

North Carolina Museum of Art Sustainable Design Features

The West Building is registered for Silver LEED Certification (Leadership in Energy and Environmental Design)

Energy Efficiency/ Climate-Control Systems

- State of the art HVAC and filtration systems include high-efficiency chillers and computerized systems to monitor temperature and humidity. System operates at about 45% over ASHRAE efficiency standards, reducing energy consumption.
- Super-insulated pre-cast wall panels and high efficiency glass curtain walls protect interior from swings in outside temperatures.
- Window shades and curtains reduce building heat gain.
- Ventilation system uses heat exchangers to recapture heat or cooling from exhaust air to preconditioned replacement air.
- Displacement ventilation is provided by a large volume of slow-moving air, which circulates through fixed gallery walls.

Continual Energy Monitoring

- Energy use, temperature and relative humidity, as well as VOCs and carbon emissions are continuously monitored.

Low-Emitting VOC's, Natural or Recycled, and Recyclable Materials

- Included paints, coatings, finishes, VOCs are closely monitored.

Lighting

- 360 skylights and glass walls provide 50% of the gallery lighting, reducing consumption of energy for artificial lighting.
- Skylights are shaded by north-facing louvers, reducing heat and direct sun penetration.
- Roof mounted photocells detect changing sky conditions, controlling track lighting and shading systems for optimal efficiency.
- Artificial multi-track lighting is all low-voltage halogen plus low energy florescent, switched with integrated control systems and ramp on-off, protecting against surges.

Responsible Landscaping

- Drought-tolerant and native plant species are maintained by an irrigation system with progressive drought management.
- More than 50% of new landscape is mulched or tall meadow grasses reducing mowing and irrigation.
- American elm, river birch, and oak trees offer seasonal shade.
- Large areas of mowed turf are being replaced throughout the museum campus with native grasses in a program to reduce mowing emissions and improved water quality.

- Invasive species are being removed from forested areas to re-establish native stands.

Comprehensive Water Management Strategy

- Rainfall is captured from the building's roof.
- Up to 7 gallons/minute is collected from air conditioning condensate.
- Additional water is captured from roadways, and is filtered through 4 bio-retention zones.
- Water runoff is stored in a 90,000-gallon cistern and used to irrigate four acres of new landscape and to replenish three reflecting pools.
- Municipal water will not be used for irrigation or reflecting pools.
- 29,000 square feet of porous gravel pavement which collects rainwater into nutrient reducing sub-filtration beds (under the elms and river birch).
- The lawn areas utilize 8,800 cubic feet of porous soils where nutrients are removed as water drains slowly.
- Overflow from the cistern and water from larger rain events are managed through an advanced water-quality swale and pond system for the entire 50-acre building site.
- A two acre bio-swale slows heavy rain events through a series of grass and rock formations, reducing flow velocity and removing nutrients.
- A terraced five-acre pond removes excess nutrients from the new facility and existing museum contributing clean water to the Neuse River system as it flows to the coast.

Transportation

- New bicycle and pedestrian trails connect the museum campus to the Capital Area Greenway system to encourage health and diverse use of the museum.
- The expansion completes art park walking loops which are desirable exercise lengths.
- Large areas of overflow parking are pervious surfaces.

