

Public Places, Public Spaces

Discovery Places

by Denise Liebowitz



Fine Art Photography



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Washington is crammed with world-class museums, memorials, and cultural attractions. They sit cheek-by-jowl along the National Mall, crowd one another in the city's revitalized downtown, and now even sprout on the suburban fringe. Visitors have their pick of extraordinary artistic, cultural, and historical destinations, and museums vie with one another to attract their share of tourists. Musty exhibits and outdated facilities cannot cut it in this competitive environment, and museum curators and their designers are loading their spaces with fresh, exciting displays, state-of-the-art technology, and plenty of "wow" factor. In many of Washington's most revered and venerable attractions, however, breathing new life into historically significant buildings requires an extra dose of drama and daring.

Discovering Mammals

A good place to see history meeting technology is in the newly restored **Mammals Hall** of the Smithsonian's **National Museum of Natural History**. Opened in 1910, the museum building was the first element of the McMillan Plan on the National Mall, and is one of Washington's quintessential Beaux Arts landmarks. With three great exhibit halls surrounding a soaring central rotunda, the museum's original monumental interior is an extraordinary example of the grand neoclassical style. Over the years, however, age, neglect, and a series of poorly conceived alterations took their inevitable toll, with the West Wing, the exhibit hall designed to house the mammals collection,

suffering the most extensive damage. Brick walls were built between the hall's support columns, skylights and windows were blocked up, and the original terrazzo floors were removed.

"This building is historic, it's very important, and we were absolutely committed to respecting it," said **Sarah Ghorbanian** of **Hayes, Seay, Mattern & Mattern (HSMM)**, architectural designer for the project. "Exciting, contemporary exhibits in sensitively restored historic spaces can successfully coexist. In many museum projects the new exhibits are the focus and the historic building is frequently not taken into consideration. In this project, we really kept the exhibit installation separate from the historic fabric."

Working with archival photographs and documentation, the HSMM design team oversaw a restoration process that demolished the outdated exhibits, pulled down the offending brick walls, and uncovered the monumental windows and skylights. The designers restored the interior's extensive ornamentation, laid a new terrazzo floor, and reinstated the original color palette of creams and browns. Then it was time to bring in the new. "Modern exhibits take on tremendous technology requirements—HVAC, duct work, audiovisual installations, mechanical systems—that the original building was never designed to support," said Ghorbanian. To preserve the integrity of the restoration she explained that "the historic fabric is part of the design solution but it is not really integrated into the exhibit presentation."

Ghorbanian noted that typically on museum projects, base building architects and exhibit designers do not closely coordinate their work, often because exhibit design lags behind building design, making synchronized design difficult. "In this project," said Ghorbanian, "we really engaged both the exhibit designers and fabricators and worked together as an integrated team."

"The general public in Washington and around the country is gaining a greater appreciation for the sensitive treatment of our historic buildings," according to HSMM's Joe Wells, AIA, principal-in-charge of the project. "A secondary benefit to this kind of historic restoration is that museum visitors get an extra learning experience in addition to the exhibits themselves."

Today the new **Behring Family Hall of Mammals** welcomes visitors to a dramatic, 25,000 square-foot interactive space featuring hundreds of animals displayed in a variety of environments. It is a visually stunning family-friendly destination where cutting-edge natural history scholarship is pursued within a treasured building.

Discovering Plants

Another "grande dame" of the National Mall that recently received a high-tech facelift is the **U. S. Botanic Garden Conservatory**, located just down the hill from the Capitol. Designed by **Bennett, Parsons and Frost** and constructed in 1933, the conservatory was originally comprised of eight linked glass houses and evoked the great crystal palaces of Europe. In addition to being the first national botanic garden, the conservatory was also the first aluminum structure in the United States.

"The structure was totally crumbling," said Michael Brainerd, project architect for **DMJM Design**, the architecture firm that undertook the renovation in 1997. Congress had delivered a mandate to the **Architect of the Capitol** to either upgrade the entire complex or condemn it. Brainerd recalled that during an early assessment tour of the facility, a structural bolt simply popped out and the corrosive damage of fertilizer was visible on the metal structure everywhere.





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To preserve the character of the original exterior, the architects retained the historic brick structure and restored or recreated portions of the exterior, including the classical limestone façade, the fountains, and the arched windows. They meticulously recreated the dome of the former Palm House, the central, 93-foot high glass pavilion and centerpiece of the conservatory, and reconfigured an elevated walk that brings visitors high up into the jungle canopy. To showcase its collection of more than 4,000 plants, the new structure replicates a variety of climates ranging from high altitude desert to tropical jungle.

