

STAFF RECOMMENDATION



NCPC File No. 6413

**NATIONAL ZOOLOGICAL PARK
ASIA TRAIL PROJECT, PHASE 1
PRELIMINARY AND FINAL SITE AND BUILDING PLANS**

3001 Connecticut Avenue, NW, Washington, D.C.

Submission by the Smithsonian Institution

February 26, 2004

Abstract

The Smithsonian Institution (SI) has submitted preliminary and final site and building plans for Phase 1 of the project called the Asia Trail. The proposed Asia Trail project is consistent with the Master Plan for the National Zoological Park (National Zoo) which was approved by the Commission in 1988. The SI advises that this project will significantly improve wildlife and zoo exhibition management and the need to upgrade the park. This Phase 1 project effort will also adhere to the American with Disabilities Act requirements for zoo accessibility improvements. The project also provides improved animal husbandry and exhibit capabilities.

Commission Action Requested by Applicant

Approval of preliminary and final site and building plans pursuant to 40 U.S.C. § 8722(d) and Section 5 of the National Capital Planning Act (40 U.S.C. § 8722(b)(1)).

Executive Director's Recommendation

The Commission:

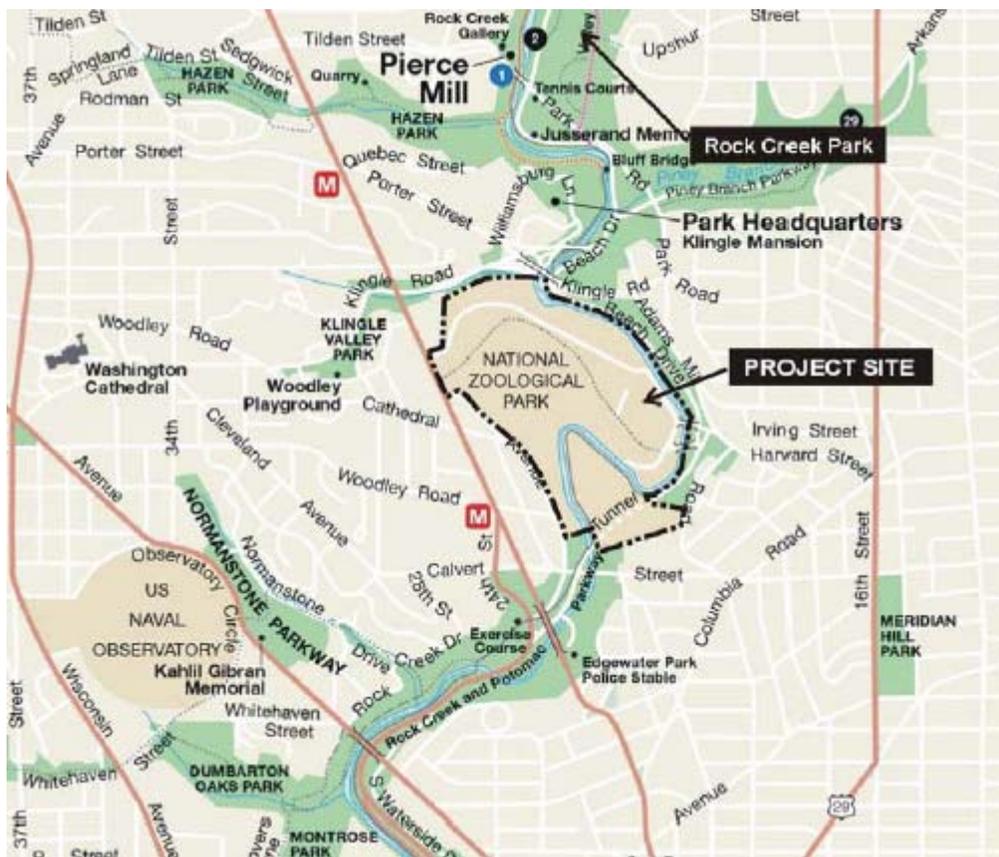
Approves the preliminary and final site and building plans for the Asia Trail Project, Phase 1, at the National Zoological Park, Washington, D.C., as shown on NCPC Map File No. 2.00(38.00)-41306.

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BACKGROUND AND STAFF EVALUATION

DESCRIPTION OF PROPOSAL

The Asia Trail Project, Phase 1, is the inaugural development of enhancements to the National Zoo that would comprise approximately 5.6 acres of existing zoo exhibit area and are located within the Zoo east of Connecticut Avenue and adjacent to the Olmsted Walk.



PROJECT LOCATION PLAN

The Asia Trail Project is situated in the northwest corner of the zoo near the park's main entrance at 3001 Connecticut Avenue, NW. The Trail project is intended to create a display sequence that shows a series of unique Asian animals, complies with Americans with Disabilities Act (ADA) for access, upgrades infrastructure and utility systems, improves visitor's interpretive experience, increases visitation, improves integration of zoo science into exhibits; and provides

for more natural animal behaviors. This project also further implements objectives of the Commission approved Master Plan and the Smithsonian Intuition's 2001 Utility Improvement Plan.



PHOTO COURTESY OF THE SMITHSONIAN INSTITUTION AND EDWA, INC.

ASIA TRAIL PROJECT BOUNDARY

Major exhibit components of the Asia Trail Project, Phase 1, include:

- Sloth Bear exhibit
- Fishing Cat exhibit

- Giant salamander exhibit and waterfalls
- Clouded leopard exhibit
- Refurbished and re-designed Red Panda and Giant Panda exhibit
- A Panda Café food service structure
- Central Conservation Plaza that serves as an observation area and connecting feature of the exhibit.

The Phase 1 project will also include several new structures to replace the current or newly required denning of animals and allow appropriate exhibiting of the animals during open public hours at the zoo. These structures include:

- A refurbished Panda House
- Den cages for Fishing Cats
- Sloth Bear holding building
- Dens cages for Clouded Leopards
- Giant salamander water habitat structure
- New Panda Café food service building
- Conservation Plaza enclosure (lower level)
- Two elevated bridge structures

The full compliment of the Asia Trail Project, Phase 1, currently is anticipated to be constructed as follows:

Area of Site

Asia Trail, Phase I - 5.66 acres

Area of Buildings

Asia Trail, Phase I --- 16,600 square feet overall

Employment (existing/projected)

Asia Trail, Phase I --- 12/13

DEVELOPMENT PROGRAM

Applicant: Smithsonian Institution

Architect: Chatelain Architects, P.C. Washington, DC
Landscape Architects: Nelson-Byrd Landscape Architects, Charlottesville, VA
Structural Engineers: McMullan & Associates, Vienna, VA
Civil Engineers: WH Gordon & Associates, Chantilly, VA

Cost: Asia Trail, Phase I -- \$38.9 million, FY2001-2005

Schedule: Asia Trail, Phase I – Final Design January 2004

Construction Start Date June 2004
Occupancy Date May 2006
Public Opening Date June 2006

ASIA TRAIL PROJECT, PHASE 1, OVERALL SITE PLAN



Source: Smithsonian National Zoological Park 2003

Legend:

(1) The Asia Trail Pathway Entry (2) Sloth Bear Holding Building (3) Fishing Cats Exhibit (4) Clouded Leopards (5) Red Pandas (6) Giant Salamander Exhibit (7) Conservation Plaza (8) Giant Panda House and Panda Café

The specific site and building plans for each component of the Asia Trail, Phase 1, will be discussed in detail to allow the Commission to completely understand its complex layout and exacting, but interesting, exhibits and their final design characteristics. At each exhibit

description a detailed plan will accompany the text and building plans will be provided to demonstrate the final design features of certain exhibit areas where they occur.

The Asia Trail Project, Phase 1, is the first component of the National Zoo's 10-year Renewal Plan, a reorganization and revitalization of the National Zoo focused on building world-class facilities that foster healthy and active animals. The Asia Trail will deliver varied viewing opportunities and close up encounters with many of the Zoo's most charismatic creatures housed in new habitats designed to encourage natural behaviors. Interpretive exhibit elements will create a compelling visitor experience that is both multi-sensory and interactive.

Phase I will include development of eight distinct animal exhibit elements: (1) construction of the Asia Trail pathway, (2) construction of new Sloth Bear holding areas and yards, (3) construction of the Clouded Leopard exhibit, (4) construction of the Fishing Cats exhibit, (5) construction of the Red Panda exhibit, (6) construction of the Conservation Plaza, (7) renewal and expansion of the Giant Panda exhibit, and (8) construction of the Giant Salamander exhibit.

Asia Trail Pathway:

The pathway will be approximately one mile in length, originating at Olmsted Walk near the Zoo's Connecticut Avenue entrance, winding through the upper end of the Zoo's steep central valley, and rejoining Olmsted Walk just past the existing Giant Panda House near the existing Elephant House. The design of the Asia Trail and its concurrent habitats is intended to provide a cohesive immersion experience and raise visitor awareness of the character and qualities of the environments the animals naturally inhabit.

Throughout the Asia Trail, Phase 1, the geologic and ecological conditions of this Rock Creek Valley site will be contrasted against those of the animal's habitats. Plants, natural stone, water, and other elements would evolve along the length of the Trail, exposing interrelationships between the natural and built worlds. Proposed vegetation plantings will reinforce the forest that is the predominant plant community of Rock Creek Park, and evoke species of Asian ecosystems through the use of parallel plant species hardy in the Washington area.

