New York State Pollution Prevention Institute Workshop

Green Building Initiatives in New York State

Office of General Services
June 2010

David A. Paterson, Governor
New York State

John C. Egan, Commissioner
Office of General Services
Introduction

- Green Buildings and Sustainability
- New York State & OGS Sustainability Policies
- LEED Projects & the Greening of the Governor’s Mansion
Green = Sustainability

“Meeting the needs of the present generation without compromising the ability of future generations to meet their needs.”

Brundtland Commission 1987
In the U.S., Buildings Account for:

- 12% water use
- 39% CO₂ emissions
- 65% waste output
- 71% electricity consumption

Source: U.S. Green Building Council
Energy Consumption by Sector

Data from the US Energy Information Administration
What is the USGBC and LEED?

LEADERSHIP in ENERGY and ENVIRONMENTAL DESIGN

A leading-edge system for certifying DESIGN, CONSTRUCTION, & OPERATIONS of the greenest buildings in the world

Developed by the US Green Building Council, coalition of Leaders across the building industry

www.usgbc.org
LEED: What it is...

- A US market-based standard to promote sustainability
- A rating system that provides a definition for green buildings and helps prevent “greenwash”
- A Whole-building approach such that no system works in a vacuum: requires a collaborative, integrated building design and construction process
USGBC has four levels of LEED:

- Level earned is determined by point system
- Points awarded for measures undertaken in each of 5 categories
What Is Green Building?

- Site Planning
- Water Management
- Energy
- Material Use
- Indoor Environmental Quality
State Sustainability Policies

- Executive Orders 111 & 24 & 4
- 45 x 15 Plan
- Green Building Construction Act
Executive Order 111: Energy

- Reduce energy consumption by 35% by 2010 (based on 1990 loads)
- Use Renewable Energy (electric): 20% by 2010, 25% by 2013
- Applies to All State Buildings
Executive Order 111: Buildings

- **Buildings > 20,000 sq. ft.:**
  - 20% improvement beyond Energy Code for new, 10% for existing
  - Meet criteria for a LEED rating

- **Buildings < 20,000 sq. ft.:**
  - Incorporate significant attributes of green design

- **All Buildings:** use Energy Star products
Executive Order 24: GHG Emissions Reduction

- Reduce Greenhouse Gas Emissions by 80% by the year 2050
- Form Climate Action Council
- Prepare Climate Action Plan
45 x 15 Plan  January 2009

- Stretches Executive Order No. 111

- By 2015 New York will meet 45% of electricity needs through:
  - Improved energy efficiency
  - Clean renewable energy
Green Building Construction Act

- Act signed on August 26, 2009 with OGS designated as the lead agency
- Applies to new buildings, additions and substantial renovations
- References LEED and Green Globes
- Regulations take effect by end of 2010
- Each agency will prepare annual building performance report
What does Green mean at OGS?

- Green Cleaning Program
- Carpooling permits & Plug-in hybrid vehicles
- Spigots for drinking water fountains – Executive Order 18
- Food waste composting & Compostable cutlery and serving ware
What does Green mean at OGS?

- Lighting improvements
- Wind turbine on Corning Tower – 1.5 kW
- Solar thermal project Wallkill Correctional facility
- Green roof at OMRDD Holland Avenue office building
OGS Sustainability Projects

5 LEED certified buildings
11 SPiRiT registered projects (USArmy)
20 LEED registered projects
3 EnergyStar buildings
Pine Bush Discovery Center

Client: Department of Environmental Conservation and the Pine Bush Commission
Project Description:
Interpretative exhibits and office space renovation
Total Area: 26,000 sq. ft.

**LEED Rating:** Gold

**Green Highlights:**
- Salvaged site materials
- Pervious paving
- Clivus Multrum
- Photovoltaic site lighting
- Drought resistant plantings
- Dual flush toilets
Warrensburg Sub-Headquarters

Client: Department of Environmental Conservation
Designer: Hyman-Hayes
Project Description: Office Rehab plus addition
Total Area: 18,000 sq. ft.

