

# North Carolina Museum of Art

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## **THE NORTH CAROLINA MUSEUM OF ART EXPANSION ENVIRONMENTALLY CONSCIOUS DESIGN**

The new 127,000-sq.-ft. gallery building currently taking shape will ultimately reveal a beautifully crafted architectural structure with striking roof lines, a dramatic exterior, and soaring glass walls nestled in a gently rolling garden.

What will not be so obvious is the structure's responsiveness to environmental sustainability. At the outset, the planning team determined the building and gardens should embrace green principles consistent with the development of the Museum Park and its related art and ecology program. Thus the environmental functionality of the structure was designed to build and operate the Museum in a sustainable manner: controlled storm water runoff, enhanced energy efficiency, climate-control systems, and responsible landscaping practices.

The superb collection of the North Carolina Museum of Art will be showcased in an environmentally conscious building that creates a beautiful contemplative setting, blending nature and art to create a positive experience for all visitors.

### **LIGHTING**

This is an uncommon art museum with a unique, single-story design that allows a consistency of natural illumination into the galleries to create an unparalleled visitor experience. The play of light will begin with the approach to the building as aluminum skin panels (produced from approx. 30% recycled materials) catch the changing light of the day; it continues into the galleries with daylight illumination, which will provide a large percentage of the lighting required to view the art under optimal visual conditions. Exterior louvers above the 362 skylights will emit only indirect north light into galleries, while lenses and diffusing filters control daylight exposure in order to conform to art conservation standards.

Although more than half of the exterior walls are glass, a ceramic frit pattern within the glass screens 50% of direct sunlight. In addition, roof-mounted photocells will signal changing sunlight conditions, allowing track lighting and shading systems to be optimally tuned for protection of the collection and heat-gain control. The lighting is programmed to complement the works of art during the day and provide full illumination after the sun has set to help reduce energy consumption. For the visitor, each trip into the galleries will have a slightly different feel as lighting conditions shift and transform.

## **LANDSCAPING**

The lush setting for the expansion—the centerpiece of the art and nature conceptual framework of the building—will clearly express the balance between striking landscape design and sustainable environmental standards. Drought-tolerant and native plant species will be maintained by an irrigation system with progressive drought management; no municipal water will be used for irrigation. A 90,000-gallon cistern will store captured roof water and air conditioning condensation (at the rate of up to seven gallons/minute). Three dramatic reflecting pools will be replenished by the cistern as well. Several bioretention zones are designed to retain storm water and are part of an overall storm water management plan that will not only meet current standards but improve water quality in the House Creek basin. The Museum has received a substantial grant from the North Carolina Clean Water Management Fund to implement an innovative system that includes rebuilding a bioswale and retention pond on the site.

To reduce mowing and irrigation, the landscape will have large areas of tall native grasses integrated into the sculpture gardens. Seasonal shade in the courtyards, provided by towering American elm trees gracing the plaza, will help keep visitors cool while setting the stage for visitors' appreciation of the art and nature connection.

## **BUILDING MATERIALS AND INTERIOR SYSTEMS**

Constructed with locally provided materials for structural steel and concrete, the new gallery building creates an ideal environment for the NCMA's extensive art collection and for its visitors. State-of-the-art HVAC and filtration systems include high-efficiency chillers and computerized systems to monitor temperature, humidity, and carbon dioxide levels to ensure visitors are comfortable and the collection is safe. The building systems are being commissioned by an independent agent to check plans, monitor installation performance of environmental and mechanical systems, and improve long-term maintenance and life-cycle costs to make certain the building will operate efficiently at its debut and well into the future.

## **THE MUSEUM PARK**

The interplay of art and nature extends into the Park, as does the environmentally conscious development. During site preparation 50 trees were transplanted, and as part of the ongoing park management plan, invasive species were removed while native plant species were reintroduced. Forested areas are also in the process of being restored. Three miles of recreational trails—highlighting the intersection of art and nature—are integrated with the Capital Area Greenway system to encourage active living. One of the largest museum art parks in the world, the NCMA's Park includes 13 works of art amid 164 acres managed in an environmentally progressive, sustainable manner.

In association with North Carolina State University, the Museum has established the Partnership for Art and Ecology, a park management and educational collaboration.

**PROGRAMS**

The North Carolina Museum of Art is committed to stewardship of important public cultural assets and natural resources. In addition to initiatives with the expansion and in the Park, the Museum will continue to promote environmental awareness through art and educational programs.

The NCMA is actively pursuing LEED (Leadership in Energy and Environmental Design) Certification for the new gallery building.