Entrance Area and Sloth Bear holding area and exhibit:

The Asia Trail will begin at the Plaza Circle in front of the existing Visitor Education Center. From here, the Trail will cross the valley stream via a bamboo bridge to the relocated and improved sloth bear exhibit trail, which will include viewing areas, plazas, and interpretive stations. The sloth bear exhibit will consist of two exterior exhibit yards; an off-exhibit yard, a one-story animal holding and research facility, and a service road. The animal holding and research facility will be designed to maximize day lighting and other energy conservation measures. The structure is set into the hillside to decrease thermal and visual exposure. It is faced with locally-quarried rubble stone consistent with and similar to other Zoo structures. A "green" roof with xeriscape plantings controls rainwater flows and provides a more natural exposure. Within the Sloth Bear habitat area, the exhibit slopes 20 to 30 percent and up to 80 percent along the Connecticut Avenue Zoo boundary. The sloth bear yards will be designed to stimulate the

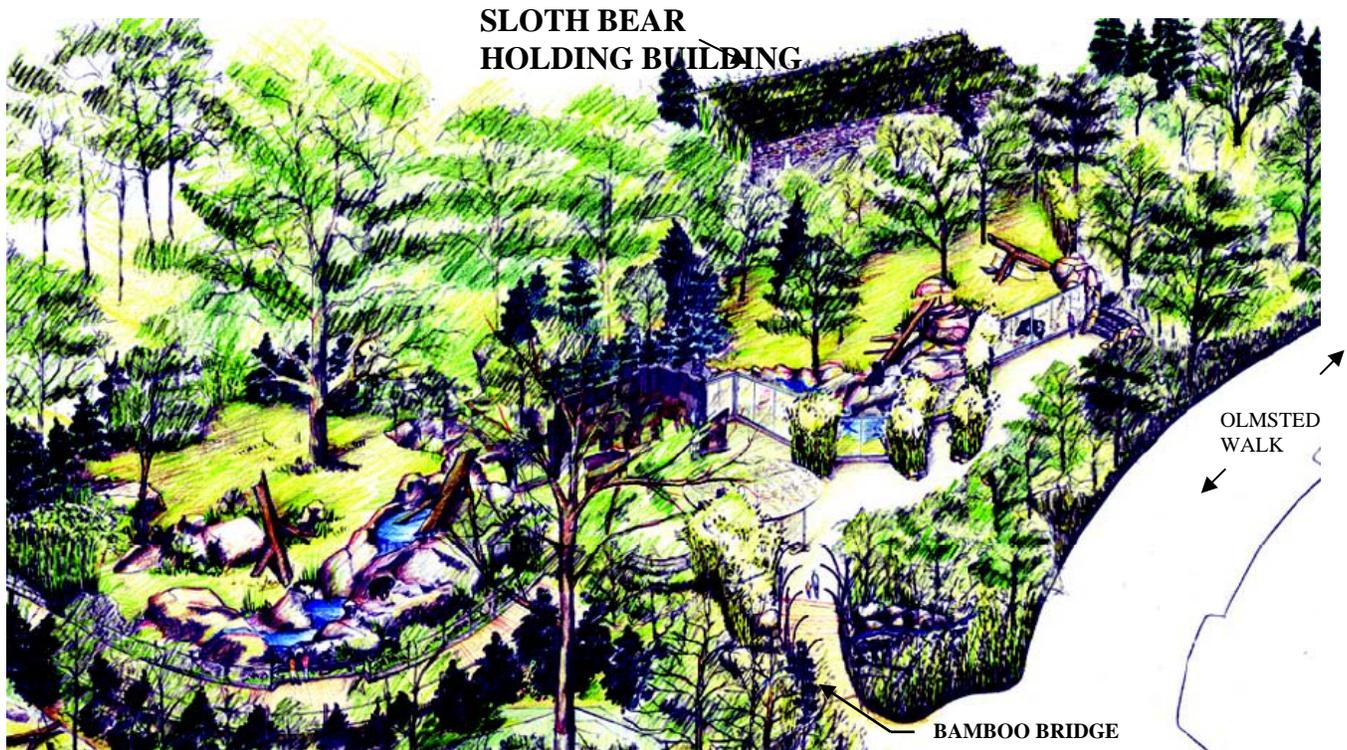
bear's behavior and provide an environment where their behavior may be more easily observed and understood by visitors and zoo researchers. Within the yards, digging pits and termite mounds will be constructed for viewing from the Trail. Trees, rocks, snags, waterfalls, and pools will be integrated into the design of the yards and create a varied environment to stimulate the bears.



FINAL DESIGN OF SLOTH BEAR EXHIBIT AREA



SECTION OF SLOTH BEAR EXHIBIT YARD AS VIEWED TOWARD NORTHWEST



AERIAL VIEW LOOKING SOUTHWEST TOWARD SLOTH BEAR EXHIBIT AREA



FINAL DESIGN OF SLOTH BEAR HOLDING BUILDING

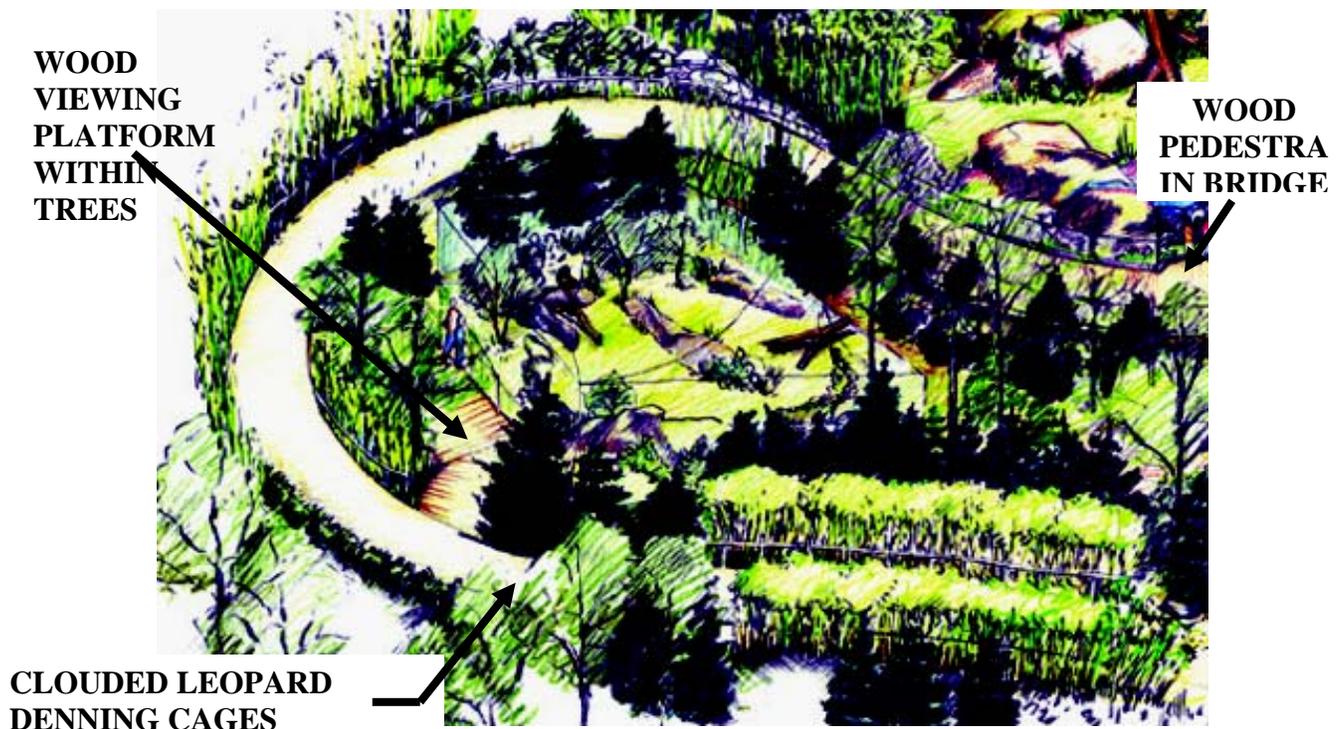
Clouded Leopard Exhibit:

From the Sloth Bear exhibit, the Asia Trail will rise above existing grade and loop around to the