Rating: LEED Gold

Green features include:
- Water-efficient landscaping
- Waterless urinals
- Local/regional materials: stone
- FSC wood
- Low-emitting materials
- Daylighting and views
- Recycled materials: carpet, fly ash in concrete
- Energy performance exceeds Energy Code by 30%
- Construction waste recycled: 78%
Marcy Residential Mental Health Unit

Client: Department of Correctional Services
Designers: OGS D&C / LaBella Architects / M/E Engineering
Project Description: Health facility within a correctional setting
Total Area: 58,000 s.f.

Rating: LEED Silver

Green features:
- Energy efficient lighting
- Reflective roof
- Daylighting
- Watersaving plumbing
- High efficiency HVAC equipment
- Regional materials
- Recycled content: steel, flyash in concrete
Hudson Valley Traffic Management Center

Client: NYS Department of Transportation / State Police
Designers: OGS D&C / DeWolff / CHA / M/E Engineering
Project Description: New traffic control operations, Emergency response center, State Police barracks, offices and support spaces

Total Area: 93,000 s.f.

Rating: LEED Silver

Green features:
- Water-efficient landscaping
- Green cleaning products
- Energy Star equipment
- Green pest management policy
- Reduced mercury in light bulbs
New York State Governor’s Mansion

Client: Office of General Services (OGS)
Designers: OGS, Genesys
Project Description: Existing residence, State Police Command Center, Rockefeller Pool House and FDR Green House
Total Area: 37,000 sq. ft.

Rating: LEED Gold

Green Highlights:
- Lawn irrigation using river water
- Green cleaning materials and methods
- Recycled products
- Household recycling rate of 88%
- 3.5KW Photovoltaic Canopy
- Whole building retro-commissioning
- Expected energy savings of 25% over previous 3 years
What Is Green Building?

- Site Planning
- Indoor Environmental Quality
- Water Management
- Material Use
- Energy
Sustainable Sites

Construction Activity Pollution Prevention – prevent erosion with:

- Temporary or permanent seeding
- Mulching
- Earth dikes
- Silt fencing
- Sediment traps
- Sediment basins
Sustainable Sites

Stormwater Management - Reduce impervious cover, promote infiltration, capture and treat stormwater with:

- **Alternative surfaces**: Vegetated roofs, pervious pavement, grid pavers
- **Treatment techniques**: rain gardens, vegetated swales, rainwater recycling
Water Efficiency

Minimize Landscape Watering

Minimize Wastewater

Minimize Water Use

Introduction to Building Green & LEED: for Contractors
Energy & Atmosphere

Minimize Energy Use

Use Renewable Energy

Minimize Ozone and Global Warming
Materials and Resources

- Construction Waste Management
- Materials Reuse
- Recycled Content
- Regional Materials
- Rapidly Renewable Materials
- Certified Wood
What Makes a Product Green?

1. Products Made with Salvaged, Recycled, or Agricultural Waste Content

2. Products That Conserve Natural Resources

3. Products That Avoid Toxic or Other Emissions

4. Products That Save Energy or Water

5. Products That Contribute to a Safe, Healthy Built Environment

www.buildinggreen.com/auth/article.cfm?fileName=090101a.xml
Indoor Environmental Quality

Reduce indoor air quality problems and promote comfort and well-being of construction workers and building occupants:

- Protect HVAC system during construction: cover ducts
- Use filters at return air grills
- Provide centralized cut stations for dust control
- Enclose finished drywall areas with plastic
- Protect materials from moisture damage by sequencing installation of materials
- Provide air flushout before occupancy and/or air testing
Indoor Environmental Quality

