Sustainable Design Project Manual

The Port Authority of New York & New Jersey
Engineering Department

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Introduction

On July 13, 2006, The Port Authority of NY & NJ adopted a policy "to reduce adverse environmental impacts of the design, construction, operation and maintenance and occupancy or leasing of new or substantially renovated buildings and facilities, reconstruction projects, and programs." (see Appendix A). The policy applies both to Port Authority and tenant capital projects.

The Port Authority adopted this policy because it envisioned the development of environmentally-friendlier projects that were better designed, built, and operated. This manual provides the tools to help Port Authority staff and tenants turn that vision into reality.

To reduce the environmental impacts of capital projects, the Port Authority's policy references the "Sustainable Design Guidelines." These guidelines provide a design roadmap when undertaking new construction projects, substantial renovations, and reconstruction projects. More specifically, the guidelines take a comprehensive view of environmental performance, addressing the environmental qualities of capital projects that have to do with site, water, energy, construction, materials, indoor environment and maintenance & operations.

The guidelines take into account the US Green Building Council's LEED™ 2.1 Rating System, New York State Executive Order 111 and the New York State Green Building Tax Credit. The Port Authority does not require that new buildings be LEED™ certified. By adhering to the guidelines, however, new buildings could obtain certification.

Policy requirements vary according to project type (i.e. new construction, substantial renovations, reconstruction projects) and project size. The policy requires the most extensive application of sustainable design in new projects that are 20,000 gr. sq. ft. or more. At the other end of the spectrum, the policy exempts all projects that are smaller than 5,000 gr. sq. ft.

A Categorization Checklist helps you determine the type and size of your project and identify the corresponding policy requirements. The manual also provides Sustainable Design Guideline checklists that provide a quick overview of all the guidelines that apply to your project type and size.

Each guideline is then presented in detail along with its corresponding template. The templates indicate the actions and documentation that are required to demonstrate adherence with the guidelines. Tenants who undertake capital projects must submit the completed templates for review as part of their Tenant Alteration Application.

Below is a summary of how this manual guides policy compliance:

- Use the Categorization Checklist to determine project type, size and policy requirements.
- Turn to the Sustainable Design Guidelines checklist for an overview of the guidelines that apply to your project type and size.
- Prepare a project description.
- Adhere to the appropriate Sustainable Design Guidelines.

Introduction

- Submit a completed template, as part of the Tenant Alteration Application, for each of the guidelines you incorporate in your project (tenants only).

The field of sustainable design is evolving quickly, and the Port Authority will seek to reflect this evolution by updating the guidelines as necessary and by seeking ways to facilitate policy compliance.

Project Type Categorization

Policy for Sustainable Design AP45-2

Checklist for New Construction

PROJECT TYPE	New Building, Facility, or Multi-Building Construction	Based on Gross SF	YES / NO
1	Is the New Building, Facility or Multi-Building Construction If **YES**, then adhere to the "Sustainable Design Guidelines" and surpass building code standards for energy efficiency by at least 20%. Indicate compliance with the Policy by providing the corresponding documentation in the "Guidelines" as part of the Tenant Alteration Application. If **NO**, go to step 2.	> 20,000 SF	YES / NO
2	Is the New Building, Facility or Multi-Building Construction If **YES**, then incorporate significant attributes of sustainable design (site planning, water, energy, materials and resources and indoor environmental quality) to comply with the Policy. To incorporate significant attributes of sustainable design, choose from and apply those sustainable design guidelines that are applicable to the project. Indicate compliance with the Policy by providing the corresponding documentation outlined in the "Guidelines" as part of the Tenant Alteration Application. If **NO**, go to step 3.	5,000 – 19,999 SF	YES / NO
3	Is the New Building, Facility or Multi-Building Construction If **YES**, project is exempt from this policy.	< 5,000 SF	YES / NO

Project Type Categorization

Policy for Sustainable Design AP45-2

Checklist for Substantial Renovation & Reconstruction Projects

PROJECT TYPE	Substantial Renovation & Reconstruction Projects	Based on Gross SF	YES / NO
4	Is the substantial renovation or reconstruction project in a building or facility that is If **YES**, then apply best efforts to adhere to the "Sustainable Design Guidelines" and surpass building code standards for energy efficiency by at least 10%. Indicate best efforts to adhere to the "Guidelines" by following those guidelines that are applicable to the project. Provide the corresponding documentation outlined in the "Guidelines" as part of the Tenant Alteration Application. If **NO**, go to step 5.	>20,000 SF	YES / NO
5	Is the substantial renovation reconstruction project in a building or facility that is If **YES**, then incorporate significant attributes of sustainable design (site planning, water, energy, materials and resources, and indoor environmental quality) to comply with the Policy. To incorporate significant attributes of sustainable design, choose from and apply those Sustainable Design Guidelines that are applicable to the project. Indicate compliance with the Policy by providing the corresponding documentation outlined in the "Guidelines" as part of the Tenant Alteration Application. If **NO**, go to step 6.	5,000 – 19,999 SF	YES / NO
6	Is the substantial renovation or reconstruction project in a building or facility that is If **YES**, project is exempt from this policy.	< 5,000 SF	YES / NO