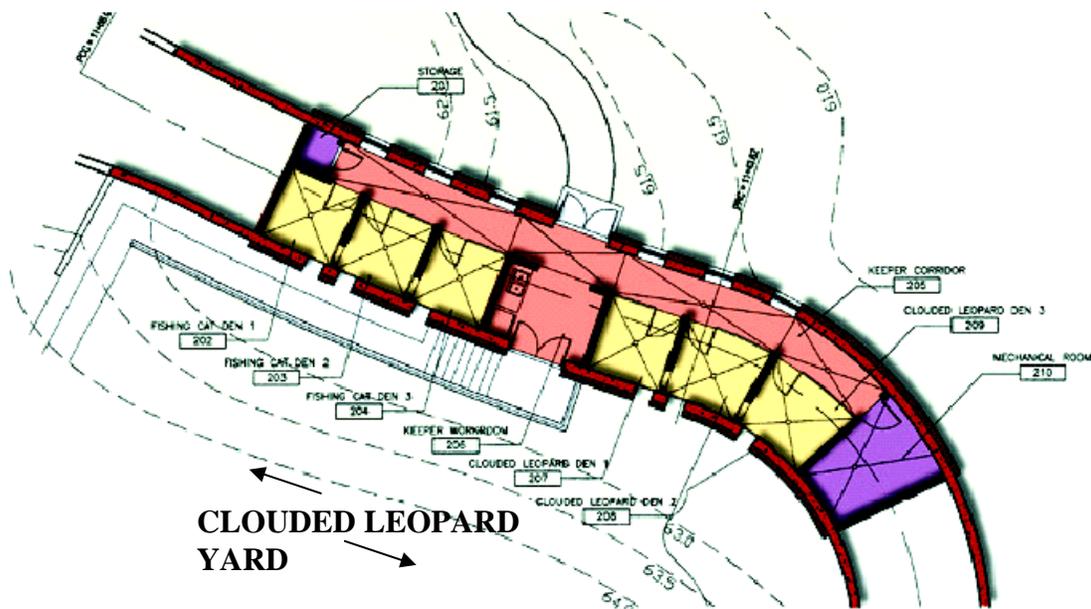


CLOUDED LEOPARD EXHIBIT AREA

proposed Clouded Leopard exhibit. This exhibit will focus on the leopard's arboreal nature. Climbing structures including an artificial tree with a heated limb will be provided to stimulate the leopards climbing behavior. No water features will be provided at this exhibit. Thick evergreen screens will be planted around the backside of the exhibit to buffer the animals and the public, and prevent unnecessary stress on these cats from visitors on all sides of the exhibit.



AERIAL VIEW OF CLOUDED LEOPARD EXHIBIT YARD AND DEN STRUCTURE BUILDING FLOOR PLAN (Below)

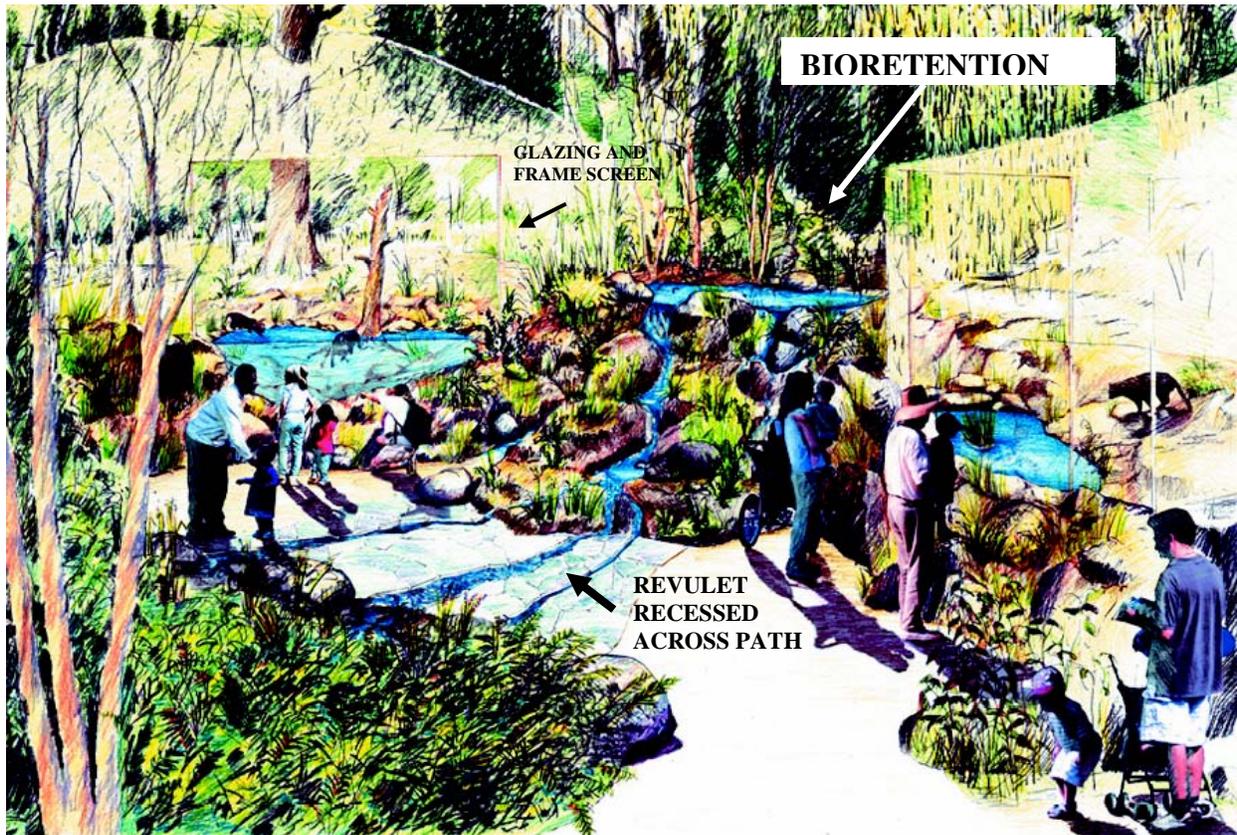


Fishing Cat Exhibit:

Leaving the Clouded Leopard exhibit, the Trail will return to grade at the Fishing Cat exhibit. The animal exhibit area will be viewed from a secondary path separated from the Asia Trail. A bio-retention area of shrubs, trees, and grasses will be constructed to buffer the exhibit from the noise and activity on the Trail. This area will serve the dual function of filtering stormwater runoff and creating a lush, shaded environment. The design of the yard, interpretive elements, and experiential viewing sequences will emphasize the unique aspects of the Fishing Cat's behavior.



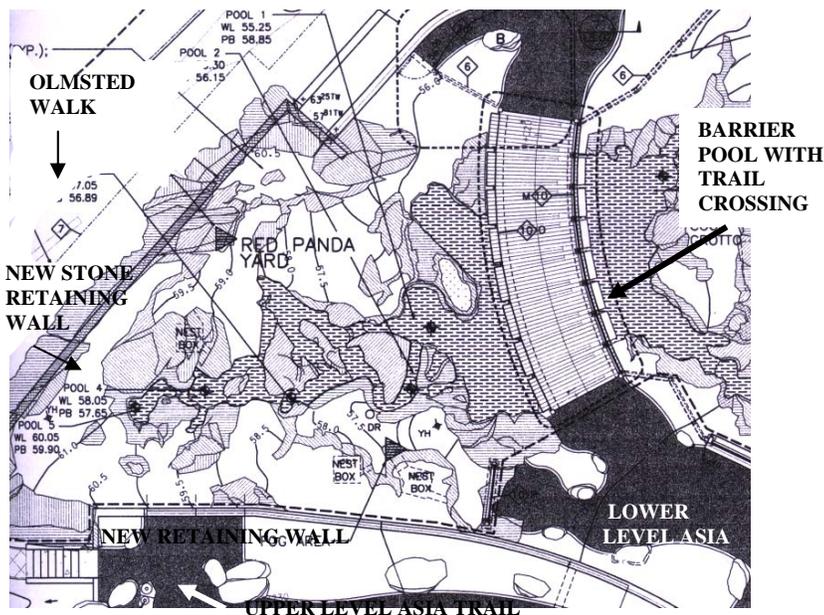
FISHING CAT YARD EXHIBIT FINAL SITE PLAN LAYOUT



PERSPECTIVE VIEW TOWARD SECONDARY PATH WITHIN THE FISHING CAT YARD SHOWING PEDESTRIAN VIEWING AREAS AND FINAL DESIGN OF BIORETENTION AREA

Red Panda Exhibit:

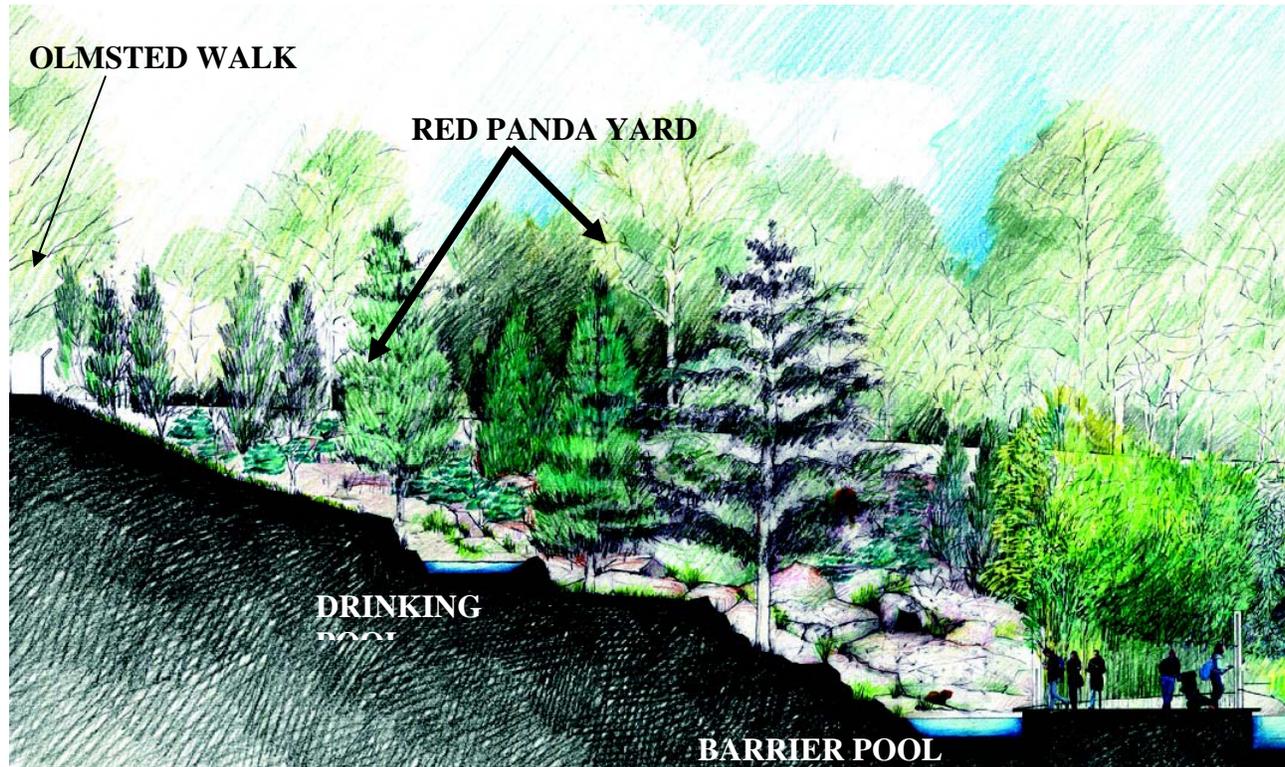
The project trail will lead from the above exhibit to a short, densely planted path for the Red Panda exhibit located on a steeply sloping yard adjacent to the Olmsted Walk. On the trail, the tree canopy will be at eye level with the viewing emphasis on the climbing behavior and the arboreal nature of the Red Panda. Evergreen trees and shrubs



FINAL SITE PLAN FOR RED PANDA YARD

will be planted similar to the native forests the Red Pandas inhabit.

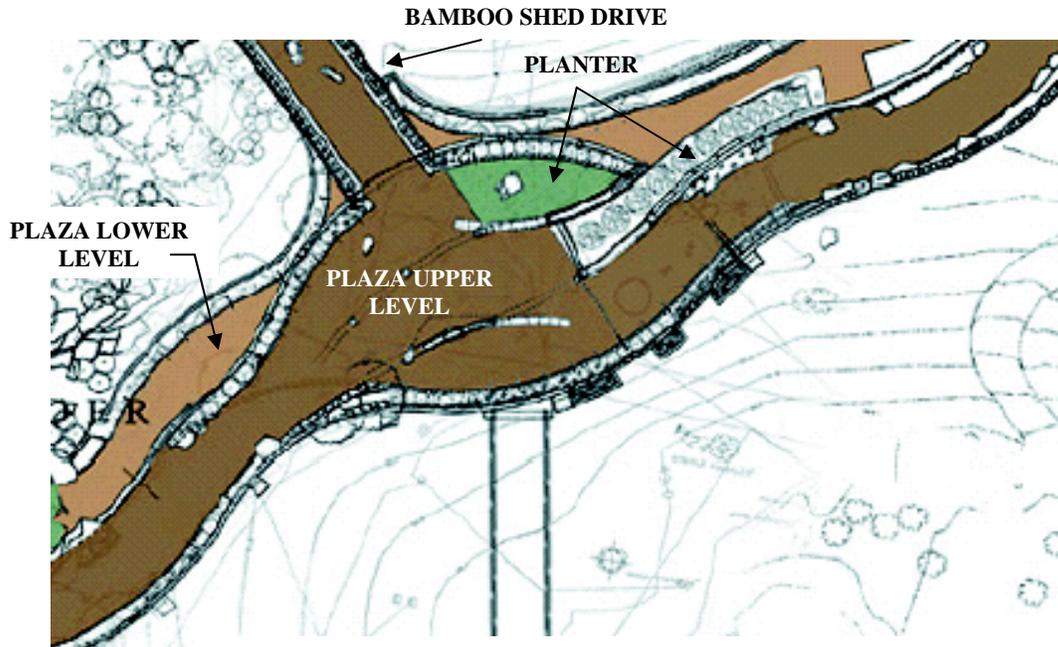
A trickling stream will flow through a rocky, shaded steep valley into two shallow drinking pools, and then into one larger moat barrier pool.



CROSS SECTION OF FINAL DESIGN OF RED PANDA YARD

Conservation Plaza:

From the Red Panda exhibit, the Trail will meander between the Giant Panda yards and the existing Asian elephant house and yards towards the upper level of Conservation Plaza. This 2,775-square-foot plaza, which is the elevated roof of a recessed enclosed structure, will provide a resting place for visitors and allow service vehicle access to the Trail and the bamboo shed near the Giant Panda yard. The Plaza will be a transition zone for materials along the Trail, from a coarser upland habitat setting of boulders, shrubs, and canopy trees to a finer textured setting of grasses, bamboo, and stone aggregates shaded by lowland tree species. Tall bamboo at the plaza's lower level will provide a vertical connection between the two levels. Bamboo Shed Drive will be lined with bamboo planters to illustrate the different types and amounts of bamboo species consumed by the pandas and emphasize the dependent relationship of the pandas to the bamboo forests.



CONSERVATION PLAZA FINAL SITE PLAN

Natural Pave (Natural Resin Bound Aggregate Paving)



asia trail - stone edge at view rail



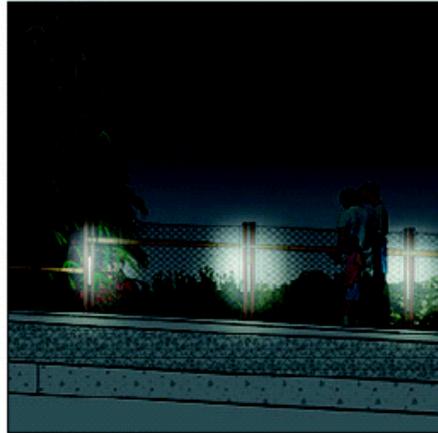
aggregate detail

FINAL PLAZA DESIGN WALKWAY SURFACE

Viewing Rail



elevation



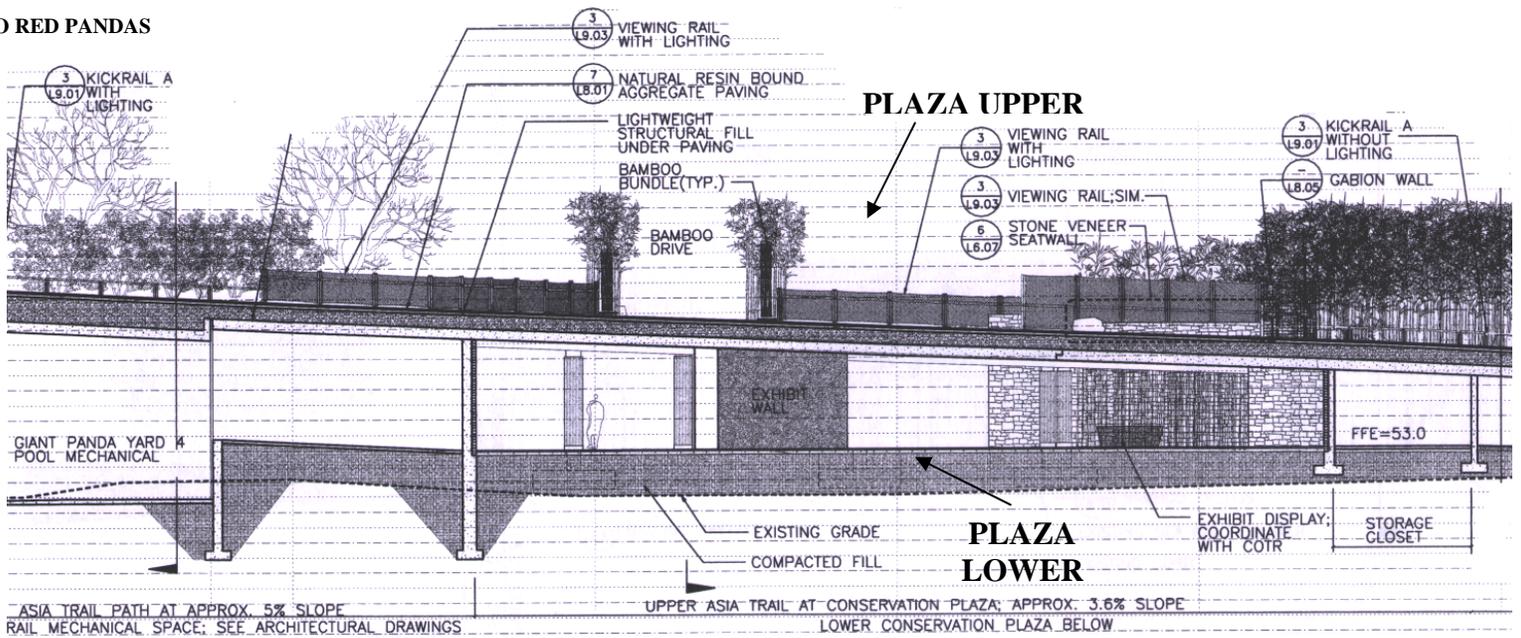
elevation - night



section

PLAZA PEDESTRAIN WALKWAY RAILING

TO RED PANDAS



CENTERLINE SECTION OF CONSERVATION PLAZA INDICATING UPPER AND LOWER LEVELS

The Giant Panda Yard:

At Conservation Plaza on the lower level, a path along a thick stand of bamboo will lead to the Giant Panda exhibit and then continue on the Giant Panda circuit path for 650 feet. The existing path will be modified to eliminate steep grades. The path will be lined with boulders, low and high growing bamboo and a gabion rock wall for an interpretive experience. The lower level of Conservation Plaza will be encountered as one continues on the path and will provide views of the giant panda yards and grotto and provide an opportunity for interpretive experiences. The Giant Panda yards will be refurbished so that climbing and play structures, water, cool spots, and feeding places are situated as close as possible to viewing areas. Numerous tree snags would be joined together and connected with living trees to create an elaborate climbing structure that stimulates climbing behavior in pandas and provides numerous routes of exploration. The yard will be lushly planted with evergreen and deciduous trees, shrubs and coarse groundcovers combined with large natural rocks and constructed rockwork, tree falls, and climbing trees,

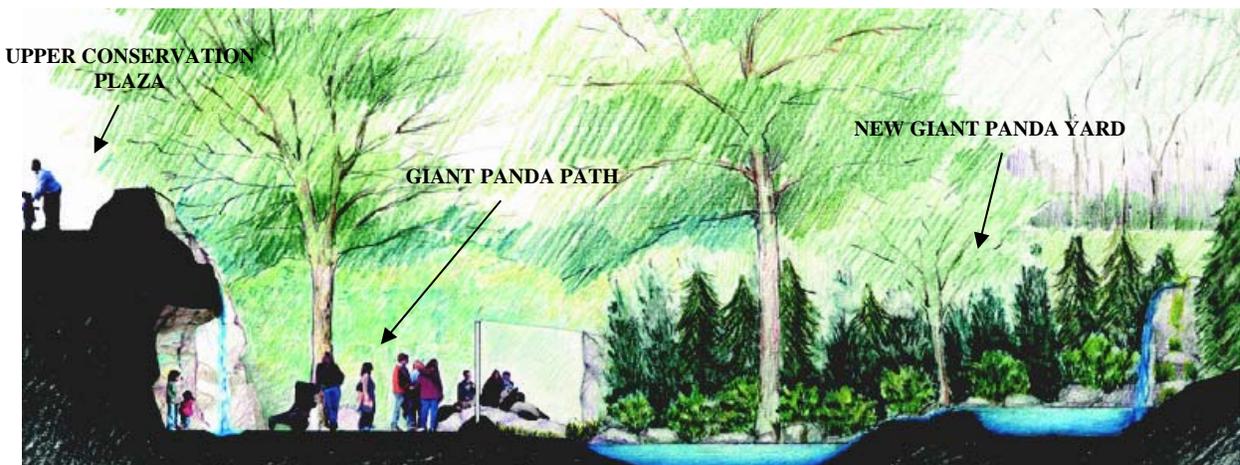


FINAL SITE PLAN FOR GIANT PANDA YARDS

which resembles the panda's native habitat in China. These landscape features will mask animal containment barriers (welded wire fencing, hot wire, framed glazing screen, and shear rocks) and contribute to the viewer's experiential immersion within the animal environment. A rocky stream will flow through the site and connect to a series of pools, and then flow into a water moat. These pools will be planted with ferns and grasses with rock outcrops for sleeping and play. The Trail will cross a wooden bridge that spans the watercourse between the Red Panda and Giant Panda yards, which visually connects the two habitats. The panda pathway will lead to the renovated Giant Panda Building.