- Low VOC emitting materials
  - Adhesives & sealants
  - Paints & coatings
  - Flooring systems – both carpeting and hard surface
- Composite wood & agrifber products with no urea formaldehyde resins
- Controllability of systems
- Daylight and Views
Governor’s Mansion

- Multi-building site – 6 acres
- Executive Mansion
- Rockefeller Pool House
- State Police Command Center
- FDR Greenhouse & Pool
- Greenhouse
Executive Mansion Roles:

- Historic Structure
- Public Asset
- Educational Resource
- Venue for Events:
  - School groups
  - Public tours
  - Large civic groups
- Governor’s Residence
## Performance Periods & Timeline

<table>
<thead>
<tr>
<th></th>
<th>Jan - Mar</th>
<th>Apr - June</th>
<th>July - Sept</th>
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<tbody>
<tr>
<td>1</td>
<td>2008</td>
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### 2007-2008 Calendar

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<tr>
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<tr>
<td><strong>NYPA Conservation Measures</strong></td>
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<tr>
<td>Solar Pool Cover (FDR Pool)</td>
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<td>Lighting</td>
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<td>Clothes Washer</td>
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<td>Refrigerator/Freezer</td>
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<td>Kitchen Spray Nozzles</td>
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<tr>
<td>Repair Gasketing</td>
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<tr>
<td><strong>NYPA Photovoltaic Panels</strong></td>
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<tr>
<td>Rockefeller Poolhouse</td>
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<td>Carport - Bid Award</td>
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<tr>
<td><strong>OGS</strong></td>
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<td>Register project</td>
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<td>Meet with Building Admin., Utilities</td>
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<tr>
<td>Take LEED-EB workshop</td>
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<tr>
<td>LEED EB charette</td>
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<tr>
<td>Research products</td>
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<td>Prepare policies</td>
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<td>Calculations, utility bills</td>
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<tr>
<td>Waste Audit</td>
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<tr>
<td>Refrigerants swapped out</td>
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<tr>
<td>Carpool &amp; Hybrid Vehicle Signs</td>
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<tr>
<td>Entry mats</td>
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<tr>
<td>Bike Rack</td>
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<tr>
<td>GS 37 Cleaning Products</td>
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<td>Asbestos &amp; PCB plan developed</td>
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<tr>
<td>Testing Faulty Control valves</td>
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<tr>
<td>Hudson River irrigation</td>
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<td>Commissioning</td>
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<td>Track Recycling</td>
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<td>Submit to USGBC</td>
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<tr>
<td>Review by USGBC</td>
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<tr>
<td>Reply from USGBC (anticipated)</td>
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Sustainable Sites:

- Proximity to local transportation
- Bicycle rack
- Hybrid/Carpool vehicle parking
- Perennial gardens
Water Efficiency:

- Grounds irrigation filtered Hudson River water
- Low-flow nozzles, aerators for kitchen & bathrooms
Energy & Atmosphere: Governor’s Mansion

- Pool cover for FDR indoor pool
- Controls Modifications to HVAC heating/cooling systems
- Lighting Modifications
- Energy Star appliances & refrigerants
- Gasketing
- 3.5 kW PV array - Pool House canopy
- Attic Insulation – recycled jeans
Materials & Resources:

- Non-toxic cleaning products
- Low VOC paints and sealants
- Enhanced recycling program – 88% rate
- Recycled content:
  - Attic insulation - cellulose & recycled cotton
  - Bicycle rack
  - Office paper
- Regional sources:
  - Slate bathroom flooring from local quarry
  - Cement and flagstone
- Rapidly renewable: Sisal & coco entry mats
Indoor Environmental Quality

- No Smoking Policy
- Integrated Pest Management Policy (IPM)
- Green cleaning products & equipment policy
  - https://greencleaning.ny.gov/
- Views, individual temperature & light controls
- Walk-off entry mats
Innovation Credit 1: Exemplary Performance
Reduced Mercury Content in Light Bulbs

