

# Sustainable Design Guidelines at The Port Authority of NY & NJ

*Airports Going Green*  
November 15, 2010



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OF NEW YORK & NEW JERSEY

# Port Authority District Map



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# ***WTC Sustainable Design Guidelines***

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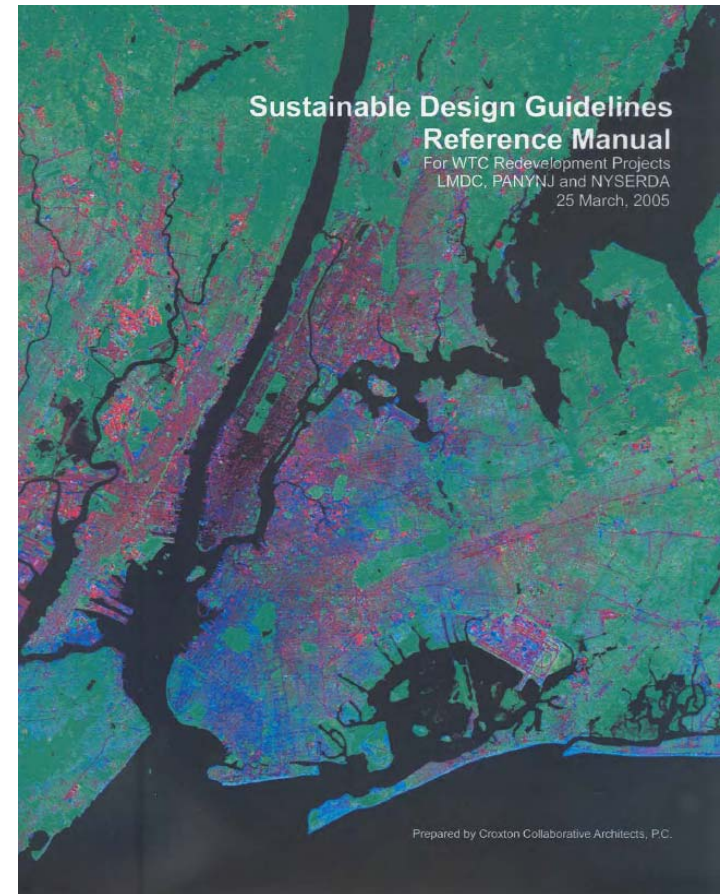
Guidelines began in 2003.

Development was a collaborative effort between:

- The Port Authority of New York and New Jersey
- The Lower Manhattan Development Corporation
- New York State Energy Research Development Authority

Reference manual (completed in 2005) provided comprehensive strategies for this urban-scale development:

- Planning
- Environmental and sustainable design
- Construction
- Operation



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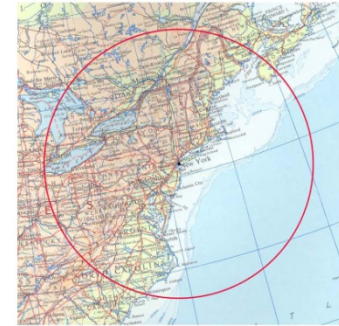
# Sustainable Building Guidelines

- Building, Facility or Multi-Buildings Projects
  - New Construction
  - Substantial Renovation or Reconstruction
- Applicability determined by square footage
- Uses LEED (NC 2.1) and WTC Guidelines as models
- Aligned with NYS Executive Order 111
- Tenant required to use guidelines
- Includes multiple credits requiring plans for the O+M of buildings.



