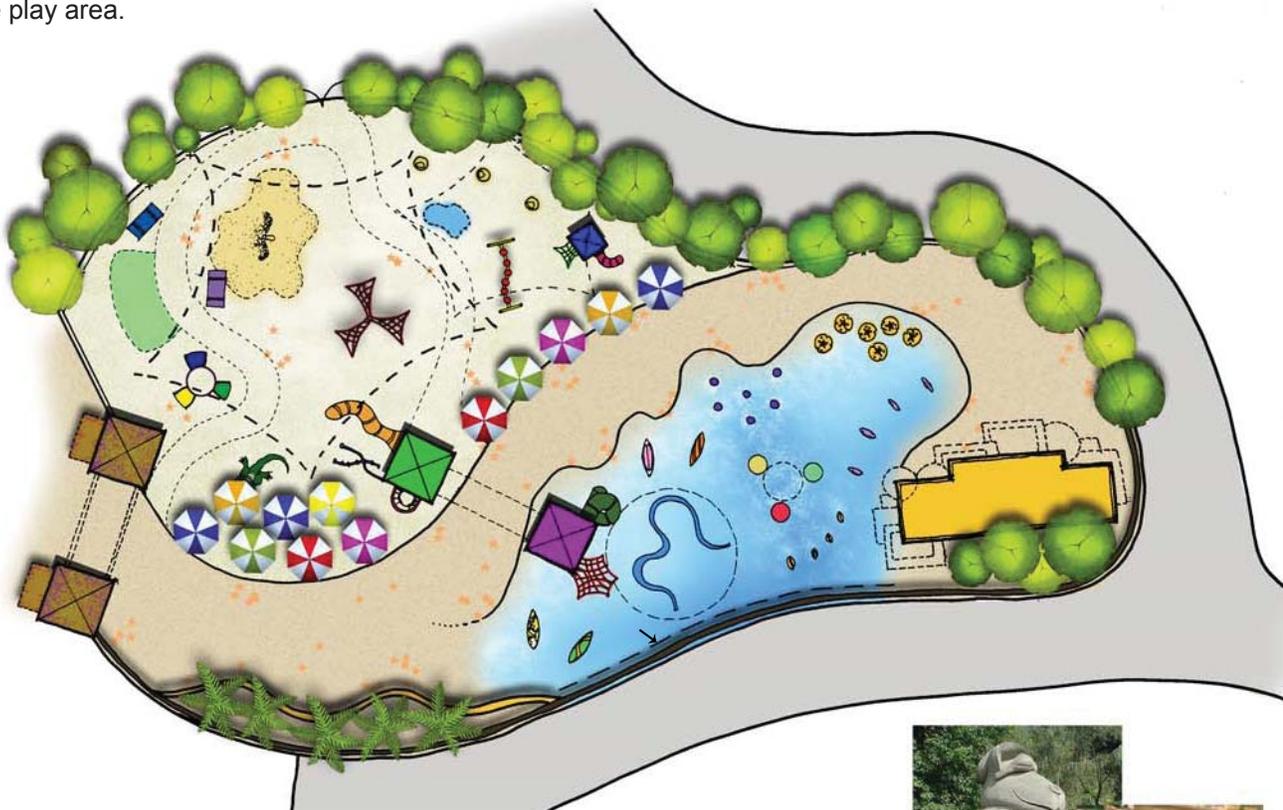


Zoo Miami, Miami, FL

# A Day at the Beach Children Playground

Zoo Miami, Miami, FL

During the Visioning Plan for the Florida Exhibit at Zoo Miami, PJA design a new children playground. This was a delightful play area, themed as "A Day at the Beach" where animal sculptures, climbing structures, and water play features encouraged active play. With a separate entry gateway, visitors arrive at a fanciful themed surf shack that functions as a small snack and beverage stand serving those in the play area.



All play structures and activities relate to the beach theme and these include activities appropriate for children with disabilities.

Play elements are shaded by overhead fabric shade structures and umbrellas. All surfaces and activities meets DCPD playground criteria.



**Visioning Plan  
Children Playground  
Zoo Miami  
Miami, FL  
2008  
\$750,000**

# Florida: Mission Everglades Aquarium Concept

Zoo Miami, Miami, FL

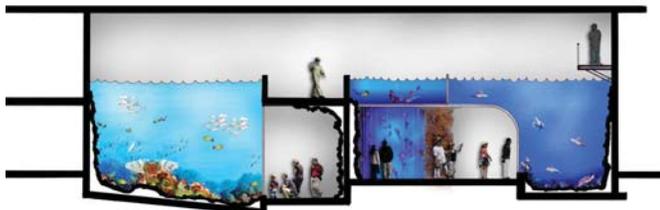
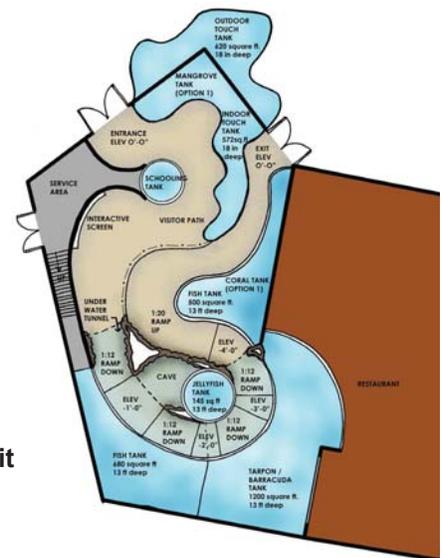
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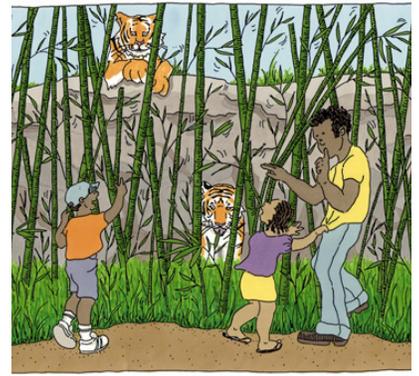
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Florida: Mission Everglades Exhibit  
Zoo Miami  
Miami, FL  
2008





# Tiger Tales

## Mill Mountain Zoo, Roanoke, VA

The Mill Mountain Zoo is a small community-based facility which limits its animal collection to temperate Asian species and has strong ties to its sister city in Korea.

The new Amur Tiger exhibit will create a new precinct within the zoo that celebrates the tiger and creates interactive interpretation stations throughout the exhibit. Visitors will experience a variety of viewing opportunities, each with a different theme and an ever-changing topographic position relative to the tigers. The perception of size and dominance changes during the descent along the forest trail. The wall-of-windows view is whimsical and fun, the gateway view is steeped in cultural mystery, the forest cabin offers shelter and information whilst tigers are seen underwater swimming in a pool at the base of a waterfall.

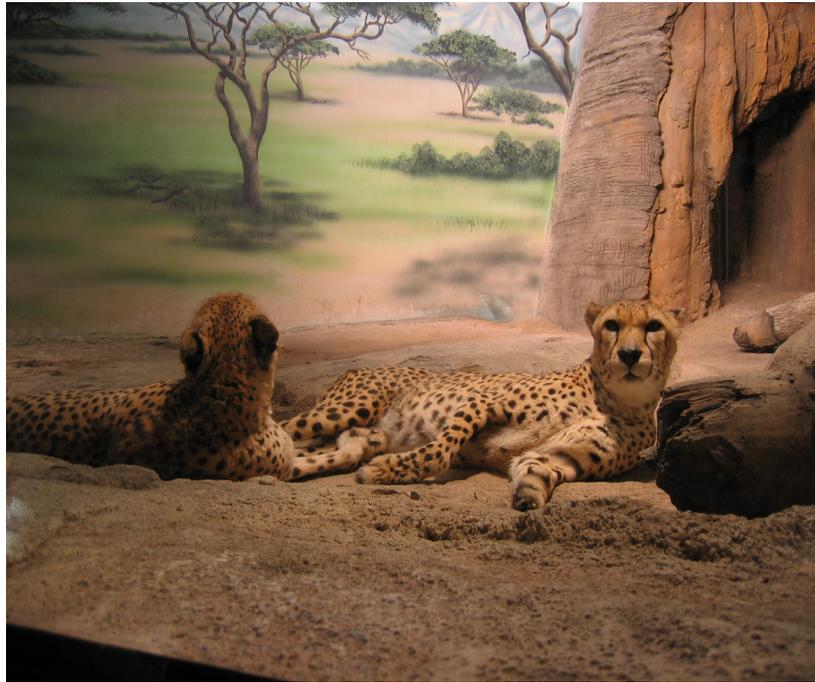


The experience is interactive, fun and entertaining and provides many vantage points to be up close and personal with the tiger and the people who are working to ensure that they survive.

**Tiger Tales**  
**Mill Mountain Zoo**  
**Roanoke, Virginia**  
**2003**  
**\$ 1.5 Million**

July 2005 saw the opening of The "Florence Mila Borchert Big Cat Country" Exhibit at the Milwaukee County Zoo. PJA was part of a design team challenged with the task of renovating a 16,000 SF., 1960's style feline house, into one cohesive, primarily large cat exhibit.

Guests are able to view and learn about cheetah, lion, hyena, amur tiger, snow leopard, red panda, and jaguar. Throughout the day, guests can also watch enrichment training and daily feedings take place as keepers use enrichment devices designed and built into the exhibit.



# Florence Mila Borchert Big Cat Country



PJA was the lead design architect, responsible for the renovation of some existing exhibits, as well as for the redesign of existing holding facilities and comissionary space. PJA was also responsible for the overall landscape design as well as the creation of a new entry sequence to the building.

While the building still holds a taxonomic collection of animals, guests can now view them as they travel from Africa to South America and then to Asia.

**Milwaukee County Zoo**  
**Milwaukee, Wisconsin**  
**2002-2005**  
**Cost: \$6 million**



PJA designed a garden geared to children from 2 to 12 years old as a part of the Missouri Botanical Garden.

At the Children's Garden, kids and adults explore a cave, pond and swamp. They divert water through the locks and dams at the river, climb onto the stranded steam boat, and have the ultimate tree house experience in the crowns of old Osage Orange trees. In the Splash Zone they cool off under the water tower, with jumping jets, a water spraying plant and hand pumps.