LOWER LEVEL OF ASIA TRAIL AT GIANT PANDA BAMBOO ENTRY PATH

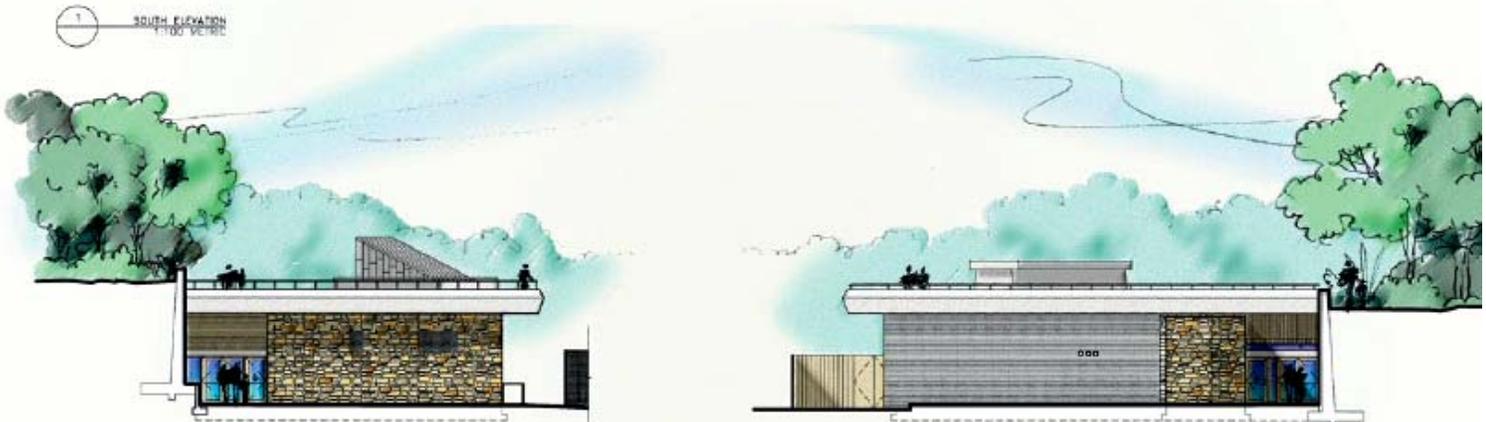


SECTION OF GIANT PANDA YARD WITH POOLS

PANDA HOUSE ADDITION



1 SOUTH ELEVATION
1:100 METRIC



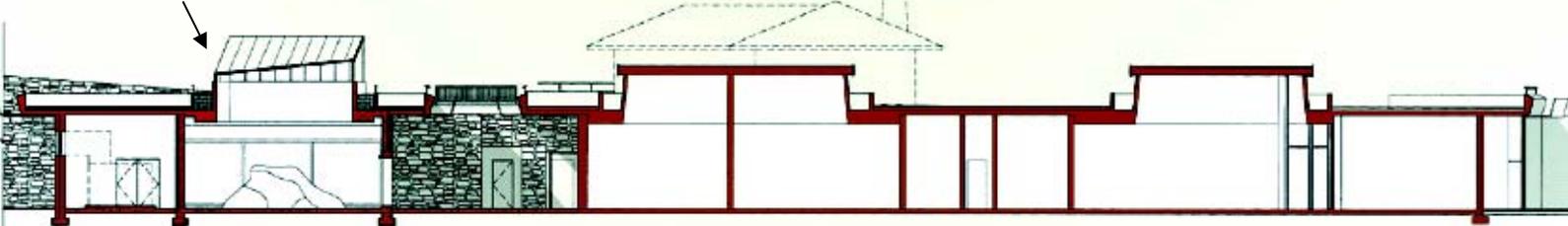
2 WEST ELEVATION
1:100 METRIC

3 EAST ELEVATION
1:100 METRIC

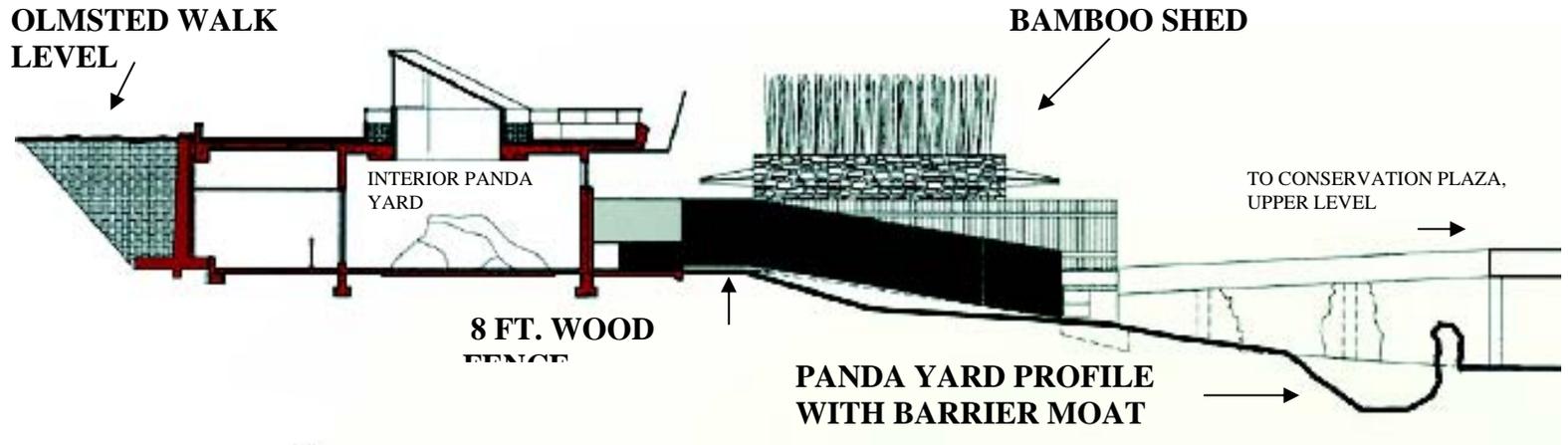
REFURBISHED PANDA HOUSE WITH ADDITION

PANDA HOUSE ADDITION

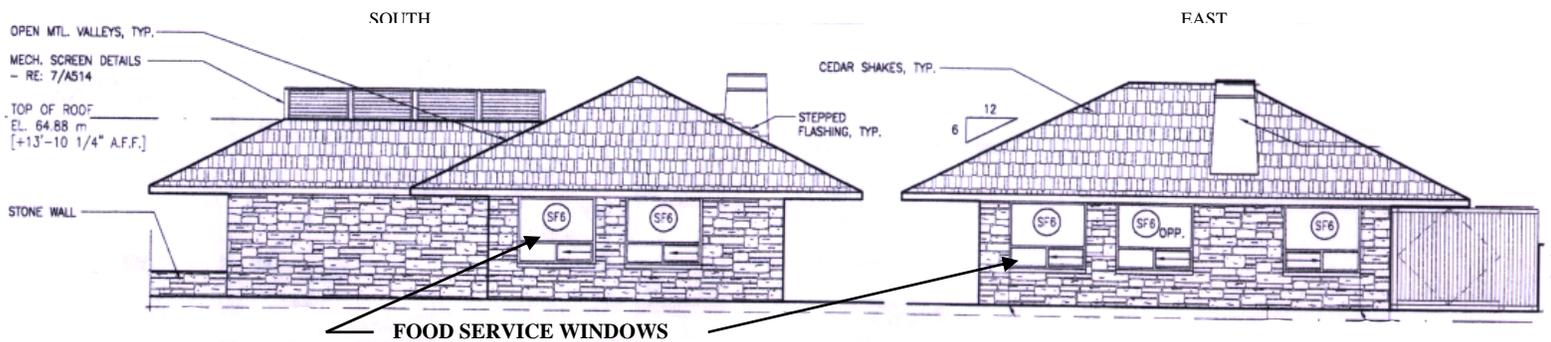
PANDA CAFÉ AT ROOF LEVEL
IN DOTTED OUTLINE



