

Natural history exhibits venture beyond black-box dioramas

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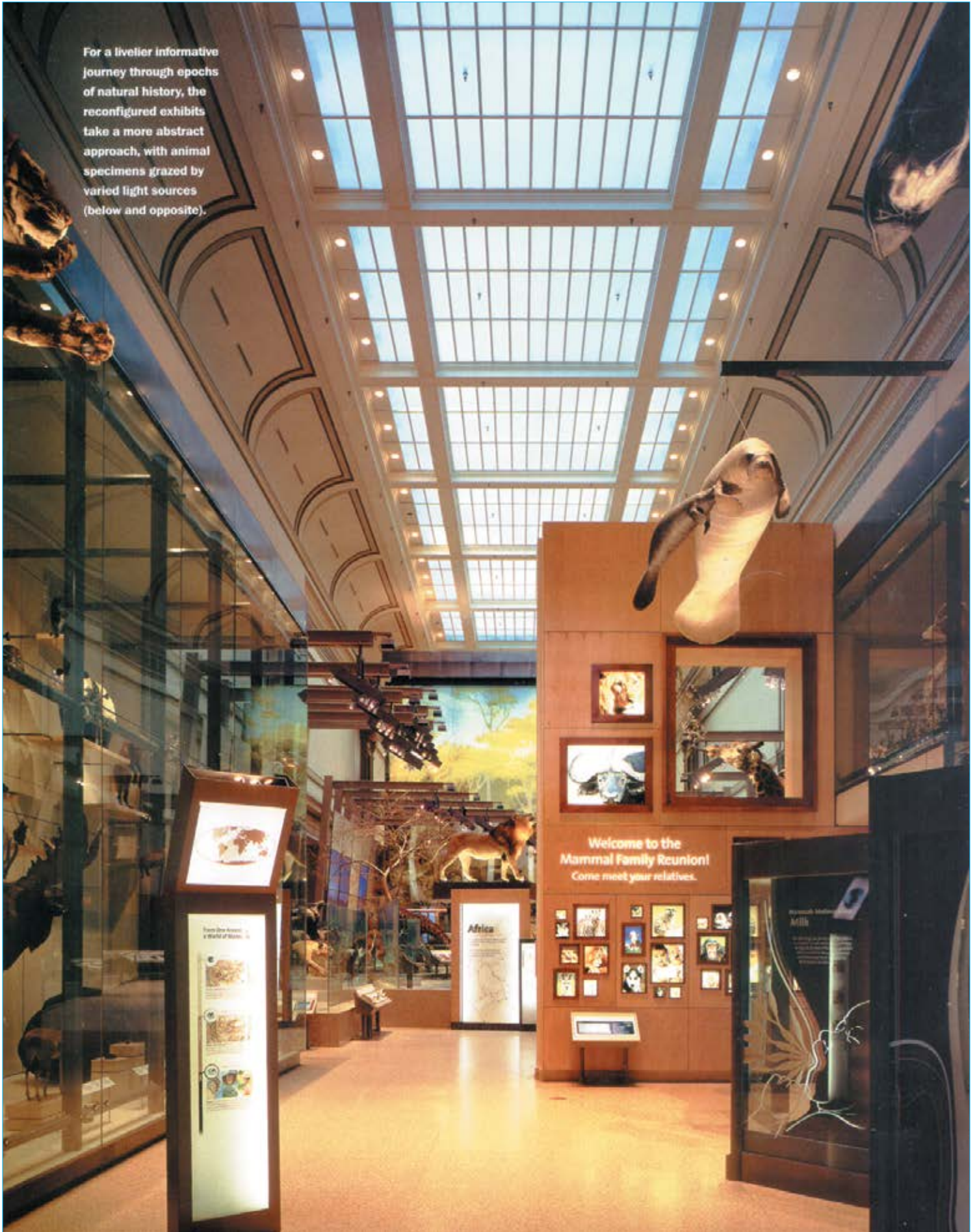
276 National Museum of Natural History, Washington, D.C.

Suzanne Powadiuk Design

The hall of mammals at the Smithsonian's National Museum of Natural History in Washington, D.C., is enjoying new life as a revamped attraction that engages patrons in a more interactive experience. With many animal specimens freed from the typical diorama format, patrons take a figurative walk through an African savannah, an Arctic tundra (photo right), a South American rain forest, and Australian grasslands. Suzanne Powadiuk helps take the exhibits beyond a static format, with layered lighting that sparks the imagination of patrons of all ages.



For a livelier informative journey through epochs of natural history, the reconfigured exhibits take a more abstract approach, with animal specimens grazed by varied light sources (below and opposite).



Welcome to the
Mammal Family Reunion!
Come meet your relatives.