From the town square to the waterfall, the whole park is designed to immerse visitors small and big into "Old Missouri".

The Children's Garden is rich in opportunities for free, interactive, and exciting play that is integrated with discovery-based learning. Children pump water and learn about water rising in plant vessels; they try the steps of the bee dance; they explore the cave with it's bats and prehistoric critters. Fun and learning merge effortlessly.

**Doris I. Schnuck  
Children's Garden  
Missouri Botanical Garden  
St. Louis, Missouri  
2002 to 2006  
\$ 4.5 Million**

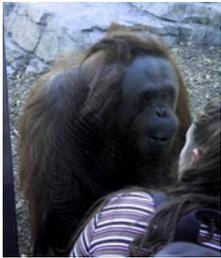


Missouri Botanical Garden, St. Louis, MO



# Children's Garden





Monkey



One of the world's foremost rescue centers for great apes, Monkey World is in the process of more than doubling in size. Major expansion is necessary to accommodate expanded rescue efforts of primates from around the world.

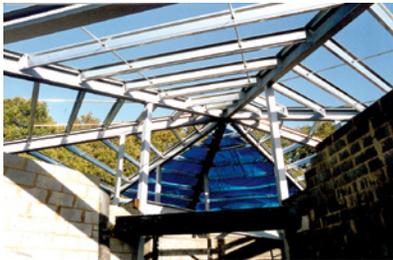
# Master Plan & Visitor Amenities

Along with the master plan, PJA developed designs for new animal holding facilities and expanded outdoor day areas. New visitor amenities including food service, gift shop and a new entry gateway were also part of the scope. These projects opened in 2001.

**Master Plan  
Monkey World  
Dorset, United Kingdom  
1999**



World, Dorset, UK



# Moody Gardens, Galveston, TX

As exhibit consultant, PJA collaborated with Morris Architects to renovate the existing rainforest pyramid at Moody Gardens. Constructed in the early nineties, the steel and glass structure needed major renovations. The client took this opportunity to create a richer animal experience by constructing an elevated walkway through the existing canopy of the mature tropical forest that has grown in the conservatory and creating a full complement of new live animal exhibits in the structure.

On the approach to the indoor environment, visitors will first encounter a large outdoor exhibit for giant river otters with an extensive river simulation and a deep diving pool. Once inside the indoor tropical forest, visitors will encounter



free flight birds, sloth, tamarin, Prevost squirrel, and butterflies from the new elevated canopy walkway high above the forest floor.

An acrylic tube full of leaf-cutter ants carrying bits of leaves disappears into the artificial rock mountain and visitors get relief from the tropical heat and humidity in the cool "Cloud Forest" exhibit area where tree frogs are exhibited.



## Moody Gardens Rainforest



**Rainforest  
Moody Gardens  
Galveston, TX  
2009 - 2011**

At ground level, visitors wind through the forests of Asia, America, and Africa viewing larger animals such as Chinese alligator, ocelot and blue duiker while also viewing smaller creatures like scorpion, millipedes, beetles, cichlids, axolotl, anaconda, lizards, and bats. In the nocturnal gallery; views of civet, prehensile porcupine, and slow loris and in the daylight gallery; chameleon, emerald tree boa, Gabon viper, and bushmaster can be seen through glass fronted enclosures. In this area, visitors again encounter the leaf cutter ants that had disappeared into the mountain, only here the ant colony is in their underground tunnels where they live, breed, and cultivate their food source from the forest leaves.

Exotic, exciting, and educational, the new rainforest experience at Moody Gardens will delight return visitors with a new look, new features, and new animal species, while attracting new visitors to the park.



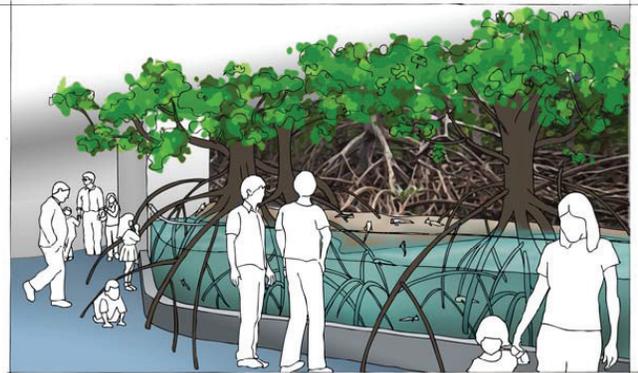
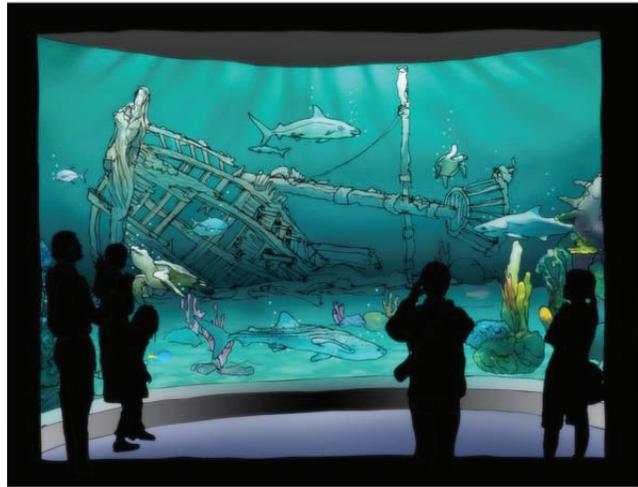
As exhibit design consultants to Morris Architects, PJA is designing new and renovated aquatic exhibits in the existing Moody Gardens aquarium pyramid.

At Moody Gardens' "Ocean Sanctuaries," we'll travel to several ocean worlds, from the cool waters of a Northern Pacific kelp forest to the depths of the Indian Ocean.

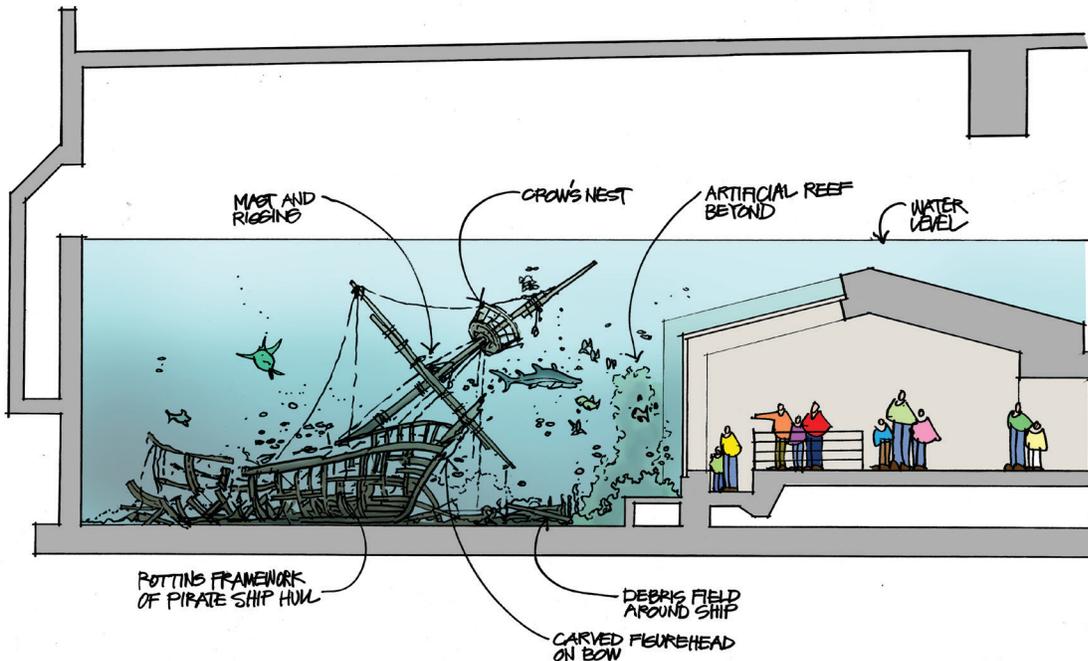
We'll find that the oceans are similar, yet different, and we'll meet the amazing plants and animals that call the oceans home.

We'll see the oceans through the eyes of local people, scientists, and conservationists. Join us on a voyage of discovery, to the sanctuaries of the oceans.

**Aquarium Renovation  
Moody Gardens  
Galveston, TX  
2008 - Present**



# Aquarium Renovation



Moody Gardens, Galveston, TX

The design team included the internationally renowned firms Pelli Clarke Pelli Architects, RAA interpretive designers, and Morris Architects. The exhibits will be housed beneath a climate controlled transparent structure that will encompass 90,000 square feet of visitor space on multiple levels.

The experience begins as visitors walk through an acrylic tube, looking at a pod of beluga whales swimming all around them. As the whales recede into the distance, visitors notice a full-grown male walrus as he spins against the glass and swims rapidly away.

Visitors ascend on a wide spiral ramp, encountering a seal almost nose to nose with an 800-pound female polar bear with a barely visible sheet of acrylic between predator and prey.

Now in the Tundra, visitors realize that the vertical journey has taken them from the extended nights of the arctic winter on the ice cap to the polar bears' summer hunting grounds.



Visitors take the winding footpath that descends dramatically back down to ground level. Along the way are arctic fox curled up in the middle of an afternoon nap, a pack of arctic wolves prowling on an escarpment, circling overhead is a snowy owl. Descending again below the white glacier, visitors feel the coolness of the dark interior. Now moving toward the gift shop and exit, visitors pass through a dramatic interactive display.



**Arktos**  
**Moody Gardens**  
**Galveston, TX**  
**2008 - 2009**

# Arktos

Moody Gardens, Galveston, TX





PJA collaborated with the campus planning firm ASG to develop a Facilities Master Plan for the National Zoo in Washington, DC. The plan redefines the look and feel of the “Nation’s Zoo” and integrates the Conservation Research Center in Front Royal, VA into an identifiable and unique entity of the Smithsonian Institution.