Project Type Categorization

Policy for Sustainable Design AP45-2

Checklist Definitions

Building or Facility is defined as a structure of 5,000 gross square feet or more.

Substantial Renovation is defined as the replacement of more than 50% of any building subsystem, measured in units appropriate to the subsystem within any consecutive 12-month period. (See checklist to determine if the project qualifies).

Subsystem is defined as a building assembly or building set of units made up of, but not limited to, exterior walls, windows, doors, roofs, ceilings, floors, lighting, piping, duct work, insulation, heating, ventilation and air cooling (HVAC) system equipment or components, electrical appliances and plumbing appliances.

Reconstruction Project or Gut Rehabilitation is defined as a renovation: (1) in which four or more Primary Building Systems of a building or facility undergo at least a 50% replacement within a 12-month period; and (2) during the performance of which the affected building area is unoccupied for 30 days or more due to the nature of the construction. (See checklist to determine if the project qualifies).

Primary Building System is defined as: (1) HVAC; (2) Lighting; (3) Exterior Walls and Windows; (4) Roofs and Ceilings; (5) Plumbing; (6) Other Electrical

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PANYNJ Sustainable Design Guidelines Checklist
New Construction greater than 20,000 Gr. SF

REQUIRED | RECOMMENDED

SITE ENVIRONMENTAL QUALITIES

- SEQ-1 Site Selection
- SEQ-2 Support Urban Development
- SEQ-3 Brownfield Redevelopment
- SEQ-4 Expanded Public Transit
- SEQ-5 Bicycle Access
- SEQ-6 Alternative Fuel Vehicles
- SEQ-7 Reduced Parking Disturbance
- SEQ-8 Reduced Site Disturbance
- SEQ-9 Reduced Development Footprint
- SEQ-10 Storm Water Use
- SEQ-11 Heat Island Effect Mitigation Site
- SEQ-12 Heat Island Effect Mitigation Roof
- SEQ-13 Light Pollution Reduction

WATER ENVIRONMENTAL QUALITIES

- WEQ-1 Water Management Plan
- WEQ-2 Wastewater Reuse
- WEQ-3 Water Use Efficiency
- WEQ-4 Landscape Hydrology

MATERIAL ENVIRONMENTAL QUALITIES

- MEQ-1 Material Management Plan and Recycling
- MEQ-2 Building Re-Use
- MEQ-3 Resource Reuse
- MEQ-4 Materials with Recycled Content
- MEQ-5 Material Proximity
- MEQ-6 Agricultural Materials
- MEQ-7 Wood Certification
- MEQ-8 Maintenance and Durability
- MEQ-9 Wood Preservatives
- MEQ-10 Design Flexibility

ENERGY ENVIRONMENTAL QUALITIES

- EEQ-1 Comprehensive Energy Management Plan
- EEQ-2 Building Systems Commissioning
- EEQ-3 Optimize Energy Performance
- EEQ-4 Ozone Layer Protection/Greenhouse Gas Reduction
- EEQ-5 Renewable Energy Transition
- EEQ-6 Energy Systems Control and Maintenance
- EEQ-7 End User Metering
- EEQ-8 Additional Commissioning

CONSTRUCTION ENVIRONMENTAL QUALITIES

- CEQ-1 Construction Environment
- CEQ-2 Construction Storm Water Runoff/Pollution Prevention
- CEQ-3 Construction Waste Management
- CEQ-4 Construction IAQ Management Plan

INDOOR ENVIRONMENTAL QUALITIES

- IEQ-1 IAQ Performance
- IEQ-2 Daylight & Views
- IEQ-3 Air Quality Monitoring
- IEQ-4 Ventilation Effectiveness
- IEQ-5 Reduce Contaminants from Materials
- IEQ-6 Chemical & Particulate Control
- IEQ-7 Thermal Comfort
- IEQ-8 Pest Control
- IEQ-9 Personal Control
- IEQ-10 Acoustics
- IEQ-11 Lighting Quality