“The biggest challenge was updating all the mechanical systems,” said Brainerd. “In the original installation, the mechanical systems were passive with manually operated windows and vents to control temperature and light. Now of course, all the systems are computer regulated and each greenhouse has a different environment. Finding the right balance of temperature, light, and humidity took a while at first, but it’s working fine now.”

Robert Pennington of the U.S. Botanic Garden said, “Mike and his team were very responsive and were able to work on the aesthetics of the project as well as meet all of its structural requirements. They were good partners in our value engineering exercise to keep costs in line.” As an example of the shared commitment to stay within budget, he cited the selection of a shade system. “We knew that we were going to need a highly effective shade system for all these complicated curved glass surfaces. We looked at very expensive custom solutions and in the end went with an affordable off-the-shelf installation that does just what we want it to.”

Restored and rejuvenated, the U.S. Botanic Garden is ready for its second century and able once again to transport visitors to exotic realms. The conservatory’s glittering, glassy transparency is distinctive in Washington’s formal Beaux Arts architectural landscape. It is refreshing in its bold display of a soaring aluminum skeleton and glass skin and reminds us of the power of architecture to satisfy the senses.

Discovering (Mechanical) Birds

The renovation and restoration of the Natural History Museum and the Botanic Garden are all about protecting treasured historic structures while nudging them into the 21st century. In contrast, the curators and architects of the spanking new **Udvar-Hazy Center** at Dulles Airport were free to embrace cutting-edge technology and design without the constraint of an existing historic fabric. Designed by **Hellmuth, Obata + Kassabaum, PC (HOK)**, and opened in late 2003, the Center is the companion facility to the **National Air and Space Museum** on the National Mall. The new museum allows Smithsonian curators to display the thousands of aviation and space artifacts that could not be exhibited on the Mall due to lack of space.

The first thing a visitor notices about the Udvar-Hazy Center is its size; mind-boggling, over-the-top BIG. The Aviation Hangar, the main exhibition hall, is a column-free space nearly 1,000 feet long, 250 feet wide, and more than 100 feet high. The entire Air and Space Museum on the Mall would easily fit within this one hall. The adjacent Space Hangar is smaller but still immense. Everything within the Center is on a heroic scale, including doors that are 40 feet tall and steel trusses that are 10 stories high and capable of supporting 20,000 pounds. The new facility includes an IMAX theater, an observation tower, and the usual array of eateries, museum shops, and administrative offices.

Contending with all this vastness was HOK Project Manager **Walter Urbanek, AIA**. “A lot of thought went into making certain this huge space did not dwarf its visitors,” he said. “We are particularly pleased with the way the elevated walkways and ramps cut through the space and provide visitors with a human-scale perspective on the exhibits.” With many of the museum’s 120 aircraft suspended from trusses, the series of bridges and walkways offers a variety of routes through the exhibition and brings





Alan Karchmer Photography



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visitors close to the artifacts. “We were inspired to some extent by the huge zeppelin hangars of the 1930s that expressed their function in their form,” Urbanek explained.

The Air and Space Museum on the National Mall, which opened in 1976, is also the work of HOK. Urbanek noted that exhibit designers of the original museum were able to simulate aircraft in flight against a “sky” of large expanses of glass. “Today, curators are much more concerned with too much sunlight and potential degradation of their artifacts. Without big windows and skylights in the new center, we needed to construct our ‘sky’ in a different way.” Consequently, the Aviation Hangar’s big, light barrel vault has no dark corners, and there is plenty of space around each suspended aircraft.

The design team worked closely with museum curators to ensure the building structure could handle these very large and heavy exhibits. “The number, weight, and arrangement of the various aircraft were carefully calibrated with the size of the building, the spread of the trusses, and the overall budget,” explained Urbanek. Even with such careful coordination, there were inevitable scrambles. “Originally, there were no plans to exhibit the Concorde. However, the museum was delighted to acquire it and we just added more bays and made the building bigger.”

Outside, a tall control tower greets visitors and announces the Center’s airport connection. A large cylindrical structure houses the IMAX theater and plays against the vertical tower and massive vaulted hangars of the exhibition spaces. With this bold yet harmonious architectural composition, the new center looks right at home in its Dulles setting, with Eero Saarinen’s extraordinary terminal building visible in the distance. 🏛️



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