The zoo is situated in Rock Creek Park, a natural wilderness park cutting through the urban core of

National Zoo, Washington, DC

# National Zoo Master Plan

the city, and is unique in interpreting conservation research that is being conducted by the zoo staff and other Smithsonian entities. The new master plan strengthens the connection between the animal collection and other institutional programs, including the research center in Front Royal. Visitors will come to understand that the zoo is part of a larger “campus” of facilities that are working on conservation issues around the world and that the animals at the zoo are representatives of their global efforts. Innovative exhibits inspired by science are the hallmark of the National Zoo. The plan emphasizes learning and engaging local and international visitors; it sets a course for future exhibits that will become models for the rest of the zoo community.

**Master Plan  
National Zoo  
Washington, DC  
2005-2008**



# Asia Trail II

National Zoo, Washington, DC



PJA is part of a multi-disciplinary design build team that is renovating and creating new habitats for Asian elephants at the National Zoo. Our role as zoological and habitat designers includes assisting the architects with the animal management components in the new and the renovated holding building and in creating a series of new habitats that respond to the existing topography and mature vegetation on the site. The project replaces the existing animal holding facilities with a huge indoor day room for elephants and public viewing and constructs a new animal management facility for five (5) cows and two (2) bull elephants adjacent to the existing historic structure. The new three (3) acre habitats are articulated around the existing native forest native forest and existing soils will

be replaced with a sand substrate for drainage, reduction of compactions, and animal health. Two large waterholes for swimming are incorporated into the site and will be maintained by a state of the art water treatment facility. The project incorporates green technologies throughout, is sensitive to the historic buildings and landscape, and greatly expands the space for animals and public viewing.

**Asia Trail II  
Elephant Renovations  
National Zoo  
Washington, DC  
2010  
\$30 Million**

Oakland Zoo,

The new Oakland Zoo's children's zone was designed to afford intimate animal encounters in an interactive and immersive environment that caters to the youngest of the zoo's visitors.

In this secure and separate zone of the zoo, children are free to explore and experience a vast array of live animals including lemurs, free-flying bats, American alligators, river otter, and in an indoor exhibit space reptiles, amphibians, insects, and small mammals. Included within the area is a traditional animal contact area for a personal animal experience.



# Children's Adventure Zone

Oakland, CA



Live animal demonstrations are conducted regularly at a small amphitheater and interactive non-animal exhibits and animal sculptures are scattered throughout the zone. Activities include an alligator egg digging site, a lily pad bridge, a small running stream with stepping stones, and a plaster cast of a giant prehistoric alligator.

The new zoo has proven to be the most successful new exhibit at the zoo and is responsible for record breaking attendance during the first year it was open.

**Children's Adventure Zone  
Oakland Zoo  
Oakland, California  
Opened: 2005  
\$ 15 Million**

# Entry Complex

PJA remodeled the entry area of Oakland Zoo to capture the atmosphere of Lamu, a historic Port City on the island Lamu off the coast of Kenya.

The African theme integrates the entry complex with the already existing and adjoining East Africa Exhibits.

The program included a fast-food-style restaurant with indoor and outdoor dining areas, a gift shop, visitor restrooms, tickets booths, and cash control rooms.

Graphics and signage mimic authentic signs of the streetscape of Lamu and were also developed by the PJA team.

**Entry Complex**  
**Oakland Zoo**  
**Oakland, California**  
**1999 to 2001**  
**\$ 2.2 Million**

Oakland Zoo, Oakland, CA



# California!

## Oakland Zoo, Oakland CA



The Concept Plan for this new area of the zoo called California! develops the basic direction set in the previous master plan and refines the visitor amenities, animal exhibits, and the transportation to this remote area of the zoo. The new expansion zone will be more akin to a wild animal park than to a traditional zoo; animals will be viewed in large open natural habitats surrounded by the existing native plants of the site.

Visitors will be transported by an aerial tram up steep grassy hillsides and ravines thick with oaks. Arriving at the orientation plaza visitors will be introduced to the natural occurrences of extinction, geologic change, and human impacts on the natural environment of California.

A short walk down a wooden boardwalk will provide visitors with excellent views of a wolf pack and the secretive jaguar whose historical range stretched north into California. Grizzly bear roam freely across the open grassland, mountain lion will be viewed from beneath the leafy canopy of mature oaks, and black bear range over a steep hillside of widely scattered oak trees.

An interpretive center will exhibit live animals and interactive components that present current information about native species in the bay area. Returning back to the tram station, visitors will have an opportunity to purchase gift items or dine at the view restaurant in the visitor center.

**California!  
Oakland Zoo  
Oakland, California  
2006-2007  
\$ 32 Million**



# California!

## Adventure Play



Oakland Zoo, Oakland, CA

The California adventure play zone is located in a new area of the zoo called California! and it continues the great success of the Children's Zoo activities. The new play zone is themed to create parallel play elements which simulate activities similar to the animal collections represented in the live animal exhibits. These include bear, cougar, jaguar, eagle and condor.

The central icon for the play area is a huge grizzly bear sculpture that children can climb around on, crawl beneath, and slide down. Other activities include jumping, balancing, pouncing, and perching. The discovery trail

allows kids to discover small mammals hidden along the trail, embedded in logs and stumps, and for "getting lost" in vegetation. Another area of the play zone includes activities associated with some of the native invertebrate animals, such as bees, dragonflies and butterflies. This area is located within an area planted with species that will attract local invertebrates to frequent during various times of the year.

An area adjacent to the play zone allows parents and grandparents to sit comfortably beneath shade trees and watch the children play and explore freely within the fenced area of the activity zone.

California! Adventure Play  
Oakland Zoo, Oakland, CA  
Budget: \$1.5 M  
Currently in Design





Ocean Park is a premier Hong Kong destination combining theme park and zoo elements. Polar Adventure will include two new exhibit buildings and a new state-of-the-art thrill ride. The North Pole Building features a 1.2 million-gallon sea water exhibit, providing generous habitat for belugas, walrus, and seals.

Visitors will enter the exhibit at the underwater level and experience the animals close up from underwater glass tunnels and panoramic views in an artificial ice cave.

# Polar Adventure

On the upper level of the building, the visitors will be able to cross out onto the water via bridges to the iceberg and the haul-outs of walrus and enjoy animal shows from theater seating.

In the South Pole Building, the visitors will find themselves walking on the sea ice of the Antarctic Ocean watching penguins shooting through an ice labyrinth of tunnels underfoot. Three species of penguins will live in naturalistic habitats simulating the shores of Subantarctic Islands.

The sunken visitor level will allow for simultaneous above water and underwater views of the 250 thousand-gallon sea water exhibit. The exhibits will be kept alternately dark to simulate the Arctic and Antarctic winters both displaying breathtaking auroras.

Ice Play, a third area in the building complex, will invite Hong Kong children to hands-on interaction with ice and snow. In addition to the exhibit design, PJA is also responsible for graphics and interpretation of the exhibits.

**Polar Adventure**  
**Ocean Park Hong Kong**  
**2006 to 2012**  
**\$30 Million**



Ocean Park Hong Kong

In July of 2012, Ocean Park opened their new Polar Adventure, featuring animals from both the North Pole and South Pole. Along with these exhibits, two new guest amenities were also made available, Tuxedos, a dine with the penguins venue, and The Lodge, a new, themed gift shop.

Tuxedos is the world's first theme park restaurant offering views of over 70 penguins swimming in their habitat, as well as low-carbon menu options. Themed on penguins and the Antarctic region, Tuxedos presents diners with a choice of low-carbon, organic and sustainable ingredients, all sourced from local and mainland suppliers.

The Lodge, based on architecture from the Arctic region, provides a variety of merchandise items that are made from eco-friendly materials and carry a strong education and conservation message. Together both restaurant and gift shop help strengthen the conservation message that is so important at Ocean Park.

**Polar Adventure**  
**Ocean Park Hong Kong**  
**2006 to 2012**  
**\$ 30 Million**



# Polar Adventure





# Master Plan

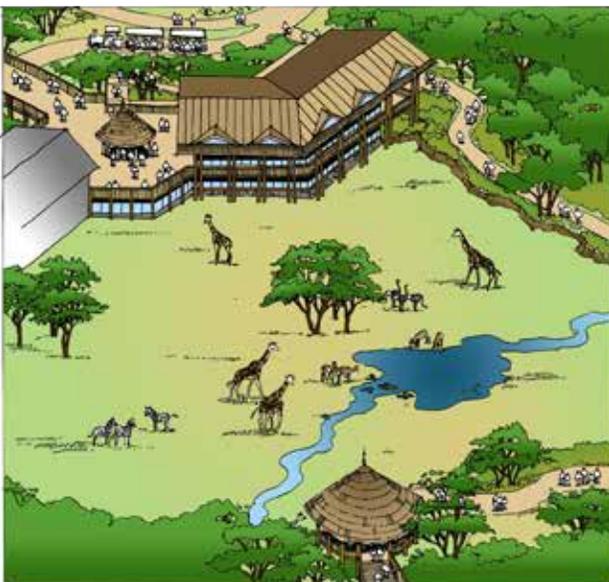
The master plan for the OKC Zoo was developed during a series of interdisciplinary workshops involving the client group and a team of consultants that included architects, landscape architects, engineers, interpretive designers, graphic designers, cost estimators, operations experts, and business planners.

The plan synthesizes the Zoo's desire to temper the goals and objectives of the animal collection,

the visitor experience, and the financial viability of the institution. The outcome is that decisions about new animal exhibits, visitor amenities, and revenue opportunities are integrated into a 10 year improvement strategy that is exciting and fiscally sound.

All existing exhibits and facilities not proposed for renovation or removal were evaluated, and recommendations for upgrades and improvement were included in the master plan report. Infrastructure improvements were also identified and budgeted so that there will be fewer surprises as new construction is initiated.

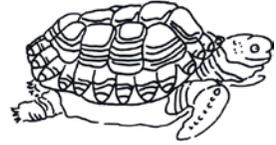
Proposed improvements include resolution of visitor and service circulation conflicts, improved visitor facilities such as restaurants, cafes, restrooms, and gift shops, improved wayfinding and interpretive graphics, new activity based venues which will appeal to visitors looking for a bit of a challenge, improvements to existing animal exhibits, and exciting new animal exhibits which add to the visitor experience and to the diversity of species on exhibit.