MAINTENANCE & OPERATION ENVIRONMENTAL QUALITIES

- MOEQ-1 Maintenance & Operations Program
- MOEQ-2 Recycling Program
- MOEQ-3 Training Program

Applicable
PANYNJ Sustainable Design Guidelines Checklist
New Construction between 5,000 and 19,999 Gr. SF

RECOMMENDED

SITE ENVIRONMENTAL QUALITIES

SEQ-1	Site Selection
SEQ-2	Support Urban Development
SEQ-3	Brownfield Redevelopment
SEQ-4	Expanded Public Transit
SEQ-5	Bicycle Access
SEQ-6	Alternative Fuel Vehicles
SEQ-7	Reduced Parking Disturbance
SEQ-8	Reduced Site Disturbance
SEQ-9	Reduced Development Footprint
SEQ-10	Storm Water Use
SEQ-11	Heat Island Effect Mitigation Site
SEQ-12	Heat Island Effect Mitigation Roof
SEQ-13	Light Pollution Reduction

WATER ENVIRONMENTAL QUALITIES

WEQ-1	Water Management Plan
WEQ-2	Wastewater Reuse
WEQ-3	Water Use Efficiency
WEQ-4	Landscape Hydrology

MATERIAL ENVIRONMENTAL QUALITIES

MEQ-1	Material Management Plan and Recycling
MEQ-2	Building Re-Use
MEQ-3	Resource Reuse
MEQ-4	Materials with Recycled Content
MEQ-5	Material Proximity
MEQ-6	Agricultural Materials
MEQ-7	Wood Certification
MEQ-8	Maintenance and Durability
MEQ-9	Wood Preservatives
MEQ-10	Design Flexibility

ENERGY ENVIRONMENTAL QUALITIES

EEQ-1	Comprehensive Energy Management Plan
EEQ-2	Building Systems Commissioning
EEQ-3	Optimize Energy Performance
EEQ-4	Ozone Layer Protection/Greenhouse Gas Reduction
EEQ-5	Renewable Energy Transition
EEQ-6	Energy Systems Control and Maintenance
EEQ-7	End User Metering
EEQ-8	Additional Commissioning

CONSTRUCTION ENVIRONMENTAL QUALITIES

CEQ-1	Construction Environment
CEQ-2	Construction Storm Water Runoff/Pollution Prevention
CEQ-3	Construction Waste Management
CEQ-4	Construction IAQ Management Plan

INDOOR ENVIRONMENTAL QUALITIES

IEQ-1	IAQ Performance
IEQ-2	Daylight & Views
IEQ-3	Air Quality Monitoring
IEQ-4	Ventilation Effectiveness
IEQ-5	Reduce Contaminants from Materials
IEQ-6	Chemical & Particulate Control
IEQ-7	Thermal Comfort
IEQ-8	Pest Control
IEQ-9	Personal Control
IEQ-10	Acoustics
IEQ-11	Lighting Quality

MAINTENANCE & OPERATION ENVIRONMENTAL QUALITIES

MOEQ-1	Maintenance & Operations Program
MOEQ-2	Recycling Program
MOEQ-3	Training Program

PANYNJ Sustainable Design Guidelines Checklist
Substantial Renovation greater than 20,000 Gr. SF

RECOMMENDED

SITE ENVIRONMENTAL QUALITIES

N/A	SEQ-1	Site Selection
☐	SEQ-2	Support Urban Development
N/A	SEQ-3	Brownfield Redevelopment
☐	SEQ-4	Expanded Public Transit
☐	SEQ-5	Bicycle Access
N/A	SEQ-6	Alternative Fuel Vehicles
N/A	SEQ-7	Reduced Parking Disturbance
N/A	SEQ-8	Reduced Site Disturbance
N/A	SEQ-9	Reduced Development Footprint
N/A	SEQ-10	Storm Water Use
N/A	SEQ-11	Heat Island Effect Mitigation Site
☐	SEQ-12	Heat Island Effect Mitigation Roof
☐	SEQ-13	Light Pollution Reduction

WATER ENVIRONMENTAL QUALITIES

☐	WEQ-1	Water Management Plan
☐	WEQ-2	Wastewater Reuse
☐	WEQ-3	Water Use Efficiency
N/A	WEQ-4	Landscape Hydrology