Africa

From One Species
A World of Mammals

Research Mammal
Milk

Layered lighting by Suzanne Powadiuk creates drama in restaged National Museum of Natural History exhibits

By Alice Liao

Dioramas have been the backbone of natural history museums for more than a century. Last year, however, the Smithsonian Institution's National Museum of Natural History broke with this tradition when it unveiled the revamped Kenneth E. Behring Family Hall of Mammals, one of the largest projects undertaken by the museum since opening in 1910. The 25,000-square-foot facility's Beaux-Arts interiors, originally designed by architects Hornblower and Marshall, were restored by the firm of Hayes, Seay, Mattern & Mattern. The new installation enhances a collection of 274 mammals with a host of high-tech, interactive media. Exhibition designer Reich + Petch Design International has situated most of the specimens in straightforward, open displays that keep the focus on the animals while showcasing the larger backdrop of the interiors. "Because the structure of the exhibits could not touch the historic fabric of the building, we were creating a building within a building," says director of exhibits Stephen Petri. "Our challenge was twofold: To tell the story of the collections and to weave that story into the architectural experience of discovering the gallery."

With rooms designated for each continent, the displays are organized geographically as a way to explore the impact of different habitats on the evolution of mammals. The layout of the spaces and exhibit placement help move people through the building, an important function for a venue receiving 10 million visitors a year. Because all of the animal installations are static, audiovisual effects and dynamic lighting conceived by Suzanne Powadiuk immerse visitors in the drama of evolution. "The way to bring these objects to life was by giving people a sense that the context for these creatures is constantly shifting," says Petri. "Evolution occurs over long spans of time but is a response to changes that happen moment by moment."

This idea of environmental flux is vividly expressed in the centerpiece of the project, the Africa Hall. From the entrance, where luminous signage and pylons edged with LEDs introduce key themes, visitors enter the 56-foot-tall space, drawn farther inside by a leopard perched on a tree limb. As patrons meander through the exhibits of African wildlife, a massive laylight overhead begins to darken, signaling the end of the dry season and the approach of a rainstorm. To produce the illusion, Powadiuk concealed PAR38s and color scrollers in the attic between the laylight and a skylight, both of which were restored. Quartz PAR56 fixtures, mounted along the edges of the glass, provide ambient illumination while photocells adjust for daylight fluctuations.

The color shifts are accompanied by the sound of thunder and



strokes of lightning, which are simulated by a xenon flasher. Rear-projected onto frosted-glass panels and also contained in the floor, video images depict the changing landscape. The storms, which occur every 10 minutes, are programmed into a control system that also operates the lighting of a rain forest, painted onto layers of a 40-foot-tall scrim. Anchoring the Africa Hall, the panels vary in transparency, adding three-dimensionality, and conceal a network of catwalks that support an array

Project: Kenneth E. Behring Family Hall of Mammals, Smithsonian Institution, National Museum of Natural History, Washington, D.C.

Lighting designer: Suzanne Powadiuk Design—Suzanne Powadiuk, principal designer

Architect: Hayes, Seay, Mattern &

Mattern

Exhibit designer: Reich + Petch Design International—Tony Reich, principal; Stephen Petri, Fang-Pin Lee, Pauline Dolovich, Edmund Li, Sharon Ohno, Leslie Carelton, Heather Chiao, Stan Jurkovic, Dave Brohman, Ron Flood, project team

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of warm and cool fluorescents, MR16s, and theatrical image projectors. As the lighting shifts from the back to front of the scrim panels, the trees appear to shimmer with sunlight, casting patterns on the floor.

Set in conceptual environments and each articulated with key and fill light, the animals are presented like objects of art. Illumination is furnished by MR16s mounted on steel armatures, which extend above the displays and support additional graphics keying circulation paths. The MR16s were used throughout because of their precise color rendering. The steel armatures, notes Powadiuk, were developed to resolve the challenges presented by the ceiling height and to minimize visual clutter. "We wanted the exhibits to be as open as possible and the laylight and upper portion of the hall to remain unobstructed," she says. Plainly visible, the steel framework draws one's eye toward the ceiling, emphasizing the scale of the space and further integrating the appreciation of the architecture into the experience of the exhibits. The solution is also fitting, Powadiuk adds, as the steel elements resemble the skeleton of a whale, which is the largest member of the mammal family. ■

Sources

Track lighting: LSI; Litalab

Fiber optics: Fiberstars

Low-voltage lighting: Klikstrip

Theatrical fixtures: ETC

Fluorescent striplights: Belfer;

Metalux

Path lights: Bega

LED signage: Optosign

PAR fixtures: Zumtobel/Staff

Custom lighting: Lighting Nelson and Garrett

For more information on this project, go to Projects at

www.architecturalrecord.com.



Area
Savanna Waterhole

Over the past century, the savanna has lost much of its original biodiversity. The loss of species is a result of habitat destruction, overhunting, and climate change. The savanna is a vital ecosystem that supports a wide variety of life, and it is important to understand the threats it faces and the steps we can take to protect it.

A new steel armature supports downlighting by MR16 fixtures (above and opposite, top). Fluorescents, theatrical projectors, and video elements create

abstract images that evoke natural climates and locales. For more self-contained exhibits (opposite, bottom), fiber optics light text panels and specimens.



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