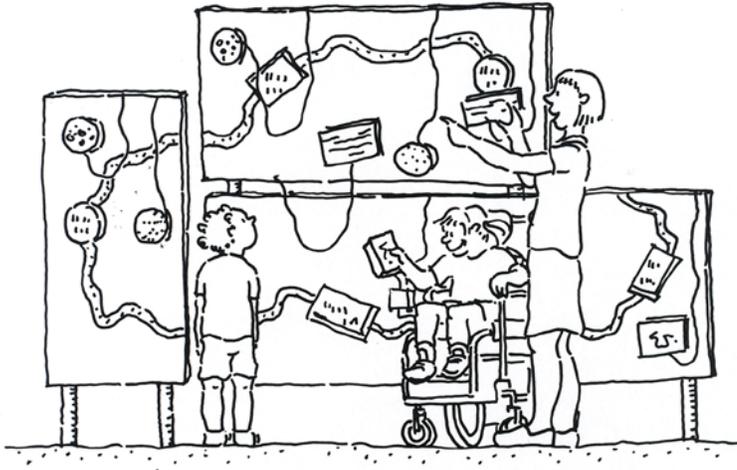
Oklahoma City Zoo Master Plan  
Oklahoma City, OK  
2010  
6 acres



# A Walk Through Time



Pine Jog EEC, West Palm Beach, FL



The Pine Jog Environmental Education Center is located on 150 acres of undeveloped land and is a sanctuary for nature amid intense residential and commercial development.

The Pine Jog Interpretive Trail "A Walk Through Time" will employ a wide array of interpretive strategies and combine graphics, interactive games, art, science, and cultural exhibits to develop public understanding of the effects of development on the Florida environment.



The interpretive trail presents six stations sequentially: The geology of south Florida, how native people live off the land, how humans transformed the landscape, Bill Hutchins' life, the consequences of increased development, and how to live in Florida in a sustainable way.

A visit to "A Walk Through Time" will illustrate ecological principles to children and the general public in a fun and entertaining way. Interactive, inclusive, and entertaining, the trail will teach environmental lessons within the context of the place, the people, and the landscape that is Pine Jog.

architects landscape architects, p.s.



**A Walk Through Time**  
**Pine Jog Interpretive Trail**  
**Pine Jog Environmental**  
**Education Center**  
**West Palm Beach, Florida**  
**2003**  
**\$ 1.5 Million**

# Africa Expansion

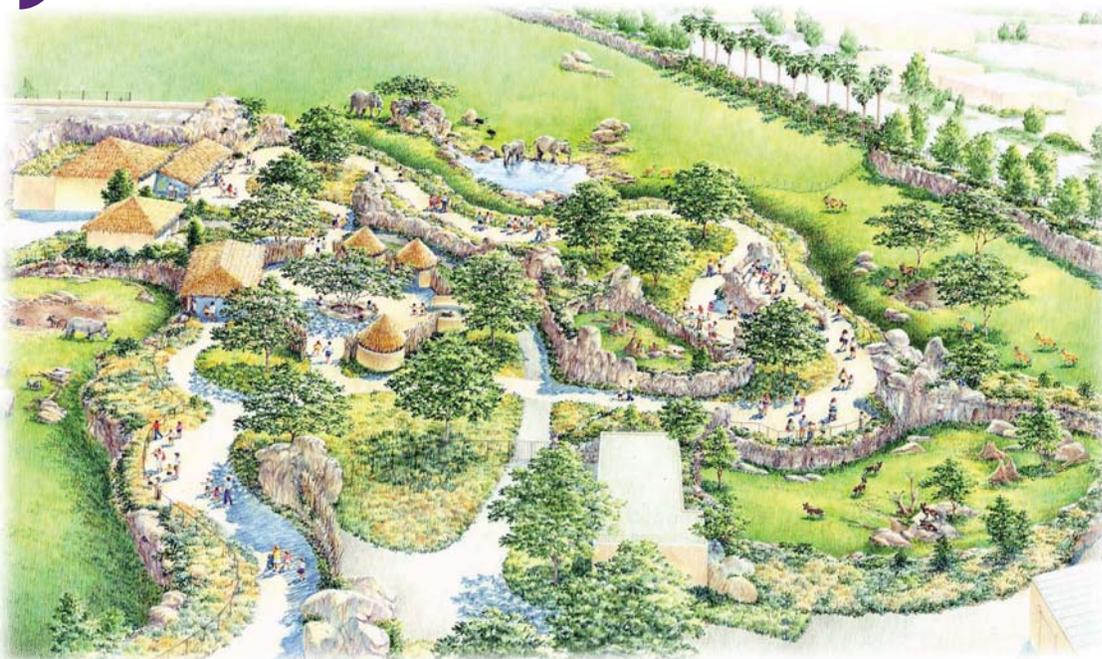
Reid Park Zoo, Tucson, AZ

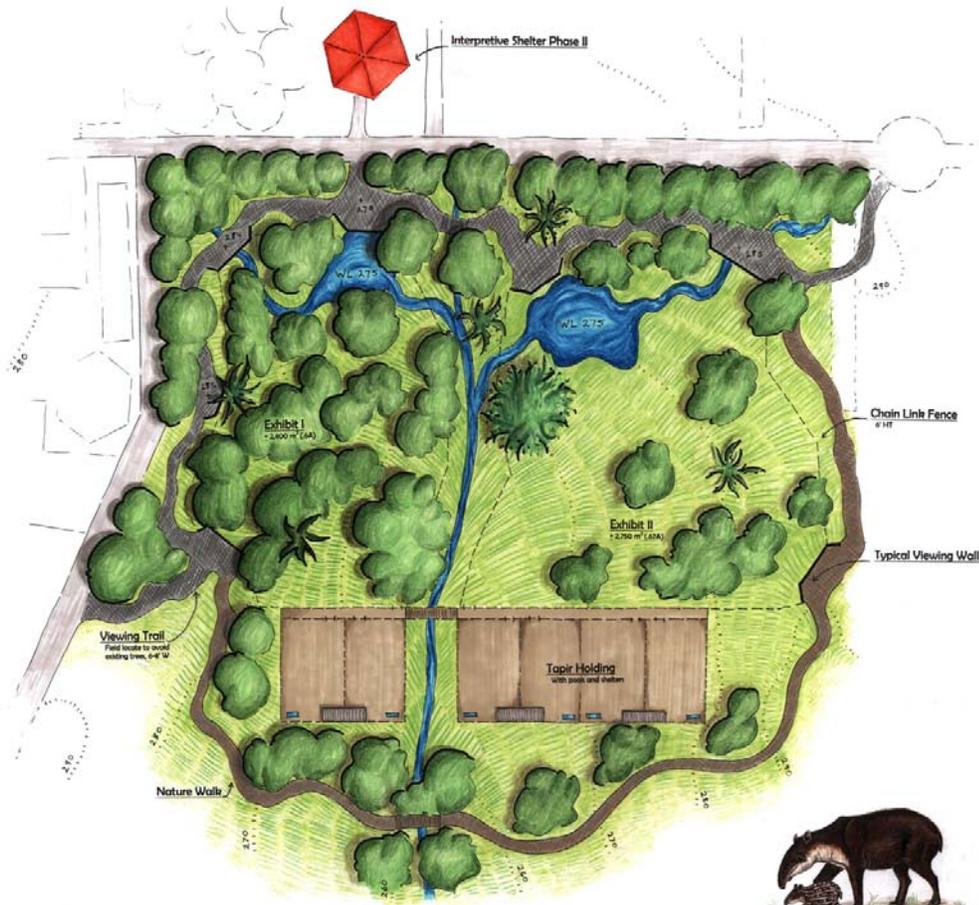
The new exhibits encompass a five acre expansion of the park's property and will include new animal exhibits and visitor amenities. The experience will be one that immerses visitors in a savanna environment and contains dramatic views of elephant, eland, gazelle, antelope, and ostrich in expansive, free range habitats. Rhino, cheetah or wild dogs, warthogs, and meerkats may also be encountered along the trail, and visitors get up-close looks at some of the smaller creatures of the savanna. The primary species to be exhibited, the elephant, will roam a 3.5 acre habitat that contains natural enrichment elements such as a watering hole, a mud wallow, and earth mounds.



**Africa Expansion**  
**Reid Park Zoo**  
**Tucson, Arizona**  
**2012**  
**\$9.5 Million**

Additional artificial enrichments such as puzzle feeders, dig-pits, push-poles, and other devices will be scattered throughout the exhibit space. In the Boma Camp, traditional African structures of mud and thatch create a place for special events, educational programs, overnight camping, and cultural interpretation. The immersion style exhibit will create an experience similar to Africa by incorporating natural landscape features, fauna, flora, geology, and architectural elements native to the African savanna.





# Tapir Exhibit

This exhibit was the brainchild of the Director of the Houston Zoo and the Mayor of Panama City and is the first of its kind at the zoo. Tapirs have long been one of the most known and endangered animals in Panama and one of the most popular animals at the Summit Zoo, yet their enclosures were small, not in a prominent location and not very aesthetically attractive.

PJA was asked to assist in the site selection and design of a new exhibit that would place Tapirs in a prominent location, provide adequate space and animal management facilities, and would create an exhibit that is both beautiful and engaging for zoo visitors. The six holding areas each include shade shelters, individual pools, drinker

and feeding areas, and access to either exhibit area via a transfer chute.

The new exhibit, which opened in 2004 during the 3rd Annual International Tapir Symposium, is perhaps the largest Tapir enclosure in the world and displays the animals in an environment similar to their natural habitat. Each of the two exhibits contain forested and open areas, a large deep pool capable of accommodating multiple animals, and a variety of topography and substrate conditions. Large public viewing decks are placed at locations that afford excellent views of the Tapirs and place the visitors in an atmosphere that emphasizes the exotic tropical vegetation of the garden.

**Tapir Exhibit**  
**Summit Zoo**  
**Panama City, Panama**  
**2003 to 2004**  
**\$ 5 Million**



With the Rainforest Kidzworld the Singapore Zoo adds a major new family attraction to its venue.

The first part of the area is given over to live interaction with domestic animals and pets. Visitors watch animal shows and admire the feats of trained pets in the amphitheater. In the animal contact zone, children interact with domestic animals like goats, chickens, donkeys and rabbits, and learn from experienced staff about the best way to make a home for a pet.

# RainForest KidzWorld

Singapore Zoo, Singapore



**RainForest KidzWorld**  
Singapore Zoo  
Singapore  
2006 - 2008  
\$ 6 Million

Pony rides await the visitors at the Pony Ring. Carriage rides for the whole family circle the terrain on the former train terrace.