MATERIAL ENVIRONMENTAL QUALITIES

☐	MEQ-1	Material Management Plan and Recycling
☐	MEQ-2	Building Re-Use
☐	MEQ-3	Resource Reuse
☐	MEQ-4	Materials with Recycled Content
☐	MEQ-5	Material Proximity
☐	MEQ-6	Agricultural Materials
☐	MEQ-7	Wood Certification
☐	MEQ-8	Maintenance and Durability
☐	MEQ-9	Wood Preservatives
☐	MEQ-10	Design Flexibility

ENERGY ENVIRONMENTAL QUALITIES

☐	EEQ-1	Comprehensive Energy Management Plan
☐	EEQ-2	Building Systems Commissioning
☐	EEQ-3	Optimize Energy Performance
☐	EEQ-4	Ozone Layer Protection/Greenhouse Gas Reduction
☐	EEQ-5	Renewable Energy Transition
☐	EEQ-6	Energy Systems Control and Maintenance
☐	EEQ-7	End User Metering
☐	EEQ-8	Additional Commissioning

CONSTRUCTION ENVIRONMENTAL QUALITIES

☐	CEQ-1	Construction Environment
N/A	CEQ-2	Construction Storm Water Runoff/Pollution Prevention
☐	CEQ-3	Construction Waste Management
☐	CEQ-4	Construction IAQ Management Plan

INDOOR ENVIRONMENTAL QUALITIES

☐	IEQ-1	IAQ Performance
☐	IEQ-2	Daylight & Views
☐	IEQ-3	Air Quality Monitoring
☐	IEQ-4	Ventilation Effectiveness
☐	IEQ-5	Reduce Contaminants from Materials
☐	IEQ-6	Chemical & Particulate Control
☐	IEQ-7	Thermal Comfort
☐	IEQ-8	Pest Control
☐	IEQ-9	Personal Control
☐	IEQ-10	Acoustics
☐	IEQ-11	Lighting Quality

MAINTENANCE & OPERATION ENVIRONMENTAL QUALITIES

☐	MOEQ-1	Maintenance & Operations Program
☐	MOEQ-2	Recycling Program
☐	MOEQ-3	Training Program

Applicable
PANYNJ Sustainable Design Guidelines Checklist
Substantial Renovation between 5,000 and 19,999 Gr. SF

RECOMMENDED

SITE ENVIRONMENTAL QUALITIES

N/A	SEQ-1	Site Selection
☐	SEQ-2	Support Urban Development
N/A	SEQ-3	Brownfield Redevelopment
☐	SEQ-4	Expanded Public Transit
☐	SEQ-5	Bicycle Access
N/A	SEQ-6	Alternative Fuel Vehicles
N/A	SEQ-7	Reduced Parking Disturbance
N/A	SEQ-8	Reduced Site Disturbance
N/A	SEQ-9	Reduced Development Footprint
N/A	SEQ-10	Storm Water Use
N/A	SEQ-11	Heat Island Effect Mitigation Site
☐	SEQ-12	Heat Island Effect Mitigation Roof
☐	SEQ-13	Light Pollution Reduction

WATER ENVIRONMENTAL QUALITIES

☐	WEQ-1	Water Management Plan
☐	WEQ-2	Wastewater Reuse
☐	WEQ-3	Water Use Efficiency
N/A	WEQ-4	Landscape Hydrology

MATERIAL ENVIRONMENTAL QUALITIES

☐	MEQ-1	Material Management Plan and Recycling
☐	MEQ-2	Building Re-Use
☐	MEQ-3	Resource Reuse
☐	MEQ-4	Materials with Recycled Content
☐	MEQ-5	Material Proximity
☐	MEQ-6	Agricultural Materials
☐	MEQ-7	Wood Certification
☐	MEQ-8	Maintenance and Durability
☐	MEQ-9	Wood Preservatives
☐	MEQ-10	Design Flexibility

ENERGY ENVIRONMENTAL QUALITIES

☐	EEQ-1	Comprehensive Energy Management Plan
☐	EEQ-2	Building Systems Commissioning
☐	EEQ-3	Optimize Energy Performance
☐	EEQ-4	Ozone Layer Protection/Greenhouse Gas Reduction
☐	EEQ-5	Renewable Energy Transition
☐	EEQ-6	Energy Systems Control and Maintenance
☐	EEQ-7	End User Metering
☐	EEQ-8	Additional Commissioning

CONSTRUCTION ENVIRONMENTAL QUALITIES

☐	CEQ-1	Construction Environment
N/A	CEQ-2	Construction Storm Water Runoff/Pollution Prevention
☐	CEQ-3	Construction Waste Management
☐	CEQ-4	Construction IAQ Management Plan

