SUSTAINABILITY AT THE MUSEUM OF ART
WHAT IS SUSTAINABILITY?

“Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs.”

-World Commission on Environment and Sustainability (Brundtland Commission, 1987)

“Sustainability is equity over time. As a value, it refers to giving equal weight in your decisions to the future as well as the present. You might think of it as extending the Golden Rule through time, so that you do onto future generations, [and] your present fellow beings, as you would have them do onto you.”

-Robert Gilman, Director, Context Institute

“Economy, Environment, Equity”

-Triple Bottom Line by John Elkington, SustainAbility
SUSTAINABLE BALANCE

What is Sustainability?
What is Sustainability?

Sustainability or Organizational Goals
Performance Criteria
Tools and Strategies
...Holistic Thinking...

WHAT IS SUSTAINABILITY?
WHAT IS SUSTAINABILITY?

TOOLS / STRATEGIES

Insulated Glazing
Staff/Visitor Education
Alternative Transportation
Cool Roof Technology
Efficient Building Envelope
Green Roof
Indoor Air Quality
Advanced Control Systems
Environmental Pollution Control

Recycling Waste
Bicycle Racks
Recycled Materials
Wind Energy
Bioswales

Daylighting
Energy Efficiency
Photovoltaics
Bicycle Racks
Pervious Pavement

Efficient Artificial Lighting
Energy Star Appliances
Local Food
Recycled Materials

Energy Efficiency
Efficient Mechanical Systems
Low Flow Fixtures
Building Commissioning

WHAT IS SUSTAINABILITY?
UNIQUE ASPECTS OF MUSEUMS

“We have climate controls to maintain!”

- Museum Director Interviewed for PND Article

“A museum, especially an art museum, is a very unforgiving type of building, because the air inside the building has to always be very consistent ... It can sway about five percent, but if it swings more than that, the artwork will suffer. Conventional art museums spend a lot of energy maintaining that condition.”

- Architect of Grand Rapids Art Museum

“Pursuing LEED is unusual for a museum ... we have very specific temperature and humidity criteria to protect the artwork. So to achieve the silver certification is quite a feat.”

- Art Institute of Chicago Spokesperson
## UNIQUE ASPECTS OF MUSEUMS

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The required temperature and humidity ranges mean that ENERGY is the number one issue for most museums.
MUSEUM MISSION

“To help sustain and nurture an artistic culture in the beautiful yet fragile ecology of Cape Cod through exhibitions, classes, public lectures, and social events.”

PROJECT DETAILS

Location: Provincetown, Massachusetts
Type: Interpretive Center
Description: 72% New / 28% Renovation
Size: 19,500 sq. feet
Cost: $5 million
Certification: LEED Silver
Completion: February 2006
# SUSTAINABLE FEATURES

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PROVINCETOWN ART ASSOCIATION AND MUSEUM
GRAND RAPIDS ART MUSEUM
MICHIGAN
DONOR MISSION

“PETER M. WEGE, a leading philanthropist in western Michigan, is not an art collector. But he is an environmentalist ... Mr. Wege pledged $20 million to the project, stipulating that the new building be ‘green.”

PROJECT DETAILS
Location: Grand Rapids, Michigan
Type: Art Museum
Description: Expansion - 3x former exhibit
Size: 125,000 sq. feet / 18,000 exhibit
Cost: $60 million
Certification: LEED Gold
Completion: Fall 2007
SUSTAINABLE FEATURES

Site
- Encourage Alternative Transportation
- Reduced Light Pollution
- Protected Open Space
- Bicycle Racks and Parking
- Low Albedo Roofing/Paving

Water
- Landscape with Indigenous Species
- Grey Water Used for Irrigation
- Low Flow Toilets and Fixtures
- Waterless Urinals

Energy
- Innovative Energy Recovery Wheel
- Efficient Building Envelope
- Daylighting / High Performance Lights

Materials
- Reuse of Existing Structure
- Durable Low Maintenance Materials
- Invest in Recycling Infrastructure
- Renewable Materials

Indoor Environment
- Visual Comfort
- Low VOC Materials
- Air Quality / Acoustic Quality