## Sustainable Design Project Manual

The Port Authority of New York & New Jersey  
Engineering Department



August 15, 2007



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# ***Buildings: Water Management***

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## **WEQ-1 Water Management Plan**

- General information on equipment operation and maintenance as relates to efficiency
- Utility information
- Facility information
- Planning considerations

## **Related Credits**

WEQ-2 Wastewater Reuse

WEQ-3 Water Use Efficiency



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# ***Buildings: Materials Management***

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## **MEQ-1 Material Management Plan and Recycling**

Material Management Plan includes:

- Recycled content
- Location of manufacture/harvest
- Agricultural content
- Sustainable harvest certification
- Maintenance requirements
- Recyclable/reuse potential at end of useful life
- Recycled material collection area plan and storage

## **Related Credits**

MEQ-4 Materials with Recycled Content

MEQ-5 Material Proximity

MEQ-6 Agricultural Materials

MEQ-7 Wood Certification

MOEQ-2 Recycling Program



# ***Buildings: Materials Management Sample Plan***

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## **Newark Terminal B Plan Outline**

- Responsibility for Implementation
- Areas Included in Program
  - Public Access
  - Airport Employee Access
- Materials to be Recycled
- Separation of Recyclables
- General Specifications for Recycling Bins
- Locations of Recycling Bins
- Bags to be Used
- Labeling, Signage, and Publicity
- Collection and Hauling
- Information Tracking
- Program Monitoring and Adjustment



# ***Buildings: Energy Management***

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## **EEQ-1 Comprehensive Energy Management Plan**

### **Pre-Construction Initiatives:**

- Maximum use of site generated resources.
- Minimum use of off-site, non-sustainable generated energy resources.
- Energy use budget for project for first year of occupancy, broken down by major energy consumption category
- Identification of measures and strategies for increasing on-site utilization of energy

### **Post-Construction Initiatives:**

- Energy utilization after 1<sup>st</sup> year of operation verse original energy use budget.
- Evaluation of significant deviations and detailed explanation.
- Identification and description of future strategic energy reduction strategies.
- Itemization of all site generated energy resources and annual updates of actual performance.

## **Related Credits**

EEQ-5 Renewable Energy Transition Plan

EEQ-6 Energy Systems Control and Maintenance

EEQ-7 End User Metering & Tenant Energy Conservation Model



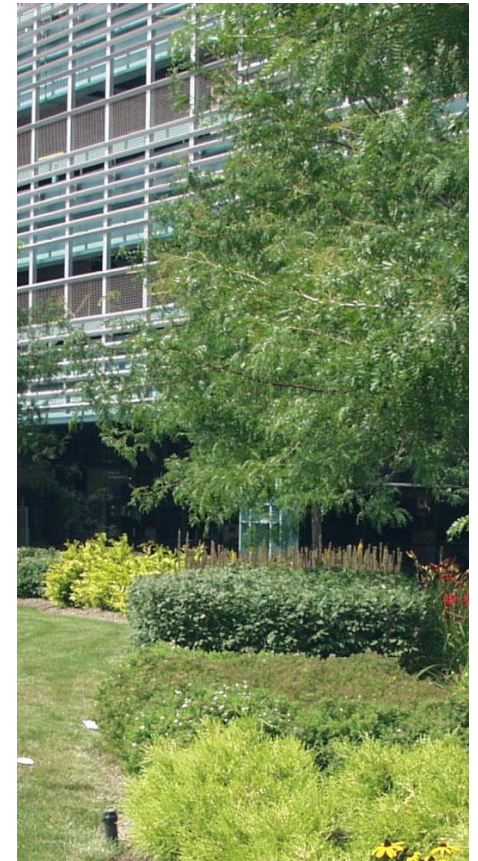
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# ***Buildings: O+M Programs***

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## **MOEQ-1 Maintenance & Operations Programs**

- Include Operations and Maintenance personnel in ongoing project design reviews.
- Schedule the coordination of maintenance tasks with operations schedules.
- Establish program for post occupancy reviews to occur after 1st and 5<sup>th</sup> year of building operation.
- Develop a Maintenance Manual for each individual building that clearly delineates required maintenance schedules and procedures.



# ***Buildings: O+M Training***

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## **MOEQ-3 Maintenance & Operations Training**

- Protocols for monitoring of building management systems and controls.
- Procedures for reviewing and incorporating Building Commissioning recommendations.
- Identification of environmentally preferable cleaning and maintenance products and related procedures.