INDOOR ENVIRONMENTAL QUALITIES

☐	IEQ-1	IAQ Performance
☐	IEQ-2	Daylight & Views
☐	IEQ-3	Air Quality Monitoring
☐	IEQ-4	Ventilation Effectiveness
☐	IEQ-5	Reduce Contaminants from Materials
☐	IEQ-6	Chemical & Particulate Control
☐	IEQ-7	Thermal Comfort
☐	IEQ-8	Pest Control
☐	IEQ-9	Personal Control
☐	IEQ-10	Acoustics
☐	IEQ-11	Lighting Quality

MAINTENANCE & OPERATION ENVIRONMENTAL QUALITIES

☐	MOEQ-1	Maintenance & Operations Program
☐	MOEQ-2	Recycling Program
☐	MOEQ-3	Training Program

PANYNJ Sustainable Design Guidelines Checklist
Reconstruction Project greater than 20,000 Gr. SF

RECOMMENDED

SITE ENVIRONMENTAL QUALITIES

- SEQ-1 Site Selection
- SEQ-2 Support Urban Development
- SEQ-3 Brownfield Redevelopment
- SEQ-4 Expanded Public Transit
- SEQ-5 Bicycle Access
- SEQ-6 Alternative Fuel Vehicles
- SEQ-7 Reduced Parking Disturbance
- SEQ-8 Reduced Site Disturbance
- SEQ-9 Reduced Development Footprint
- SEQ-10 Storm Water Use
- SEQ-11 Heat Island Effect Mitigation Site
- SEQ-12 Heat Island Effect Mitigation Roof
- SEQ-13 Light Pollution Reduction

WATER ENVIRONMENTAL QUALITIES

- WEQ-1 Water Management Plan
- WEQ-2 Wastewater Reuse
- WEQ-3 Water Use Efficiency
- WEQ-4 Landscape Hydrology

MATERIAL ENVIRONMENTAL QUALITIES

- MEQ-1 Material Management Plan and Recycling
- MEQ-2 Building Re-Use
- MEQ-3 Resource Reuse
- MEQ-4 Materials with Recycled Content
- MEQ-5 Material Proximity
- MEQ-6 Agricultural Materials
- MEQ-7 Wood Certification
- MEQ-8 Maintenance and Durability
- MEQ-9 Wood Preservatives
- MEQ-10 Design Flexibility

ENERGY ENVIRONMENTAL QUALITIES

- EEQ-1 Comprehensive Energy Management Plan
- EEQ-2 Building Systems Commissioning
- EEQ-3 Optimize Energy Performance
- EEQ-4 Ozone Layer Protection/Greenhouse Gas Reduction
- EEQ-5 Renewable Energy Transition
- EEQ-6 Energy Systems Control and Maintenance
- EEQ-7 End User Metering
- EEQ-8 Additional Commissioning

CONSTRUCTION ENVIRONMENTAL QUALITIES

- CEQ-1 Construction Environment
- CEQ-2 Construction Storm Water Runoff/Pollution Prevention
- CEQ-3 Construction Waste Management
- CEQ-4 Construction IAQ Management Plan

INDOOR ENVIRONMENTAL QUALITIES

- IEQ-1 IAQ Performance
- IEQ-2 Daylight & Views
- IEQ-3 Air Quality Monitoring
- IEQ-4 Ventilation Effectiveness
- IEQ-5 Reduce Contaminants from Materials
- IEQ-6 Chemical & Particulate Control
- IEQ-7 Thermal Comfort
- IEQ-8 Pest Control
- IEQ-9 Personal Control
- IEQ-10 Acoustics
- IEQ-11 Lighting Quality

MAINTENANCE & OPERATION ENVIRONMENTAL QUALITIES

- MOEQ-1 Maintenance & Operations Program
- MOEQ-2 Recycling Program
- MOEQ-3 Training Program

PANYNJ Sustainable Design Guidelines Checklist
Reconstruction Project between 5,000 and 20,000 Gr. SF

RECOMMENDED

SITE ENVIRONMENTAL QUALITIES

- ☐ SEQ-1 Site Selection
- ☐ SEQ-2 Support Urban Development
- ☐ SEQ-3 Brownfield Redevelopment
- ☐ SEQ-4 Expanded Public Transit
- ☐ SEQ-5 Bicycle Access
- ☐ SEQ-6 Alternative Fuel Vehicles
- ☐ SEQ-7 Reduced Parking Disturbance
- ☐ SEQ-8 Reduced Site Disturbance
- ☐ SEQ-9 Reduced Development Footprint
- ☐ SEQ-10 Storm Water Use
- ☐ SEQ-11 Heat Island Effect Mitigation Site
- ☐ SEQ-12 Heat Island Effect Mitigation Roof
- ☐ SEQ-13 Light Pollution Reduction