70% of Spaces use Daylight
- Photovoltaic System
- Heat Recovery Ventilation System
- Advanced Control Systems
- Efficient HVAC
- Advanced Commissioning of Systems

GRAND RAPIDS ART MUSEUM
GRAND RAPIDS ART MUSEUM
DONOR MISSION

“The top floor will have a series of skylights ... Sunlight will shine through the flying carpet, through the skylights, and then be further filtered by a vellum fabric screen system in the galleries. The combination of these systems will effectively filter sunlight down to 1% natural light when it reaches the gallery space on the top level. The Art Institute, as with most old museums, was built essentially as a giant limestone box ... Light is a danger to art, and therefore all the light used is artificial light. But the new wing will have natural light, which will be very exciting for viewing the art.”

- Todays Facility Manager Magazine

PROJECT DETAILS

Location: Chicago, Illinois
Type: Art Museum
Description: Expansion
Size: 260,000 sq. feet / 63,000 exhibit / 18,000 education
Cost: $258 million
Certification: LEED Silver
Completion: Summer 2009
SUSTAINABLE FEATURES

Site
- Encourage Alternative Transportation
- Reduced Light Pollution
- Protected Open Space
- Bicycle Racks and Parking
- Low Albedo Roofing/Paving

Water
- Landscape with Indigenous Species
- Grey Water Used for Irrigation
- Low Flow Toilets and Fixtures
- Waterless Urinals

Energy
- Efficient Building Envelope
- Daylighting / High Performance Lights
- ‘Flying Carpet’ Daylight Screen

Water Side Economizer Cycle
- Heat Recovery Ventilation System
- Advanced Control Systems
- Efficient HVAC
- Advanced Commissioning of Systems

Materials
- Reuse of Existing Structure
- Durable Low Maintenance Materials
- Invest in Recycling Infrastructure
- Renewable Materials

Indoor Environment
- Visual Comfort
- Low VOC Materials
- Air Quality
- Acoustic Quality
Laboratory Buildings have similar high energy requirements to museums. The graph below compares the cost/sf of LEED certified and non-certified projects.

- DavisLangdon, The Cost of LEED Revisited
ACCOUNTING FOR SUSTAINABILITY

“Buildings built to LEED NC guidelines save on average 30% on energy over the traditional constructed buildings. And the higher your LEED rating the better the energy performance.”

- Rick Fedrizzi, Founding Chairman USGBC

LEED Certified 25%

LEED Silver 35%

LEED Gold and Platinum over 45%+

SUSTAINABILITY AT THE BALTIMORE MUSEUM OF ART

DISCUSSION
ADDITIONAL CASE STUDIES

Mashantucket Pequot Museum, Connecticut
Harley-Davidson Museum, Milwaukee
Clinton Presidential Library, Little Rock, Ark.
Blanton Museum of Art, Austin, Texas
Contemporary Art Museum of St. Louis
Crystal Bridges Museum of American Art
Provincetown Art Association and Museum, Provincetown, Mass.
University of Michigan Art Museum, Ann Arbor
National Aquarium, Baltimore

Saint Louis Zoo
The Lion House at the Bronx Zoo, Bronx, N.Y.
Museum of Science, Boston
North Carolina State Museum of Natural History
Santa Cruz Museum of Natural History
Bell Museum of Natural History, Minneapolis
Boston Children’s Museum
Children’s Museum, Pittsburgh
Children’s Museum of Durango, Colo.
RESOURCES

Museum Related:

American Association of Museums (AAM) - www.aam-us.org/
Green Exhibits - www.greenevents.org/
Green Restaurant Association - www.dinegreen.com/

Sustainability:

Environmental Protection Agency - www.epa.gov
US Green Building Council (USGBC) - www.usgbc.org
Green Roundtable - www.greenroundtable.org
Green-e - www.green-e.org/
Chesapeake Bay Foundation - www.cbf.org/
Natural Capital Institute - www.naturalcapital.org/
Rocky Mountain Institute - www.rmi.org/

For more information:

EMO Energy Solutions – www.emoenergy.com/