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ArchNewsNow: Riverside Reveries: The Museum of Life and the Environment by William McDonough + Partners; Ralph Appelbaum Associates; and Nelson-Byrd Landscape Architects

POSTED BY ALLISON

York County, South Carolina: A riverbank with ancient fish weirs and giant oaks inspires a “living museum.”

by **Kristen Richards**
May 6, 2002

Editor’s note: A special session on Green Museum Design has been added to the AIA National Convention program: William McDonough, FAIA, Principal, and Christopher Hays, AIA, Design Partner, will present this project on Friday, May 10, 12-1 pm, in Room 203B at the Charlotte Convention Center. The program will follow the lecture by Hugh L. McColl, Jr., the former president of Bank of America and a major sponsor of the museum.

What is a “green museum?” Given that fresh air and abundant daylight potentially contradict the goals of traditional black-box exhibit space, in which the visitor is immersed completely in the subject matter on display, is a “sustainable” museum even practical? The Museum of Life and the Environment, the first museum project by William McDonough + Partners (WM+P), addresses this challenge. Located on the shore of the Catawba River in York County, South Carolina, the museum will explore the relationships between culture and nature, people and place, by focusing on the heritage of the Carolina Piedmont and other demonstrative environments around the world. The museum is being designed as a close collaboration betweenWM+P, Ralph Appelbaum Associates, and Nelson-Byrd Landscape Architects. The architecture and its systems will operate in conjunction with the landscape and exhibits as a unified

Located 30 minutes south of Charlotte, North Carolina, the site – an undeveloped 400 acre lot – offers a unique opportunity to reconnect the local community to the river, the original reason for settlement in the area. (Theproperty was donated to the York County Culture and Heritage Commission in 1998 by Jane McColl, wife of former Bank of America Chairman Hugh McColl, Jr.; the museum itself will take up about 40 acres.) The existing landscape offers dramatic spaces and views, particularly the area surrounding the stream between the island and the north bank, where the museum is sited. The rushing water and the densely vegetated island create a cool, quiet, protected oasis, and the architecture and landscape are being developed to dramatize this space through a series of interior and exterior spaces lining a necklace-shaped pathway. The progression through the site is one of discovery – from the entry road, the porous-paved parking terraces, the entrance court, the building itself, the interior exhibits, and the gardens below, through to the island beyond. Raised boardwalks become bridges allowing visitors to cross to the island.

The building and primary gardens are sited just above the 100-year flood plain; the eroded bank where the floods occur may actually be part of the outdoor exhibits. Generally, over the course of any given day, the water level varies by 3-5 feet or so, rising and falling with the release of water from the Lake Wylie dam to the north.

The museum entrance will be located at the top of the steep riverbank, offering a spectacular view of the stream, island, and river. Woven carefully into the existing topography, the building will spring from the crest of the hill. From the approach side, most of the building is below the visitors' view, nestled into the slope. Grass roofs unite the top of the building with the adjacent meadow, and native endangered sunflowers will be allowed to grow on the roofscape. The sod roof also thermally protects the building, changes with the seasons, provides habitat, creates oxygen, and sequesters carbon, so that it contributes to a humane environment and an architecture that is basically seamless with the land.

According to a report in The Herald (the daily paper for York and Chester counties) on WM+P's presentation to museum representatives, engineers, and architects earlier this year, lead architect William McDonough said: "You just walk into a meadow, and all of a sudden, it's a building."

From below, the building spreads along the arc of the hill, jogging around principal trees that are to be preserved. The orientation of the building allows ample daylight on the south side (facing the river), and the roof is serrated to bring soft light into the heart of the building. The interior is stratified with gradations of light and space. The north galleries are fully buried in the hillside, completely enclosed and protected from light. Light-sensitive artifacts will be housed there. The middle gallery, where light is diffused

be an interior pool. These interior thematic galleries will relate to the exterior gardens, so the exhibit continues into the surrounding landscape, where wildlife gardens, biological treatment ponds, and fish-viewing chambers serve as educational tools. On the island, a “wind pavilion” constructed of wood pipes will capture breezes off the river to create harmonic sounds – the tower will be a visual and aural culmination of the museum experience.