WATER ENVIRONMENTAL QUALITIES

- ☐ WEQ-1 Water Management Plan
- ☐ WEQ-2 Wastewater Reuse
- ☐ WEQ-3 Water Use Efficiency
- ☐ WEQ-4 Landscape Hydrology

MATERIAL ENVIRONMENTAL QUALITIES

- ☐ MEQ-1 Material Management Plan and Recycling
- ☐ MEQ-2 Building Re-Use
- ☐ MEQ-3 Resource Reuse
- ☐ MEQ-4 Materials with Recycled Content
- ☐ MEQ-5 Material Proximity
- ☐ MEQ-6 Agricultural Materials
- ☐ MEQ-7 Wood Certification
- ☐ MEQ-8 Maintenance and Durability
- ☐ MEQ-9 Wood Preservatives
- ☐ MEQ-10 Design Flexibility

ENERGY ENVIRONMENTAL QUALITIES

- ☐ EEQ-1 Comprehensive Energy Management Plan
- ☐ EEQ-2 Building Systems Commissioning
- ☐ EEQ-3 Optimize Energy Performance
- ☐ EEQ-4 Ozone Layer Protection/Greenhouse Gas Reduction
- ☐ EEQ-5 Renewable Energy Transition
- ☐ EEQ-6 Energy Systems Control and Maintenance
- ☐ EEQ-7 End User Metering
- ☐ EEQ-8 Additional Commissioning

CONSTRUCTION ENVIRONMENTAL QUALITIES

- ☐ CEQ-1 Construction Environment
- ☐ CEQ-2 Construction Storm Water Runoff/Pollution Prevention
- ☐ CEQ-3 Construction Waste Management
- ☐ CEQ-4 Construction IAQ Management Plan

INDOOR ENVIRONMENTAL QUALITIES

- ☐ IEQ-1 IAQ Performance
- ☐ IEQ-2 Daylight & Views
- ☐ IEQ-3 Air Quality Monitoring
- ☐ IEQ-4 Ventilation Effectiveness
- ☐ IEQ-5 Reduce Contaminants from Materials
- ☐ IEQ-6 Chemical & Particulate Control
- ☐ IEQ-7 Thermal Comfort
- ☐ IEQ-8 Pest Control
- ☐ IEQ-9 Personal Control
- ☐ IEQ-10 Acoustics
- ☐ IEQ-11 Lighting Quality

MAINTENANCE & OPERATION ENVIRONMENTAL QUALITIES

- ☐ MOEQ-1 Maintenance & Operations Program
- ☐ MOEQ-2 Recycling Program
- ☐ MOEQ-3 Training Program

Project Submission

Project Description Templates

Project Description Form

Facility:

Project Title:

Tenant Alteration Application (TAA) Number:

Project Identification (PID) Number:

Location:

Building Type:

Building Square Footage:

Number of Building Stories:

Estimated Construction Cost:

Description of Work:

Lead Discipline/Consultant Firm:

Lead Engineer/Architect:

Consultant/Applicant Name:

Site Selection SEQ-1

Intent: To avoid development of inappropriate sites.

Action: Avoid development in all sites, which meet any one of the following criteria:

- Less than 5 feet above the FEMA defined 100-year flood plain.
- Provide habitat for threatened or endangered species, public parkland.
- Within 100 feet of any water or wetlands in New Jersey or within 150 feet of any water or wetlands in New York.

For definitions of wetland and threatened or endangered species refer to US Army Corps of Engineers (USACE) and New Jersey Department of Environmental Protection (NJDEP)/New York State Department of Environmental Conservation (NYSDEC) regulations.

Site Selection Template SEQ-1

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Avoid development of inappropriate sites.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 1: Site Selection

Submittals

☐ Provide a Site Plan with documentation signed by the civil engineer or responsible party, declaring that the project site meets the credit requirement.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Support Urban Development SEQ-2

Intent: To support development of existing urban areas and fully utilize and support existing infrastructure.

Action: **LEED™ SS 2:** *Channel development to urban areas. Ensure existing minimum development density of 60,000 SF/acre within a several block radius around site. Ensure a minimum new development density of 60,000 SF/acre on site.*

Support Urban Development Template SEQ-2

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Support development in existing urban areas and fully utilize and support existing infrastructure.