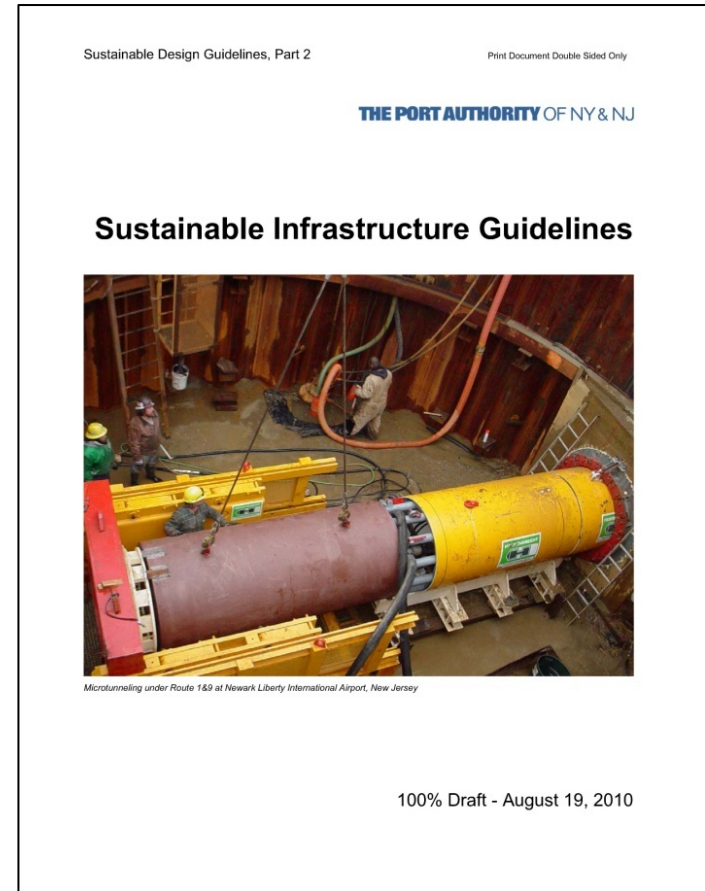
# Sustainable Infrastructure Guidelines

## Sustainable Infrastructure Guidelines:

Site	Energy & Atmosphere
Water	Construction Environmental
Materials	Maintenance & Operations

## Infrastructure Project Types:

Airfield	Bridge - New Construction
Roadway	Bridge and Tunnel Rehab
Utility	Marine Structures (Docks, Wharves, Bulkheads, etc)
Parking	Landscaping
Trackwork	Exterior Lighting
Port Site Work	Mech/Electrical Systems
Intelligent Trans. System	



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# ***Infrastructure: Maintenance & Operations Strategies***

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## **IO-1 Sustainable Landscape Maintenance Plan**

- Removal of invasive species
- Recycling of organic waste
- Use of organic compost as fertilizer
- Obtaining seeds and plants from facilities that practice sustainable plant production
- Reduce soil erosion or soil compaction from maintenance activities
- Use harvested rainwater or treated graywater for irrigation purposes
- Utilize a computerized irrigation system connected to a weather station
- Education of employees on sustainable landscape maintenance
- Use of low-toxicity integrated pest management (IPM) system
- Protect vegetation from impact of sand and de-icing chemicals in winter. Limit use of sodium chloride and calcium chloride; utilize less toxic materials such as potassium acetate or calcium magnesium acetate



# ***Infrastructure: Maintenance & Operations Strategies***

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## **IO-2 Maintain Soil Quality**

- Analyze type and quality of soil(s) at project site
- Amend existing soils as necessary to meet anticipated uses of land, support existing and new vegetation and enhance stormwater management
- Prevent soil pollution and contamination of land during construction and/or maintenance work
- Protect soil and minimize soil erosion during maintenance activities
- Avoid soil compaction during maintenance activities
- Recycle waste organic matter into mulch /compost; use for improving soil quality, where practical
- Manage snow/ice deicing and or removal without negatively impacting soil quality
- Prepare a watering schedule to prevent over or under watering



# *Plan Implementation Challenges*

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## **Main Challenges:**

- Who makes up the design team?
- How does the facility provide input?
- Who develops the facility specific plans?
- Who is responsible for plan execution and how can that process be iterative?
- Who does the yearly follow up and revision of the plans?



# Questions?

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