At the water plaza surrounded by the whimsical restaurant and birthday pavilions, children climb waterfalls and play on the water playground.

In addition, the adventure trail starts here: Like in a real-life computer game, children have to master one challenge to enter the next one. Visitors travel over floating lily pads and log bridges entering the jungle to reach Piranha Lake which they cross on a raft. They built shelters, sail on a zipline over the crocodile-infested mud swamp, and scale the rope climb into a cave. The path up and around the central mountain lets the visitors discover insects, spiders, and reptiles in naturalistic habitats.



The River Safari takes visitors to the five great rivers of the world. This amazing adventure begins at the Base Camp, with shops and restaurants designed to evoke the towns of native fishermen along the banks of rivers.

The exploration starts with the Mekong river, where visitors encounter the giant catfish and other native animals of the region. In the frozen tundra, polar bears can be observed in their natural habitat. Everyone will have the opportunity to explore very cold swimming pools while enjoying the fascinating experience of "swimming with the polar bears".

Another river that visitors will experience is the Singapore River. They will have the opportunity to live the history of the tigers that invaded Singapore; from the fast speed of a water ride that will captivate them with its great splashes of water, to a narrow escape from the claws of the tigers.

Once in the tranquility of the central plaza, they will be able to choose between enjoying a relaxing restaurant with three different ocean exhibits or beginning another new adventure in the desert Arab market. After strolling past camels in the marketplace, visitors will find themselves in a flooded temple by the river Nile, which will be invaded with dangerous hippos and hungry crocodiles.

The last river that visitors will explore is the Amazon river. In a slow but exciting boat ride through the forest, the whole family will be able to enjoy exhibits of interesting animals native to this area.

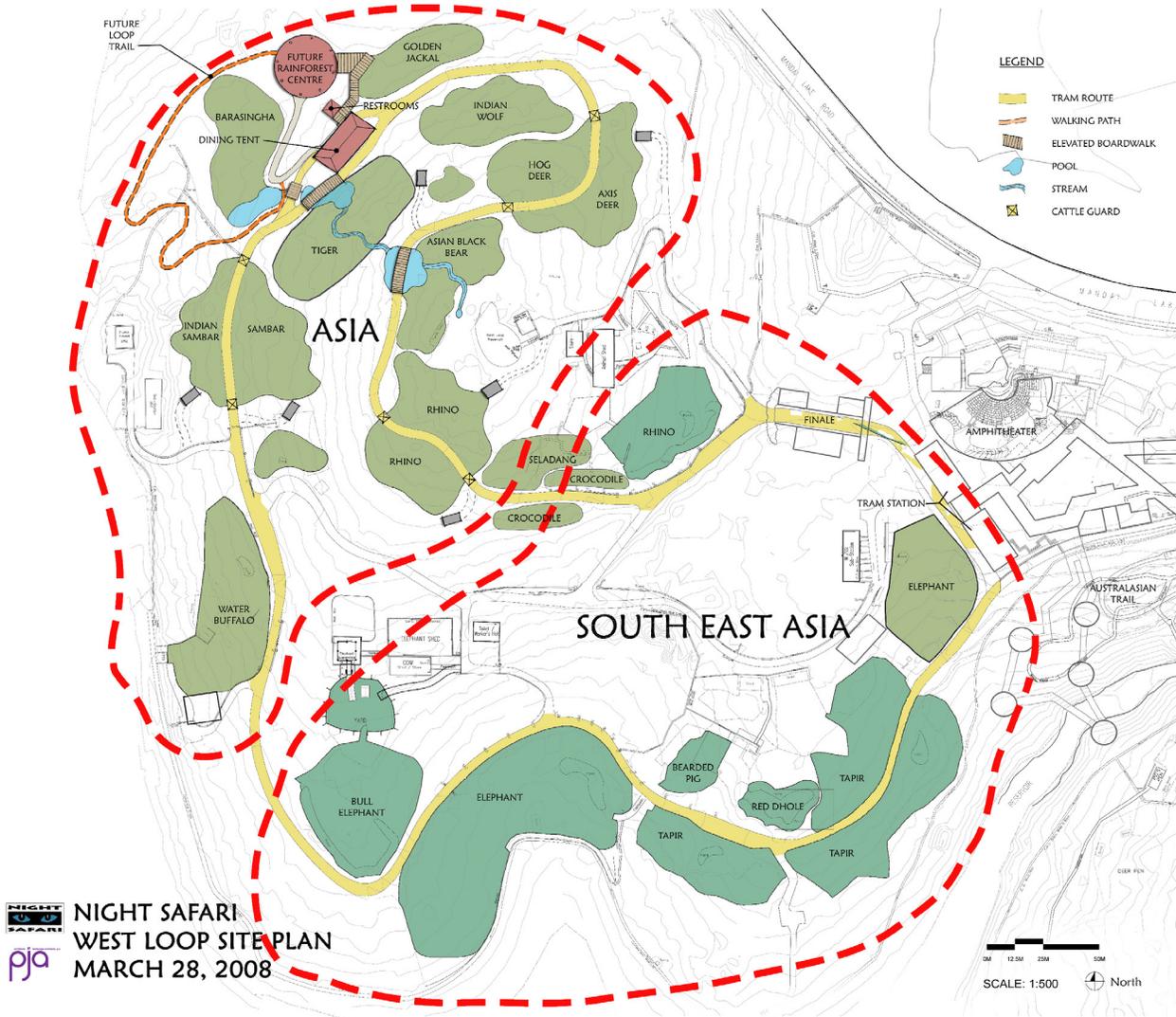


Wildlife Reserves Singapore

# River Safari

River Safari  
Wildlife Reserves Singapore  
2006 to 2012

architects  landscape architects, p.s.  
**pja**



## Night Safari Master Planning & Exhibit Concepts

In addition to our work at the Singapore Zoo, PJA consulted with the Night Safari staff to develop a conceptual master plan for the expansion of the safari experience into the previously undeveloped west loop zone and conceptual designs for three new major exhibits for the safari park. The west loop expansion will exhibit animals from Asia. The feature exhibits include tiger, golden jackal, Indian wold, sambar, barasingha, Indian rhino, hog deer, sxis deer, and black bear. A new west lodge includes visitor services, food, retail, and a series of small exhibits where small mammals, insects, and amphibians could be exhibited.

The new exhibits include major redevelopment of the amphitheater, the ride load area, the Valley of the Giants trail, the Fishing Cat Trail, and a highly theatrical finale experience which places tigers and water buffalo in close proximity to visitors.

In combination the new exhibits will increase animal and visitor interactivity and excitement to the pedestrian experience.

The master plan and the exhibit concepts include enough detailed information, photo reference, and illustrations to develop conceptual budgets, assess visitor experience, and evaluate entertainment value.



**Night Safari  
 Wildlife Reserves Singapore  
 2006-2008**

# Wildlife Sanctuary and Conservation Center

Soon the Sir Bani Yas Wildlife Sanctuary and Conservation Center will provide an even more engaging experience for guests, thanks to an exciting new thematic overlay that promises to immerse them in a compelling, interactive zoological adventure throughout much of the sprawling 600-hectare reserve.

Sir Bani Yas



*Arabian Ark Concept*

PJA and EDG worked together to propose two potential storylines for this thematic overlay: the “Arabian Ark,” and “Search for Sheikh Zayed’s Treasures of Arabia.”

While each zoological adventure is distinct from the others, both concepts feature hands-on experiences that are sensitive to the welfare of the island’s animal populations.

They also allow guests to encounter the animals in habitats that use unobtrusive “invisible barriers” to separate them from visitors and from each other as needed.

In addition, multiple modes of “green” guest transportation are included—from electric vehicles to mountain bikes and horses—along with activities such as night time safari walks, designed to showcase nature and seamlessly convey a variety of profound and inspiring conservation messages.



Sir Bani Yas Wildlife Sanctuary and Conservation Center 2011



*Search for Sheikh Zayed's Treasures of Arabia Concept*



# Master Plan

## TBILISI ZOO MASTER PLAN VOYAGE OF DISCOVERY



**THE SILK ROAD**  
"ADVENTURES OF MARCO POLO"

17. PANDA VILLAGE
18. SCOTTISH DEER
19. SWISS REEFS
20. SAFF LANCEOLATA TURT
21. HALLLOW WOLF
22. PULVER EXHIBIT
23. PANDA VILLAGE
24. PULVER EXHIBIT
25. WILD DEER
26. WOLF
27. PANDA VILLAGE
28. WOLF
29. WOLF
30. WOLF
31. WOLF

**THE HEART OF AFRICA**  
"STANLEY'S QUEST TO FIND LIVINGSTONE"

32. SAFF LANCEOLATA TURT
33. MAMMOTH
34. WOLF
35. WOLF
36. WOLF
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38. WOLF
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**THE NEW WORLD DISCOVERIES**  
LEWIS & CLARK: "SEARCH FOR THE NORTHWEST PASSAGE"

61. ENGLISH HORNED OWL
62. TROPICAL BIRD AVIARY
63. WOLF
64. WOLF
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JAMES COOK: "VOYAGES TO TERRA AUSTRALIS"

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100. WOLF

ALEXANDER VON HUMBOLDT: "THE RAINFOREST EXPEDITION"

101. WOLF
102. WOLF
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107. WOLF
108. WOLF
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119. WOLF
120. WOLF

**SERVICE COMPLEX**

79. MAINTENANCE SHOP & EQUIPMENT STORAGE
80. STAFF FACILITIES / COMMISSARY
81. VETERINARY FACILITIES
82. NURSERY BROODER FARM
83. OFFVIEW HOLDING BREEDING CENTER
84. WATER TREATMENT



SCALE 1:1000 M

**ENTRY COMPLEX**

1. VISITOR DROP OFF AREA
2. TICKETING AREA / RESTROOM
3. AQUARIUM
4. NIGHT ZOO
5. TROPICAL BIRD AVIARY AND NESTERY
6. WADESS AVIARY
7. CARBONATING BIRD AVIARY
8. OWL AVIARY
9. PREDATOR BIRD AVIARY
10. HEN-LIKE BIRD AVIARY
11. GUEST SERVICES
12. RESTAURANT
13. GIFT SHOP
14. FIRST-AID AND SECURITY
15. EDUCATIONAL CENTER
16. ADMINISTRATION

**LEGEND**

- Public Building
- Service / Holding Building
- Outdoor Holding
- Water Body
- Visitor Path
- Service Road
- Train Track

Tbilisi Zoo, Tbilisi, Georgia

PJA, along with three other international design firms, was invited to compete in creating a master plan for a new Tbilisi Zoo. PJA's concept capitalizes on the site's topography, Tbilisi's geographic location, and Georgia's rich history as the crossroads between Europe and Asia.