Referenced Standards

1. LEED™2.1 Sustainable Sites Credit 2: Development Density

Submittals

☐ Provide documentation declaring that measures were taken to achieve the required development densities.

☐ Provide an area plan with the project location highlighted and the density for the project and the surrounding area.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Brownfield Redevelopment SEQ-3

Intent: To rehabilitate damaged sites.

Action: Give preference to development of disturbed and damaged sites over less disturbed sites. Seek to improve the ecological health of disturbed sites through site remediation strategies, including engineering and institutional controls that are protective of human health and safety and the environment.

Brownfield Redevelopment Template SEQ-3

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Rehabilitate damaged sites.

Referenced Standards

1. LEED™2.1 Sustainable Sites Credit 3: Brownfield Redevelopment
2. ASTM E1903-97 Phase II Environmental Site Assessment
3. EPA Sustainable Redevelopment of Brownfields Program, http://www.epa.gov/brownfields/

Submittals

☐ Provide a copy of the pertinent sections of the ASTM E1903-97 Phase II Environmental Site Assessment documenting the site contamination OR provide a letter from a local, state or federal regulatory agency confirming that the site is classified as a Brownfield by that agency.

☐ Provide a letter, signed by a Civil Engineer, declaring the type of damage that existed on the site and describe the remediation performed.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Expanded Public Transit SEQ-4

Intent: To encourage the development of public transportation.

Action: Locate project close to commuter rail, light rail, subway, bus or ferry to encourage use of public transportation by building users.

Expanded Public Transit Template SEQ-4

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Encourage the use of public transportation.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 4.1: Alternative Transportation – Public Transportation Access

Submittals

☐ Provide a Transportation Plan indicating proximity of commuter rail, light rail, subway, bus or ferry to building and building users.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Bicycle Access SEQ-5

Intent: To increase bicycle access for building users and occupants.

Action: Support bicycle use by providing secure bicycle racks and/or convenient bicycle storage in buildings and changing/shower facilities for building users.

Bicycle Access Template SEQ-5

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Increase bicycle access for building users and occupants.

Referenced Standards

1. LEED™2.1 Sustainable Sites Credit 4.2 Alternative Transportation – Bicycle Storage and Changing Rooms

Submittals

☐ Provide a Location Plan indicating secure bicycle racks and/or bicycle storage and changing/shower facilities in building for building users.

☐ Provide documentation and calculations indicating percentage of building users using bicycle transportation on a daily basis.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Alternative Fuel Vehicles SEQ-6

Intent: To minimize pollution and conserve energy by promoting use of low polluting, non-gasoline and hybrid fuel based vehicles.

Action: Create preferred parking areas for Alternative Fuel Vehicles (AFV's) and hybrid vehicles and consider provision of alternative fuel refueling stations when applicable. An AFV is defined as a vehicle, which utilizes electricity, hydrogen, propane, compressed natural gas, liquid natural gas, methanol or ethanol.

Alternative Fuel Vehicles Template SEQ-6

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Minimize pollution and conserve energy by promoting use of low-polluting, non-gasoline and hybrid fuel based vehicles.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 4.3 Alternative Transportation – Alternative Fuel Vehicles

Submittals

☐ Provide site drawings or parking plan highlighting preferred parking for alternative fuel vehicles and alternative-fuel refueling stations.

☐ Provide calculations indicating percentage of building occupants that utilize preferred parking and alternative-fuel refueling stations

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Reduced Parking Disturbance SEQ-7

Intent: To minimize land development impacts from single occupancy vehicle use.

Action: **LEED™ SS 4.4:** *Size parking capacity to meet but not exceed, minimum local zoning requirements AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants; OR add no new parking for rehabilitation projects AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants.*

Reduced Parking Disturbance Template SEQ-7

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Minimize land development impacts from single occupancy vehicle use.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 4.4: Alternative Transportation – Parking Capacity

Submittals

Provide documentation indicating the following:

☐ Size parking capacity meets but does not exceed, minimum local zoning requirements AND preferred parking for carpools or vans pools capable of serving 5% of the building occupants has been implemented.

OR

☐ No new parking for rehabilitation projects has been added AND preferred parking for carpools or vanpools capable of serving 5% of the building occupants has been implemented.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Reduced Site Disturbance SEQ-8

Intent: To conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity through reduced site disturbances.