The various disciplines and building systems all express the project’s themes. Heating and cooling will occur through a radiant floor system that works with the mass of the earth and the coolness of the water to regulate temperature, so the mechanical system will illustrate how the building integrates with the surrounding landscape. Photovoltaics demonstrate the use of solar energy to power the building. Exterior sunshade materials are being studied to react to varying temperatures and solar angles, so the glazing system capitalizes on the natural tendency of materials to expand and contract. The primary structural walls, which radiate through the arc of the building’s plan, are composed of custom concrete blocks measuring approximately 3-by-5 feet. Exposed throughout the building, the hollow blocks will convey air, supplementing the radiant floors with ventilation. These walls will extend northward from the building into the landscape, forming bench-height garden walls, furthering the impression that the museum is extruded from the hill.

Gently curved at the top to follow the profile of the hill, these stone-like walls echo the ruins of fish weirs in the stream below. Left by unidentified ancient peoples, the weirs are estimated to be as much as 5,000 years old. Given that the more recent historic communities entered the region no earlier than 500 years ago, the sense of time evoked by these ruins is unfathomable. “They suggest an epochal scale,” says project architect Lance Hosey, AIA. “For us, the weirs are a powerful illustration of the interaction between humanity and nature, so they provide a perfect metaphor for the project. The building’s form, materiality, and relationship to the landscape are inspired by these simple structures.”

McDonough characterizes the new building as a “living museum” and a “legacy to future generations. It will be more productive than destructive, and will offer a message of hope to young people.”

Owner: York County Culture & Heritage Commission, Rock Hill, SC; Van Shields, Director

Architect: William McDonough + Partners, Charlottesville, VA

Team: Ralph Appelbaum, Scott Simeral, Evelyn Kelly

Landscape Architecture: Nelson-Byrd Landscape Architects, Charlottesville

Team: Susan Nelson, Warren Byrd, Kennon Williams

Structural: Guy Nordenson and Associates, New York

Mechanical: Flack + Kurtz, New York

Area: 120,000 gross square feet; 40,000 square feet of exhibit space

Spring 2002: completion of conceptual design

2005: construction completion

Founded in 1981, William McDonough + Partners is an internationally recognized firm of architects, planners, and leaders in sustainable design, and has received wide acclaim for giving vital aesthetic form to innovative models of ecologically intelligent architecture and planning. Projects frequently serve as a benchmarks for those in search of a sustaining design agenda both in the United States and around the world. The firm's portfolio of design and planning work for large corporate campuses, academic institutions, and communities, as well as individuals and families, includes milestones of the sustainable design movement. The firm moved from New York City to Charlottesville, Virginia, in 1994, upon Mr. McDonough's appointment as Dean of the School of Architecture at the University of Virginia.

Ralph Appelbaum Associates are planners, designers, and producers of award-winning museum exhibitions, visitor centers, and educational environments. Subject areas range from natural history and the physical sciences, to cultural, social, and corporate history, to sports and the fine arts, with over 90 projects in the corporate portfolio. Notable projects include: the U.S. Holocaust Memorial Museum, Washington, DC; Intel Museum, Santa Clara, California; Museum of African-American History, Detroit; Hall of Biodiversity and Rose Center for Earth and Space, which are part of the American Museum of Natural History, New York City; and the Corning Museum of Glass, Corning, New York.

Susan Nelson-Warren Byrd Landscape Architect's philosophy centers around

prospect and refuge – so that the local ethos of a place is never lost or homogenized. Through the use of appropriate design strategies, Nelson-Byrd attempts to be particularly responsive to environmental considerations of storm water retention, wildlife attraction and energy conservation. Their projects include botanic gardens and arboreta, such as the Center for Sarah P. Duke Gardens, corporate and institutional work, and private residences and gardens.

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