The organizational theme for the Tbilisi Zoo is 'Voyage of Discovery'. It is based on the notion that the visitor is on a journey to see the world's flora and fauna, following established

routes of other famous explorers. It is a string of places connected by travelers and explorers from different times and places. From the Silk Road to the New World to the Heart of Africa, zoo visitors will have the opportunity to trace Marco Polo's footsteps, Stanley and Livingstone's safaris, or James Cook's ocean voyages.

Interpretively, it provides a rich tapestry of history, culture and nature. It is a plan that creates a dialogue with nature through the use of and applications of ecological principles. It proposes

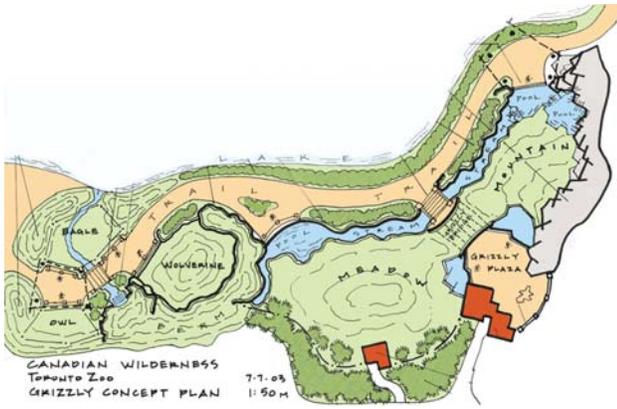
a major shift in attitudes towards animals and the habitats they live in - from old, cramped cages to open naturalistic enclosures that simulate their native habitats.

**Master Plan  
Tbilisi Zoo  
Tbilisi, Georgia  
2010**

**Reference: Maya Tskitishvili (Mrs.)  
Cartu Management Ltd  
phone +995 32 292219  
fax +995 32 230657  
maya@cartugroup.com]**

architects | landscape architects, p.s.





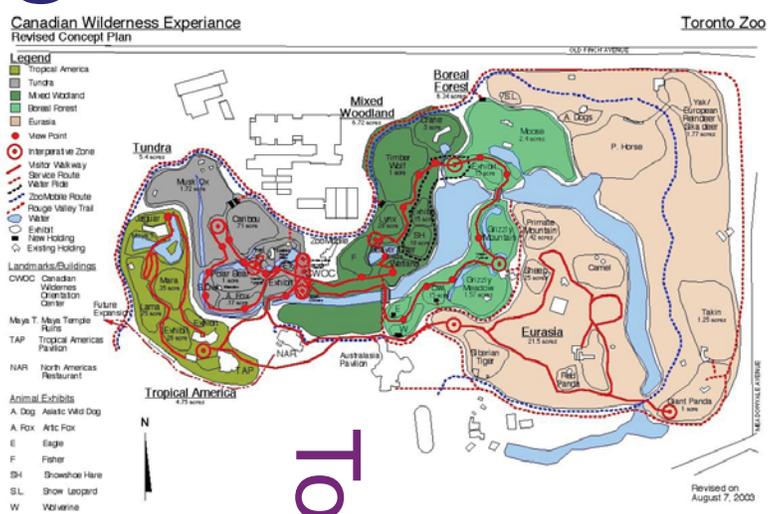
architects landscape architects, p.s.  
**pja**  
Toronto Zoo

The Toronto Zoo wants to highlight the native animals of Canada and the many conservation programs which the zoo supports. The new precinct will renovate a number of existing facilities including the Polar Bear exhibit and will take visitors on an immersive trek into the wilds of Canada.

Interpretive shelters have been located throughout the precinct and afford both visitor services, educational exhibits, small animal exhibits, and provide comfort and shelter during the winter months. The experience will include large naturalistic habitats for reindeer, moose, wolves, grizzly bear, wolverine, musk oxen, and polar

# Canadian Wilderness Master Plan

Canadian Wilderness Feasibility Study with Balind Architects Toronto Zoo Toronto, Canada 2003 \$ 20 Million (Canada)



Plan by Balind Architects

Toronto, Canada

bear, and aquatic habitats for beaver, river otters, fish, and amphibian species. The existing Americas Pavilion will be renovated for the exhibition of tropical American species that require climate control and will connect to outdoor exhibits for more cold hardy species such as Jaguar, Mara, Llama and Guanaco, Puma and Capybara.

A major orientation and interpretive center, including exhibits, café and gift shop will highlight ongoing Canadian wildlife conservation programs by governmental agencies and by the zoo.



# Giant Panda



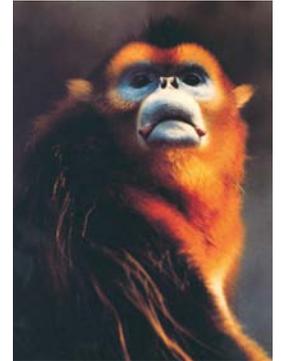
A walk through the new Giant Panda Exhibit planned for the Toronto Zoo will bring visitors in contact with the animal's natural habitat, cultural context, and companion animal species; such as Golden Monkey. Thematically appropriate architecture will provide the required indoor exhibit space necessary in Toronto's harsh winter climate and sultry summer weather. The wood and stone structures of the Qiang people will provide a village setting for visitor services and will accommodate the huge crowds that are expected to visit the exhibit.

The interpretive hall will educate visitors about the situation of wild panda populations and what is being done to protect and preserve panda habitat in China. Separate animal care and science/research wings will provide the most modern care and study capabilities possible. Indoor exhibit space will be sized to provide adequate space and enrichment for the animals.

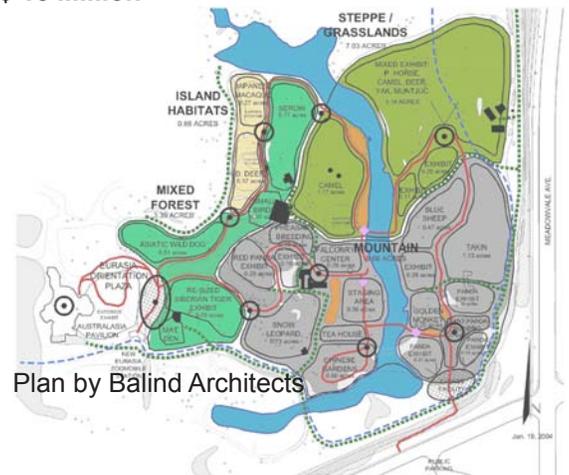


Toronto Zoo, Toronto, Canada

# Exhibit



Giant Panda Exhibit  
with Balind Architects  
Toronto Zoo, Canada  
2004  
\$ 15 Million



Plan by Balind Architects

# Tropical Rainforest & Animal Facilities

The implementation of the Tracy Aviary master plan will see construction of a new indoor tropical aviary, two new exterior exhibits, a new central visitor plaza, a new bird show amphitheater and holding facility, a new bird holding building and the renovation of an existing lorikeet holding facility. This final phase will mark the completion of the master plan that aims to revitalize the Aviary and place it on a substantially stronger financial footing.



Tracy Aviary, Salt Lake City UT



## Tropical Rainforest Exhibit

The new 3200 SF climate-controlled indoor exhibit will represent the rich biological diversity of tropical birds and plants of the rainforests of the Americas. The experience will be fun for children with opportunities for play and physical activities while providing an intimate, interactive and immersive educational experience for visitors of all ages. The rainforest experience will immerse visitors in lush tropical vegetation surrounded by birds in the tree tops, foraging on the ground and swimming in the tranquil pools that are fed by a meandering stream. The adventurous may navigate a shallow pond on oversize wobbling lily pads or cross a stream on a precarious narrow rope bridge. The visitor may also find themselves in the middle of a real tropical rainstorm – one of many timed to occur throughout the day. An adjacent play area will provide fun activities for children themed around tropical birds, water or other experiences you may find on the rainforest floor or in the canopies.



BUILDING SECTION 1

**Phase 2C**  
**Tracy Aviary**  
**Salt Lake City, UT**  
**2011 - 2013**  
**\$5.5 Million**

architects landscape architects, p.s.



# Tropical Rainforest & Animal Facilities

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Tracy Aviary, Salt Lake City UT



## Bird Program Building

Completed in early 2013, the new program holding building contains keeper space, indoor climate controlled bird mews, and outdoor public viewing aviaries.

The building and its components were designed and constructed to provide maximum flexibility, ease of management, bird and keeper safety.

The building is located directly adjacent to a new outdoor amphitheater for public demonstration and flight shows.

PJA worked collaboratively with aviary staff and AJC Architects, the Architect of Record, and caging was custom fabricated by Corners Limited.

**Phase 2C**  
**Tracy Aviary**  
**Salt Lake City, UT**  
**2011 - 2013**  
**\$400,000**





PJA created a Master Plan for the largest animal park in Tunisia to date. Friguia includes visions of the Four Corners of Africa. These four distinct regions, North, South, West and East Africa played an important role in the overall thematic quality of exhibits and amenities during Conceptual and Schematic Design.

Initial construction used approximately 60% of the overall 100-acre site. There is room for expansion in each of the four sections over the next ten years. The Park opened in the Summer of 2000.

**Master Plan  
Friguia Animal Park  
Port El Kantaoui, Tunisia  
1998**

# Master Plan



architects landscape architects, p.s.



# Wildlife Safari Park

United Arab Emirates

The site is over 500 acres of undeveloped desert landscape. This park is a hybrid between a zoo, a night zoo, a safari park, a theme park, and resort, all celebrating the connections and interactions between man and animals. The conceptual focus of this park is on creating authentic places and memorable experiences with wildlife. Visitors will enter through a re-created Arab village street where they can orient themselves to the day's visit among retail, dining, and theater venues. At the end of the entry village is the transport hub where visitors can start their journey by foot, tram, or monorail. For those days when climate discourages walking, visitors have the option of climate controlled exhibit buildings for more comfortable animal viewing.