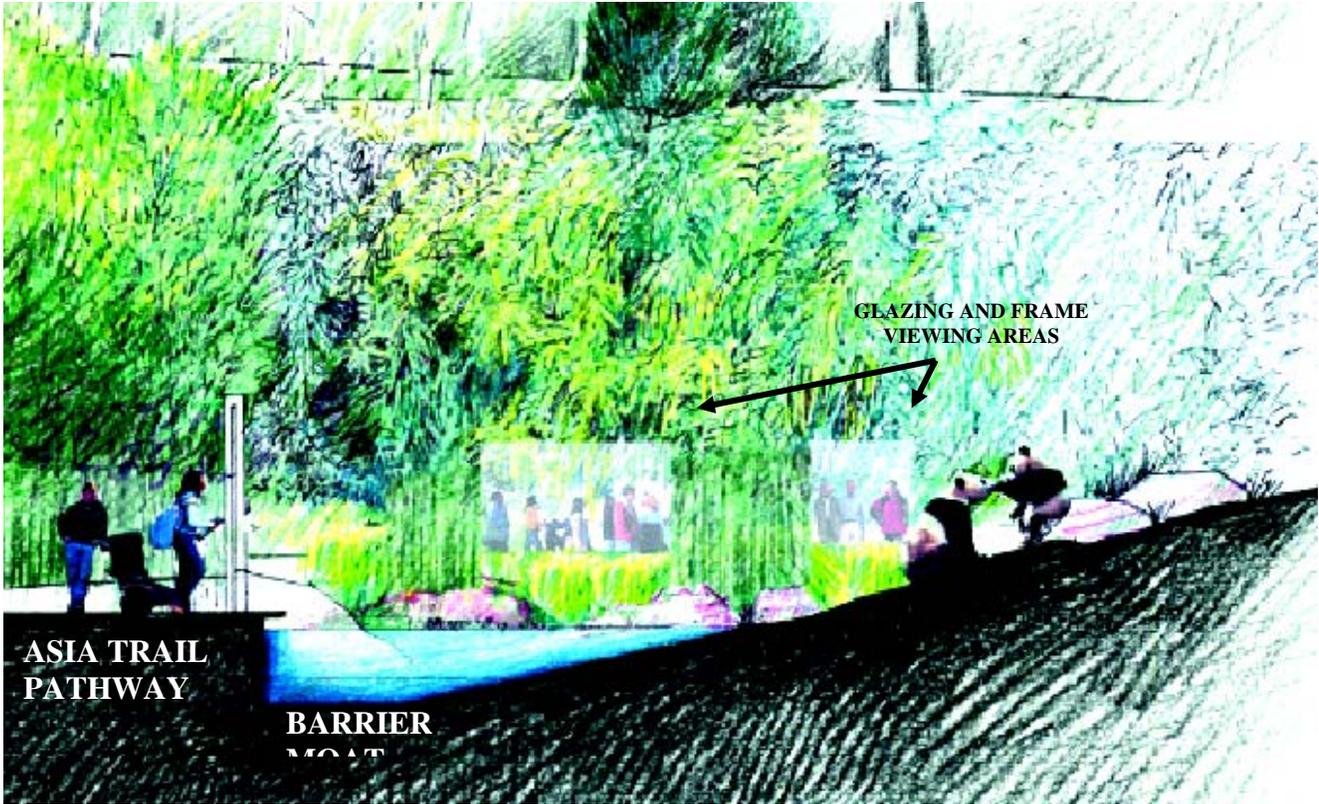
PANDA HOUSE CROSS SECTION WITH ADDITION



CROSS SECTION OF PANDA HOUSE AND PANDA YARD, WITH BAMBOO SHED, AND BAMBOO DRIVE TO UPPER LEVEL PLAZA IN BACKGROUND



EAST AND SOUTH BUILDING ELEVATIONS OF FINAL DESIGN OF PANDA CAFÉ



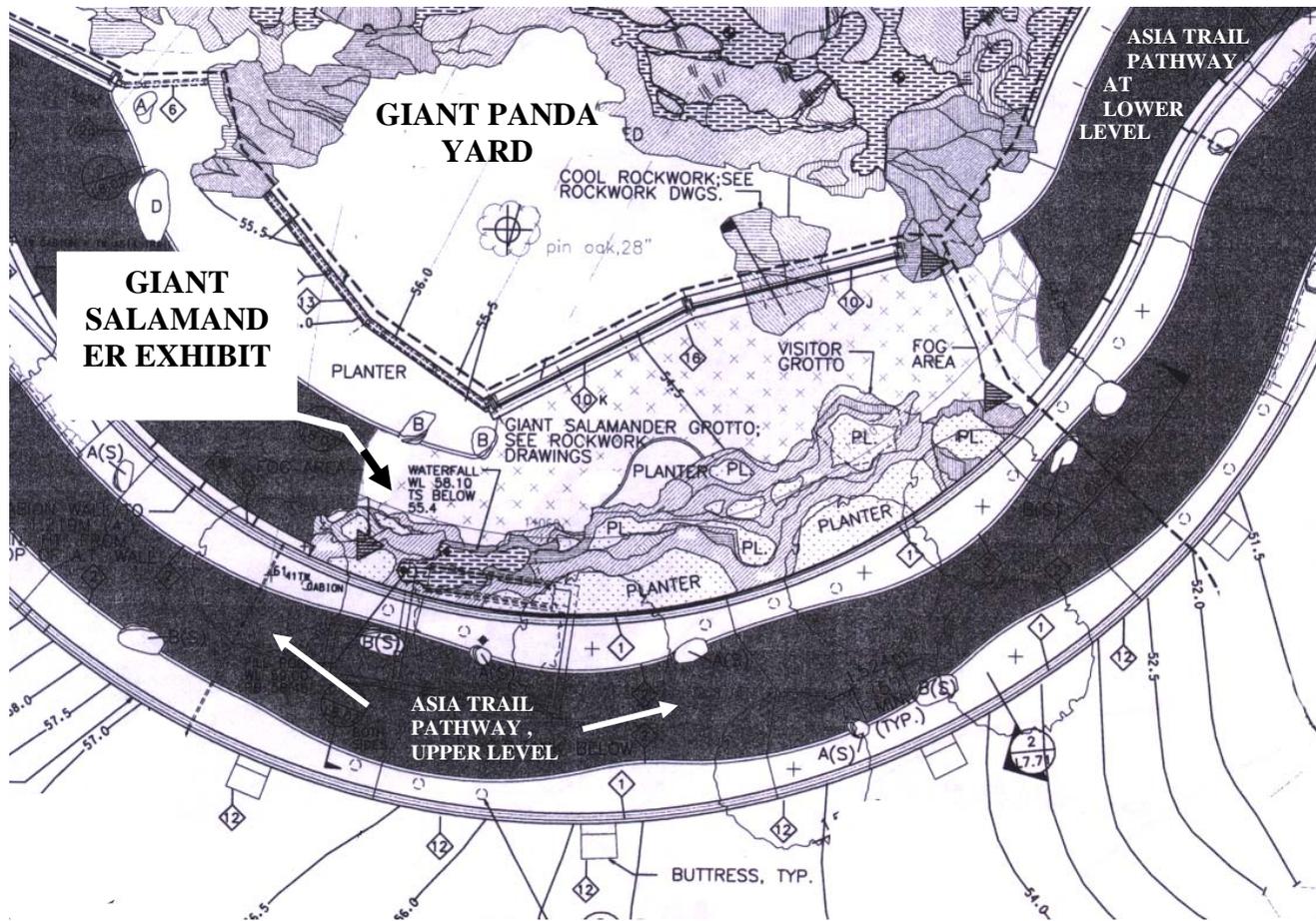
**CLOSE-UP CROSS SECTION OF WEST PANDA YARD FINAL DESIGN WITH
BARRIER MOAT**



**FINAL DESIGN OF PANDA EXHIBIT AT COOLING ROCK WITH
GLAZING AND FRAME BARRIER**

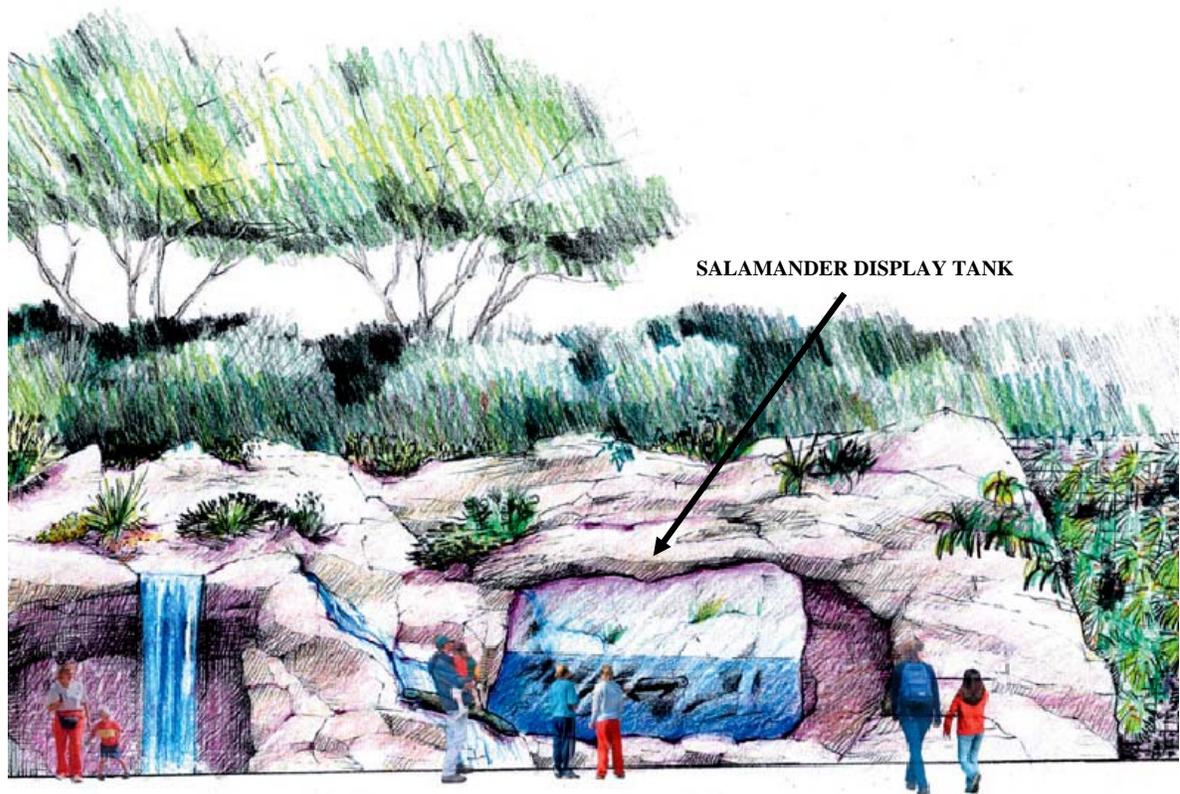
The Giant Salamander Exhibit:

This exhibit will consist of two water tanks surrounded by rocky outcrops, near the outer rim of the Giant Panda area. One of the tanks will be designed to resemble a moving stream as a continuation of the valley stream. Within the tank, smooth rock shelves and sandy pullout areas will provide resting places for the large salamander.



GIANT SALAMANDER EXHIBIT FINAL SITE PLAN

The salamander exhibit area will feature rock embankments adjacent to the retaining wall of the upper level of the Asia Trail and would provide various resting and seating areas that would be opposite the Giant Panda yard. A waterfall feature is provided at the base of the Giant Salamander exhibit area, at the rock grotto, which also allows interactive activity with the water and allows seating areas and planting areas to be located directly along the Asia Trail pathway.



ELEVATION OF GIANT SALAMANDER FINAL EXHIBIT DESIGN

EVALUATION

Staff **recommends approval** of the preliminary and final site and building plans for Phase 1 of the Asia Trail Project. The submission of final detailed design information for the Asia Trail features several improvements to the existing zoo includes:

- Several elaborate and comprehensive landscape revisions to the northwest area of the zoo with specific site designs for new exhibits, their structures, and the public activity areas associated with them.
- A new drainage infrastructure to update site surface drainage as well as wastewater discharges from the proposed new or refurbished animal exhibit areas that adheres to best management practices for water treatment.
- A fully developed pedestrian accessible route to all animal exhibits that conforms to the Americans with Disabilities Act (ADA) requirements for access.

- A replacement food service concession at the Giant Panda exhibit which is a stone clad structure matching the Panda House.

Staff finds the submitted preliminary and final plans successfully maintain the intent of the master plan and provide an improved and expanded animal and flora experience for the potential zoo visitor in the context of the new exhibits. The final design of the improved animal environment amenities located within the exhibit yard areas successfully establish such elements as trees, rocks, snags, waterfalls, and pools creating a varied environment for the exhibited animals.

The final site and building plans demonstrate how the Trail and its habitats will appear to merge into one landscape through the parallel use of elements such as grottoes, rocky outcrops, shade, vegetation, fog, and water. Proactive ecological design and sustainable practices are inherent in the final design of the submitted trail features, exhibits, and visitor areas.

Finally, the preliminary and final site plans fully indicate specific plant choices relative to their location and use, and include the consideration of multiple seasonal interest, wildlife value, and maintenance and safety concerns. Individual final habitat designs reflect the behavioral needs of the wildlife inhabitants and are planted with a variety of species that emulate the animal's native habitat, optimize viewing and research opportunities, and provide climbing, perching, and play structures appropriate for each displayed animal.

PREVIOUS COMMISSION ACTION

At the January 8, 2004, Meeting the Commission approved the design concept for the Asia Trail Project at the National Zoological Park, Washington, D.C., as shown on NCPC Map File No. 2.00(08.21)-41282. No changes to the previously reviewed design have occurred in the final submission.

COORDINATION

Coordinating Committee

The Coordinating Committee reviewed this item at its meeting on December 10, 2003, and forwarded the proposal to the Commission with the statement that the project has been coordinated with all agencies participating. The participating agencies were NCPC; the District of Columbia Office of Planning; the District Department of Transportation; The National Park Service and the Washington Metropolitan Area Transit Authority. Although not in attendance the representative for the General Services Administration concurred in the coordination of this project.

CONFORMANCE

Comprehensive Plan

The proposal is consistent with the Comprehensive Plan for the National Capital. The Parks, Open Space and Natural Features Element of the Plan designates the installation as a distinct feature to the Capital's environs and states:

The National Zoological Park should continue to be maintained and developed as an integral part of the Rock Creek stream valley, emphasizing natural conditions and retaining existing topography and indigenous plant materials to the extent practicable.

Additionally, within the context of cultural activities, the Comprehensive Plan notes:

The importance of Washington as a national tourist attraction allows for the presentation of unique facilities such as the National Arboretum, the Kenilworth Aquatic Gardens, and the National Zoo. These open air displays are important, both visually and educationally, and should be continued and carefully maintained as part of the National Capital Open Space system.

National Environmental Policy Act

The SI completed an Environmental Assessment (EA) on December 16, 2003, consistent with the National Environmental Policy Act (NEPA) of 1969, as amended, and the Council of Environmental Quality's (CEQ) regulations implementing NEPA. The Smithsonian Institution is not a "federal agency" within the meaning of NEPA and CEQ. However, it is SI policy and intent to inform and involve the public and other stakeholders in the planning of the Asia Trail Project and to adhere to Commission project submission requirements. On January 29, 2004 the SI developed a Finding of No Significant Impact which was signed and implemented with the design features of the Phase 1 project.

NCPC staff analyzed, in conformance with the requirements of NEPA, the prepared EA. Staff has prepared a Finding of No Significant Impact based on adoption of the EA and which was signed by the Executive Director on February 13, 2004.

The EA reviews two alternatives for implementing the Asia Trail Project; the preferred alternative of the Asia Trail Concept Plan and the "No Action" alternative. The preferred alternative was evaluated by the NEPA effort to demonstrate the range of potential future projects, but implements only portions of the plan in the immediate future. The Phase 1 project submission is the planned activity for the near term.