• Average mercury content of all light bulbs in the Mansion
  < 60 picograms/lumen hour
Innovation Credit 2: Exemplary Performance
Occupant Recycling and Expanded Recycling Program

- Recycling rate for 2008 was 88%
- Expanded Recycling Program:
  - Yard waste
  - Compostable Food
  - Fluorescent Light Bulbs
  - Batteries
  - Ballasts
  - Carpet & carpet pad
Innovation Credit 3: Public Education

LOW-COST GREENING TIPS:

1. Reduce/reuse light bulbs by replacing old incandescent bulbs with energy-efficient LED or CFL bulbs.
2. Wash your clothes in cold water.
3. Turn off lights when not in use.
4. Reduce garbage by recycling and reusing.
5. Drying the clothes with the heat setting of the dryer.
6. Turn down the thermostat on your hot water heater.
7. Close windows when temperatures drop below 50°F.
8. Use window treatments to reduce the amount of sunlight in the summer.

www.state.ny.us/governor/exmansion/index.html
Summary of LEED Credits Earned

<table>
<thead>
<tr>
<th>LEED – EB (v2.0)</th>
<th>New York State Governor’s Mansion</th>
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<tbody>
<tr>
<td><strong>48</strong> Points Achieved</td>
<td>LEED-EB Rating: Gold</td>
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</table>

**8 Sustainable Sites (SS)**
Credits were earned for environmentally sound exterior site management and various alternative transportation options such as preferred parking for hybrid/carpool vehicles and proximity to public transportation.

**2 Water Efficiency (WE)**
Water-efficient landscaping using non-potable source from nearby Hudson River reduced water use by 100%. Improvements to plumbing fixtures include low flow nozzles and aerators.

**8 Energy & Atmosphere (EA)**
Upgrades to the fan coil unit system, increased insulation in the attic spaces, a solar pool cover for the indoor pool, photovoltaic panels and lighting replacements optimized the building’s energy performance.
## Summary of LEED Credits Earned

**LEED – EB (v2.0)**

**New York State Governor’s Mansion**
LEED-EB Rating: Gold

### 48 Points Achieved

<table>
<thead>
<tr>
<th>Category</th>
<th>Possible Points</th>
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<tbody>
<tr>
<td>Materials &amp; Resources (MR)</td>
<td>16</td>
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<tr>
<td>Indoor Environmental Quality (EQ)</td>
<td>22</td>
</tr>
<tr>
<td>Innovation, etc.</td>
<td>5</td>
</tr>
</tbody>
</table>

**Certified**: 32-39  
**Silver**: 40-47  
**Gold**: 48-63  
**Platinum**: 64-85

### Materials & Resources (MR)

Expanded recycling, use of sustainable cleaning products and low-VOC products, and abundant use of recycled, regional and rapidly renewable products aided in this category.

### Indoor Environmental Quality (EQ)

Daylighting, green cleaning systems, walk off mats, pest management and occupant controllability of light and temperature earned points in this category.

### Innovation, etc.

Extra points were awarded for exemplary performance in recycling and reduced mercury in light bulbs, a green education program consisting of student tours and public outreach, and a side-by-side comparison of the Governor’s sustainability Executive Orders with the LEED-EB rating system as well as a LEED AP on the project team.
U.S. Green Building Council

LEED GOLD
2009

U.S. Green Building Council

GREENING THE NEW YORK STATE
GOVERNOR’S MANSION
ALBANY, NY
HAS SUCCESSFULLY MET THE GREEN BUILDING STANDARDS REQUIRED FOR
THE FOLLOWING LEVEL OF CERTIFICATION UNDER THE LEADERSHIP IN
ENERGY AND ENVIRONMENTAL DESIGN (LEED) GREEN BUILDING RATING SYSTEM:
LEED for Existing Buildings

February 2009

David A. Paterson
Governor
Commissioner

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Green Building Initiatives in New York State

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