CARNIVORE DRIVE THROUGH POV

Rainforest, and African Dry Woodland.

The concept plan also includes a drive-thru open-range savanna and desert experience through Africa and Arabia by safari bus. For a more intimate and dangerous experience, visitors can choose the Carnivore SUV which will bring them into contact with lions, tigers and crocodiles. A separate animal inspired amusement ride area and kid's play area will add to the family friendly environment and provide fun and entertainment for visitors of all ages.

The animal areas are organized both zoo-geographically and bi-climatically. The walking areas are organized into six major zones: Asian Grasslands, Asian Rainforest, South America, Australia, African

**Wildlife Safari Park  
Master Plan  
Al-Bustan UAE  
2011**



ASIAN RAINFOREST SITE SECTION - NTS



ARABIA JEEP ADVENTURE SITE SECTION - NTS



AFRICA SAFARI TRAIN SITE SECTION - NTS





Additionally, a variety of venues created for children are integral to the plan. An interactive interpretive zone, expanded animal contact area, thematic small animal exhibits, and an area of rides and games are proposed.

The new zoo will highlight the richness and complexity of the natural world, entertain and educate visitors, and encourage them to come back. It will gain its rightful place as a financial asset to the city and a fully realized entertainment resource for the community.

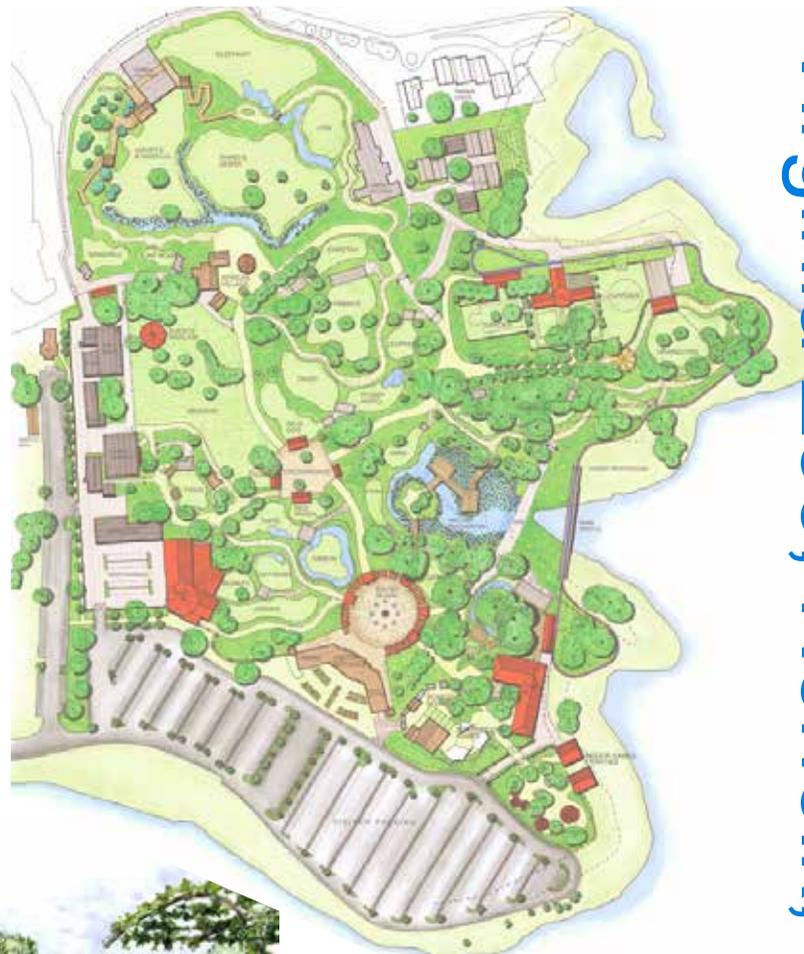
# Master Plan

The master plan creates a framework for growth and development that articulates a vision and affords flexibility to accommodate unanticipated opportunities and fiscal imperatives.

It employs an innovative model for zoo interpretation that emphasizes the charismatic appeal of individual animal species to encourage visitor participation in conservation and zoo programs.

Two indoor tropical houses and an events pavilion provide opportunities for tropical species exhibits, revenue, special function and meeting space which will extend seasonal visitation and diversify activities at the zoo.

**Master Plan  
Virginia Zoo  
Norfolk, Virginia  
2004  
\$ 100 Million**



Virginia Zoo, Norfolk, VA



This 550-acre theme park at Walt Disney World in Orlando, Florida, set new standards for habitat representation, visitor immersion, and cultural resonance, as well as advanced animal holding building design.

Patrick Janikowski and Jim Brighton took the leading roles in designing the animal exhibits and holding buildings at Animal Kingdom. The scope of work included over 300 acres of animal habitat and 30 plus holding buildings for species as diverse as Galapagos Tortoise and African Elephant.



# Disney's Animal Kingdom

Walt Disney World, Orlando, FL



The park is a celebration of animals - actual and mythical - and includes the "Safari Village" with the 'Tree of Life'; 'Africa', 'Oasis Gardens', and 'Conservation Station', an interpretive animal nursery, with behind the scenes views and a contact section.

PJA was contracted to finish work on the base park and 'Conservation Center', as well as for design and construction administration on the first expansion phase, the 'Asian Trek' and the 'Safari Lodge'.



**Disney's Animal Kingdom**  
Walt Disney World  
Orlando, Florida  
1992 to 1998  
\$ - n/a

architects  landscape architects, p.s.  
**pja**

# Giant Panda Habitats

Giant Panda Breeding Center, Wolong, China



The first phase of a new master plan was implemented by PJA when they were selected by US China Environmental Fund (USCEF) to design six new panda habitats at the Giant Panda Breeding Center in Wolong. Concept designs were prepared and reviewed by staff and our schematic designs were developed for construction by a local Chinese architectural firm. The new exhibits will replace old caged enclosures and place the animals in natural open habitats for public viewing and the welfare of the animals. This first phase of improvements at the center includes interpretive exhibits and will bring a new look to the public entry of the center.



**Giant Panda Habitats**  
**Giant Panda Breeding Center**  
**USCEF**  
**Wolong, Sichuan, China**  
**2000 to 2004**  
**4 Million Yuan**

# Giant Panda Breeding Center, Wolong, China



In 2000 Jim Brighton collaborated with members from the National Association of Interpretation (NAI) to conduct an interpretive Workshop and develop a master plan for the China Research Center for Giant Panda Conservation at Wolong in the Province of Sichuan, China. The project was funded by US China Environmental Fund (USCEF), and the Humane Society of the United States. The Thoreson Foundation funded an Interpretive Master Plan for the center which will guide the development of the facilities and visitor services in the future.



**Master Plan**  
**Giant Panda Breeding Center**  
**USCEF**  
**Sichuan, P.R. China**  
**2001 to 2003**



The team studied the site, spoke extensively with the staff, consulted with field biologists, and reviewed published literature to distill the essential messages which would be communicated to the casual visitor. The story focused on six distinctive subjects which are to be illustrated at interpretive stations throughout the site. This approach disperses the information so that the visitor is not overwhelmed by the complexity of issues relative to panda conservation and breeding efforts; yet it provides an organized way of grouping stories which are connected. Ultimately, the whole story is revealed and the messages are clearly illustrated.

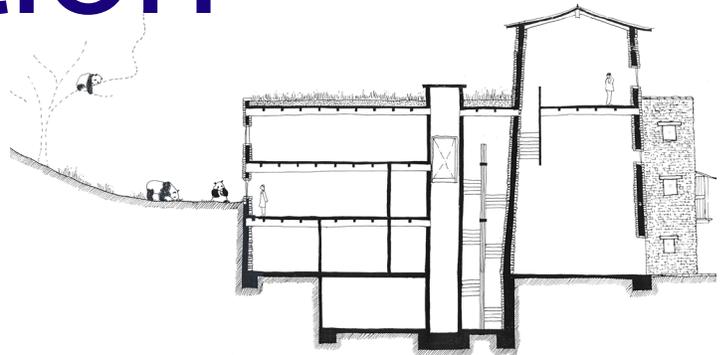
# Interpretive Master Plan

# Wolong Panda and Conservation Institute

Around the world, the term eco-tourism is often confused with tourism. US China Environmental Fund would like to create true eco-lodge at the Wolong Breeding Center which focuses on the important work being done at the center, the ongoing reintroduction programs in the Wolong Giant Panda Reserve, and the preservation of the indigenous Tibetan and Qiang people who live in the region. The Institute would provide lodging and educational programs in a setting that is respectful of the heritage of the region and which encourages support for the programs for conservation that are being implemented in the nature reserve.

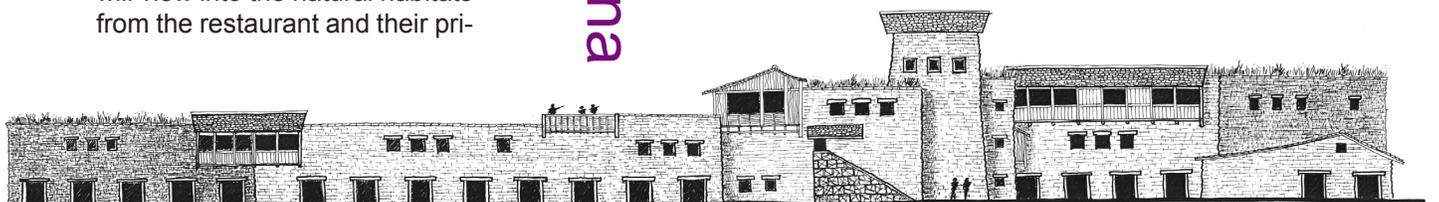
The architecture of the lodge will be sympathetic to the traditional Qiang stone villages, it has been located on a previously developed site and configured in order to reduce disturbance to the existing landscape. The original Panda habitats established for the WWF research center will be refurbished and lodge guests will view into the natural habitats from the restaurant and their pri-

Giant Panda Breeding Center, Wolong, China



vate guest rooms. The interior of the lodge will highlight traditional character and detail in the common areas and provide 60 simple but elegant accommodations for tourists interested in immersing themselves in the environment, culture and science of the Wolong Valley. Guest programs will include: lecture series; researcher in residence programs; tours to nearby indigenous villages; food steeped in local traditions; guided hikes to panda reintroduction areas; guided bird watcher, botanical and wildlife hikes; and will sponsor environmental symposiums throughout the year.