The EA addressed the potential environmental impacts of the full Asia Trail Project with some of the existing animal exhibits (giant pandas and elephants) remaining in-place and other animal exhibits to be renewed, improved, and/or expanded. Some existing animal exhibits in the Asia Trail would be relocated to other parts of the Zoo.

Issues of the NCPC environmental evaluation of the EA focused primarily on alteration of site topography, the potential erosion and water resource impacts from construction, and

cultural/architectural resource effects. The possible impacts and the Smithsonian identified mitigation measures that will be included in the project development address the following:

Topography and Geology: Construction would primarily occur in previous fill material and disturbed soils, with minor occurrences in undisturbed soils. There would be no impacts to site geology (i.e., no pile driving to bedrock, or blasting/drilling of rock outcrops). The Asia Trail pathway would be elevated, constructed on a foundation of concrete blocks; thereby, not requiring pile driving for the Trail foundation. The sloth bear facility would be built into a soil berm but only to a depth of eight feet; therefore, it would not encounter bedrock.

There would be moderate impacts to topography with the placement of a moderate amount of imported fill material to create level areas for relocated and renewed structures and yards of the animal exhibits. Some soil excavations are anticipated to construct new facilities (e.g., the sloth bear facility) below the soil surface as much as possible. Excavated soil would be reused on-site, since site soils are not anticipated to contain contaminants due to no history of contamination or use of contaminated fill on-site. Site soils would be subject to clearing and grubbing of vegetation and surface grading to prepared the site for the new facilities. Therefore, the preferred alternative would have a moderate impact on site topography, a minor impact on site soils, and no impact to on site geology.

Mitigation

Temporary soil erosion impacts due to disturbed soil and vegetation would be mitigated by implementation of the measures described for water resources. If encountered, contaminated soils would be collect, transported, and disposed of using appropriate best management practices (BMPs).

Water Resources: The project would not impact Rock Creek or the surrounding National Park Service properties. Construction activities would temporarily disturb soil and vegetation in an area of steep grades up gradient of Rock Creek at a distance of approximately 1,000 feet, thereby, creating a potential impact of sedimentation to Rock Creek transported by stormwater runoff. However, the implementation of the appropriate best management practices (BMPs) to control sedimentation and stormwater would avoid sedimentation impacts to the Creek. There are no wetlands along Rock Creek at the Zoo boundary; therefore, wetlands would not be affected by the implementation of either Phase 1 or 2 of the project. There are floodplains of Rock Creek located on the Zoo property; however, there would be no direct or indirect impacts to floodplains since project construction would occur outside of the floodplains.

With the development of the Asia Trail project, the amount of impervious surface is estimated to be 67,985 square feet, which is an increase of 4,208 square feet over current impervious areas (approximately a six percent increase). To minimize the potential impact of the additional stormwater runoff, the increased surface area would generate, appropriate BMPs would be implemented to control stormwater quality and quantity on the site to maintain stormwater discharge rates from the site to Rock Creek at predevelopment levels. Stormwater runoff collection and transportation systems would be upgraded by the replacement of failing pipeline

and appurtenances, thereby reducing the potential for contaminated runoff from the animal pens from reaching area stormwater, groundwater, and surface water resources.

Groundwater flow on-site would not be confined due to the implementation of Phase 1 or 2 of the Asia Trail Project. Minor increases in impervious surfaces would result in a small reduction of the recharge area for groundwater on the site. The maximum proposed construction depth ranges from approximately zero to eight feet below ground surface, and groundwater (if present) would most likely occur at the confining bedrock layer of approximately 12-15 feet below the natural soil surface (or where minor perched groundwater may occur). Therefore, there would be no anticipated impact on groundwater resources. Under the preferred alternative, demolition, renewal, and modernization of facilities and infrastructure would have a minor impact on water resources from construction activity.

Mitigation

Prior to beginning construction activities, erosion and sedimentation control plans and a stormwater management plan are would be prepared and submitted to the D.C. Department of Consumer and Regulatory Affairs (DCRA). The erosion and sedimentation control plan would include measures to prevent erosion of cleared areas and the transport of soil and sediment. The design consultant has provided preliminary erosion and sedimentation plans to NCPC. The stormwater management plan would address runoff and pollutant discharge. Construction is not anticipated to occur in areas containing groundwater; however, dewatering measures will be implemented for subsurface construction if perched groundwater is encountered. Implementation of these mitigation measures would minimize or avoid impacts to water resources from accomplishment of both Phase 1 and 2 and will be demonstrated in the submission to NCPC of project construction documentation if required by the work activity encountering the groundwater area.

Hazardous Materials: Since excavation activity may be pronounced, soil borings in the proposed project area were achieved but detected no contaminated fill material. Additionally soil reports identified there is little to no possibility that terrain could be contaminated in the proposed development area. Environmental soil sampling and testing of areas, if a potential presence would be suspect, would be undertaken to reveal if any contaminant levels exist and whether they would exceed EPA health and safety thresholds. Should contaminants be found at any stage of utility demolition or excavation, disposal efforts would be monitored by appropriate District of Columbia government officials and further sampling protocols then may be required to ascertain if the soils would require remediation prior to discarding at an appropriate landfill.

Mitigation

To minimize the potential adverse impacts should any hazardous materials result from the construction stages of Phase 1 or Phase 2, the following measures would be provided in the submission of project plans to NCPC review staff, coordinated with the District of Columbia Environmental Health Administration, Hazardous Waste Division and the District of Columbia Department of Consumer and Regulatory Affairs, to demonstrate a written plan:

- To remove and contain hazardous waste materials including asbestos-containing materials (ACM), lead-based materials consistent with applicable handling regulations by licensed contractors and trained personnel, and the removal of hydrocarbon hazardous substances.
- To accomplish environmental soil testing for contamination that includes analysis of soil samples by a certified lab, and development of provisions for removal and containment consistent with applicable regulations.
- To collect, transport, and dispose of asbestos- or lead-bearing waste by a specially licensed contractor in accordance with the requirements of Title 40 CFR Volume 23 Part 763.
- That addresses hazardous materials to be removed and which would be shipped, consistent with applicable transfer regulations and procedures, to a hazardous waste disposal facility. There are a number of such facilities in the surrounding states that are licensed to handle such material.
- To segregate wastes to reduce quantities of hazardous waste.
- To haul hazardous wastes by a licensed hazardous waste hauler with permanent labeling.
- To dispose of hazardous and non-hazardous waste in accordance with all federal, state, and local regulations.

Staff finds the minor environmental effects and their mitigation supportable and fully defined by the EA evaluation. The separate National Historic Preservation Act, Section 106, review and mitigation actions will be further defined by additional analysis and design efforts in consultation with the District of Columbia Historic Preservation office, and a Memoranda of Agreement developed as required.

National Historic Preservation Act

SI began Section 106 consultation in October 2003 on the proposed project at the National Zoological Park, which is listed in the National Register of Historic Places. The alterations would occur in the northwest portion of the zoo, near the Connecticut Avenue entrance. The Olmsted Walk would be affected in two ways—the physical connection of the new Asia Trail to the Olmsted Walk at two points, and visual effects that might result in the alteration of views from the Walk toward the Asia Trail, especially since the new trail would be higher in elevation. SI has not yet determined if these alterations would have an adverse effect.

The Elephant House, while not listed on the Historic Register, is eligible for listing due to its age. As a result, potential changes to the building are subject to historic preservation review. The Elephant House might be affected, depending on still-incomplete architectural and engineering studies to be achieved under Phase 2 of the project. SI states that potential alterations to the building could include: structural reinforcement, modernization of the building systems, renovation and expansion, and possible relocation and reconstruction. SI states that the Elephant House will be treated according to the Secretary's Standards.

Due to the known presence of Native American settlements within the Washington, D.C. area, an archaeological study was conducted of the project area by SI. Phase 1 archaeological

investigation has indicated that none of the tested areas reveal any artifacts of concern. Therefore, SI has determined that the proposed improvements would not likely impact archaeological resources in the project area.

New and upgraded trails would be constructed at the site, along with new habitats, visitor viewing areas, and exhibit buildings. SI staff is also examining the potential for archaeological discovery in this portion of the zoo. Consultation with the D.C. State Historic Preservation Office (DC SHPO) and other parties, including the Commission, has occurred and will continue through subsequent development of Phase 2. The District of Columbia Historic Preservation Office reviewed, pursuant to the National Historic Preservation Act, Section 106, plans and information for the Asia Trail, Phase 1, and concurred with the determination of no adverse affect for that portion of the Asia Trail Project on February 17, 2004.

Federal Capital Improvements Program

The Asia Trail Project is included in the Federal Capital Improvements Program, Fiscal Years 2003-2008 adopted by the Commission on July 11, 2003. The listed projects include:

- ASIA I, RENOVATE DEER/TAPIR
Recommended
\$8,000,000 for planning, design, and construction to renovate or replace the existing bear habitat area. Three acres of the existing exhibit will be re-designated and renovated. Prior Funding: \$1,400,000.

- ASIA I & II, NEW ELEPHANT HOLDING AREA AND YARD RENOVATION
Recommended
\$51,500,000 Total Project Cost: \$52,000,000; Prior Funding: \$500,000.