**Wolong Panda and Conservation Institute**  
Sichuan, P.R. China  
USCEF  
2004





Woodland

# African Village



Park Zoo, Seattle, WA

The African Village recreates East African rural life and culture with attention to detail. A boma, the stick fence typical to East Africa, surrounds the village, which is dominated by round structures: The community pavilion, two small grain storage sheds, the covered well, and a Kikuyu house in the traditional style. African craftsmen traveled to Seattle to thatch the cone-shaped roofs.

Modern life is introduced to the village by the western-style one-room school and the teacher's house. The school also creates the transition to the Savanna exhibit: One wall opens to a view of giraffes, gazelles, and zebras. Everyday objects, seemingly just left there a minute ago, lend special authenticity to the village. They are placed in everybody's reach and fascinate adults and children.

**African Village**  
**Woodland Park Zoo**  
**Seattle, Washington**  
**1999 to 2001**  
**\$ 1.25 Million**



The Wild Dog Exhibit replaced the old hyena yard at Woodland Park Zoo to present the rarely shown Painted Dogs of Africa.

A grassy plain is bordered in the back by mud banks crowned with vegetation and in the foreground by a stream bed with sand banks. The exhibit features artificial termite mounds and tree stumps, as well as heated dens and a digging area.

**African Wild Dog Exhibit**  
Woodland Park Zoo  
Seattle, Washington  
2000 to 2002  
\$ 1.4 Million



# African Wild Dog



Visitors experience long and short vistas of the East African stream bed. From the path in front of the exhibit, they overlook the grassy plain; from a sheltered viewing area shared with the lion exhibit the background of the exhibit opens up. A tunnel entrance affords a peek of more intimate pack life.





Zhengzhou, P.R. China

# Zhengzhou Safari Park

This project presents a new 1,000 acre safari park that is the anchor attraction for a major new residential development outside the city of Zhengzhou. The master plan includes a drive-thru open-range savanna experience that may be viewed from a narrated tram ride or personal vehicles, and a walking experience that highlights animals from around the world. The walking area is organized into three major zones: International Treasures, Africa Trails, and Asia Trek. Animal species in the International Treasures zone include icons from around the world, such as Giant Panda, sea lion, penguin, lemur, kangaroo, and golden monkey. This zone also includes an animal contact area, an animal nursery, a kid's play area, an amphitheater, and a large restaurant with gift shop.

Each of the bio-geographical zones includes animal exhibits, cultural elements and demonstrations, and opportunities to get up-close-and-

personal with the species on exhibit. Surrounded by the driving savanna zone, the perimeter exhibits take advantage of long vistas into the free-range areas. Visitors will be thrilled to feed elephants and giraffe, ride camels and be entertained by a bear demonstration, a bird show, and a cultural show by indigenous people. Each zone also includes a retail and food service component that is thematically consistent with the regional character of the fauna and flora represented in the collection.

The park visitors will enter through an architectural courtyard of exotic, colorful, and whimsical building forms that focus upon the central animal fountain. Once inside the park, iconic gateways lead visitors into the individual regions of the park. The entry zone will be open to the general public for shopping and relaxation and will form one of the major retail opportunities of the town center for the surrounding residential development.

**Zhengzhou Safari Park**  
Zhengzhou, P.R. China  
2010



# Zoologico Nacional, Santiago de Chile, Chile

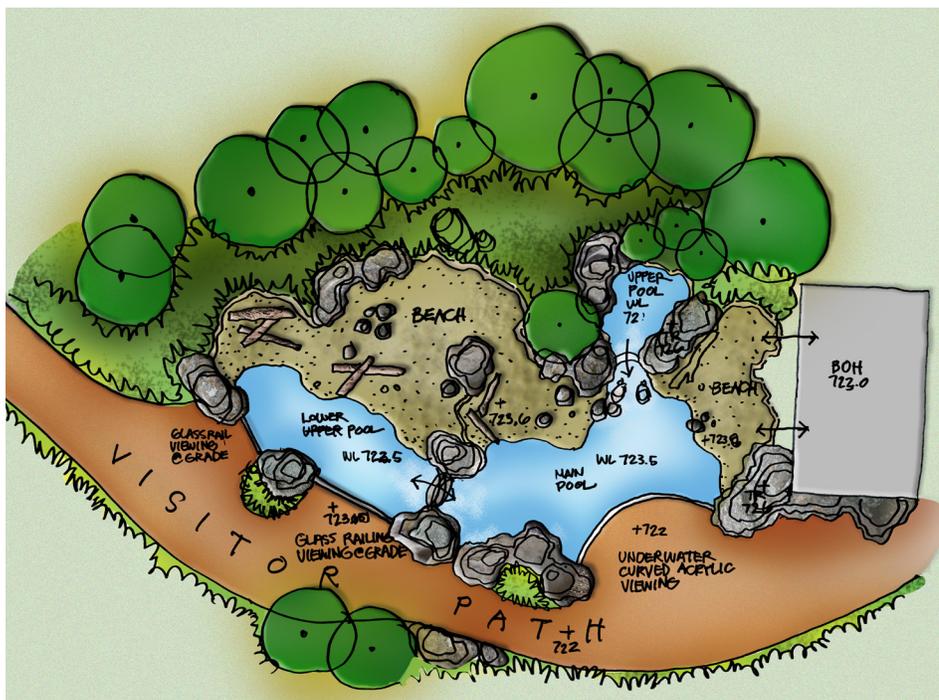
The National Zoo in Santiago de Chile lies on a very steep, forested hillside, with many of the existing pathways steeper than ADA requirements, making the grading of the site one of the more difficult challenges of the master plan redesign.

The zoo is being reorganized to represent a new geographic theme. Visitors will access the new entry plaza through a series of elevators and a bridge over the existing roadway. Some existing exhibits will be renovated or repurposed, while others will be built new to exhibit an expanded collection of animals. Featured species include elephant, giraffe and hippo.

The current limits of the zoo are also being expanded to incorporate unoccupied, adjacent land to the north. These exhibits will feature native Chilean animals, such as penguins and condors, and highlight the conservation efforts currently in progress to protect these animals.



## Master Plan



In addition to walking up the traditional route, visitors will have the option of riding the existing funicular half way up, or taking the new ski lift to the top and walking back down. An optional adventure trail gives visitors the opportunity to take a more natural path through the zoo, affording new and varied views and challenges along the way.

**Master Plan**  
**Zoologico Nacional**  
**Santiago, Chile**  
**2013-present**  
**\$ Undisclosed**

# The Wilds



PJA worked closely with the staff of The Wilds to develop a carnivore breeding, research, and health care center that would be visited by their public tour groups. The Wilds is an animal conservation center and endangered species breeding facility that conducts public tours to inform interested visitors about the important species survival work that they do at the facility.

Located in a remote section of the 14 square mile park, the new carnivore breeding center provides facilities for cheetah, wild dog, dhole, and wolf and hosts scheduled tours by visitors to the sanctuary.

Visitors will participate in narrated tours of the breeding enclosures, the health care facilities, and meet staff researchers.

Completed in 2008, the unique facility has received praise by animal professionals and the lay public and ushers in a new level of interaction with the visitors, staff, and the animal collection at The Wilds.



**The Wilds  
Carnivore Breeding  
Center  
Columbus, OH  
2006**

# Veterinary Clinic, Orlando, FL

Included with the design consultancy for Animal Kingdom's exhibits, animal holding facilities, and guest lodging was the concept and schematic design of a world class veterinary facility for health care of all animals on exhibit. The design included operation rooms, recovery rooms, laboratories, offices, food preparation and kitchens, outdoor holding, and quarantine areas.

The design also allows visitors to the park to get a glimpse into the operation and recovery rooms and to talk directly with the veterinary staff through real time audio and video components. In this way the facility becomes an exhibit of animal care and displays the behind the scenes efforts which maintain the animal collection.



## Disney's Animal Kingdom



The collection is diverse and ranges from gorillas, elephants, and giraffe to tortoise, flamingos, and Komodo dragons; so the building is designed to accommodate all sizes and shapes of animals. Veterinary staff perform routine animal care, emergency operations, and research efforts using the most advanced technologies and equipment. Highly functional and flexible the building was designed to adapt to an ever changing animal collection and advances in animal care.

A separate building houses an animal commissary with food storage, preparation kitchens, and distribution bays. In this way animal nutrition is monitored and adjusted daily based upon health needs, seasonal availability, and the latest health care guidelines.

**Veterinary Clinic  
Disney's Animal  
Kindom  
Orlando, FL  
1998**







**Veterinary Hospital  
Houston Zoo  
Houston, TX  
2002**

PJA consulted with the local firm of Morris Architects for the concept and schematic design of a world class veterinary facility for health care of all animals on exhibit at the Houston Zoo.

The design included operation rooms, recovery rooms, laboratories, offices, food preparation and kitchens, outdoor holding, and quarantine areas.

Working closely with the zoo's veterinary staff, the building provides for the routine animal care and emergency operations.

The layout of the two storied structure provides animal and staff facilities for the expanding animal collection and incorporates the latest veterinary equipment and technology. It is currently scheduled to be constructed in 2010.



# Veterinary Hospital + Clinic

PJA consulted with Monkey World animal sanctuary and Michael Simpson Architect in the UK for the concept and schematic design of this veterinary facility for health care of all animals on exhibit at this facility that specializes in worldwide primate rescue.

Rescued animals routinely arrive at the facility in need of immediate health care before being released into their spacious enclosures and many require special care and treatment as a result of their abuse.

Working closely with the zoo's veterinary staff, the building provides for the routine animal care, specialized health care needs, and emergency operations. The design included operation rooms, recovery rooms, laboratories, office space, outdoor holding, and quarantine areas.

The layout of the modest structure provides animal and staff facilities for this special animal population and incorporates the latest veterinary equipment and technology.



**Veterinary Clinic  
Monkey World  
Dorset, UK  
2007**

architects  landscape architects, p.s.

pja

 pja architects + landscape architects, p.s.