Action: **LEED™ SS 5.1:** *On previously developed sites restore a minimum of 50% of the site area by replacing impervious surfaces with native or adaptive vegetation. On Greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways and main utility trenches, and 25 feet beyond constructed areas with permeable surfaces that require additional staging areas in order to limit compaction in the constructed area.*

Reduced Site Disturbance Template SEQ-8

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity through reduced site disturbance.

Referenced Standards

1. LEED™2.1 Sustainable Sites Credit 5.1 Reduced Site Disturbance – Protect or Restore Open Space

Submittals

☐ For greenfield sites: provide documentation "demonstrating and declaring" that site disturbance, including earthwork and clearing of vegetation, does not exceed:
- 40 feet beyond the building perimeter,
- 5 feet beyond primary roadway curbs, walkways and main utility trenches,
- and 25 feet beyond constructed areas with permeable surfaces that require additional staging areas in order to limit compaction in the constructed area with permeable surfaces.

☐ Provide site drawings and specifications highlighting limits of construction disturbance.

OR

☐ For previously developed sites: provide documentation "demonstrating and declaring" restoration of degraded habitat areas.
- Include highlighted site drawing with area calculations demonstrating that 50% of the site area that does not fall within the building footprint has been restored.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Reduced Development Footprint SEQ-9

Intent: To minimize the development footprint and maximize open space.

Action: Reduce the development footprint (including building, access roads and parking) to exceed the local zoning's open space requirement or for areas with no local zoning requirements, designate open space area adjacent to the building that is equal to or greater than the development footprint.

Reduced Development Footprint Template SEQ-9

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Minimize the development footprint and maximize open space.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 5.2 Reduced Site Disturbance – Development Footprint

Submittals

☐ Provide an area plan with the project location highlighted.

☐ Provide a copy of the local zoning requirements highlighting the criteria for open space, demonstrating and declaring that the open space exceeds the local zoning open space requirement.

OR

☐ For areas with no zoning requirements, designate open space area adjacent to the building that is equal to the development footprint.

☐ Provide a letter from the facility stating that the open space will be conserved for the life of the building.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Storm Water Use

SEQ-10

Intent: To manage site storm water flows through capture, treatment and on-site utilization.

Action: Implement a plan for storm water management as part of the Water Management Plan. Reduce the post-development flow of storm water and use captured water as appropriate.

LEED™ SS 6.1: *If existing imperviousness is less than or equal to 50%, implement a storm water management plan that prevents the post-development 1.5 year, 24 hour peak discharge rate from exceeding the pre-development 1.5 year, 24 hour peak discharge rate.*

LEED™ SS 6.2: *Construct treatment systems to remove 80% of the average annual post-development total suspended solids (TSS) and 40% of the average annual post-development total phosphorous (TP) per EPA Document 840-B-93-001c Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (based on the average annual loadings from all storms less than or equal to the 2 year/24 hour storm).*

Storm Water Use Template SEQ-10

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Manage site storm water flows through capture, treatment and on-site utilization.

Referenced Standards

1. PANYNJ Sustainable Design Guidelines WEQ-1: Water Management Plan
2. LEED™ 2.1 Sustainable Sites Credit 6.1: Storm water Management – Rate and Quantity
3. LEED™ 2.1 Sustainable Sites Credit 6.2: Storm water Management – Treatment
4. EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, January 1993, (EPA 840-B93-001c in LEED 2.1)
   a. Internet location: www.epa.gov/owow/nps/MMGI
   b. Hardcopy or microfiche (entire document, 836 pages): National Technical Information Service (order # PB93-234672), www.ntis.gov, (800) 553-6847
   c. U.S. Environmental Protection Agency Office of Water, www.epa.gov/OW

Submittals

☐ A storm water management plan is attached and outlines how post-development flow of storm water will be captured on the site and subsequently used to reduce potable water dependence.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Heat Island Effect Mitigation Site SEQ-11

Intent: To reduce site development contributions to "heat island" effects at paved areas. Seek to maximize areas of landscape planting (green infrastructure) coupled with high albedo surfaces at other areas to mitigate thermal loading of site surfaces.

Action: Provide green infrastructure coupled with high albedo surfaces to mitigate thermal loading of site surfaces. Utilize shade and/or light-colored/high-albedo materials (solar reflectance of at least .3 utilizing ASTM E903-96) or open reinforced grid pavement for the site's walkways, plazas and open spaces.

Heat Island Effect Mitigation Site Template SEQ-11

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce site development contributions to "heat island" effects at paved areas by maximizing areas of landscape planting (green infrastructure) coupled with high albedo surfaces at other areas to mitigate thermal loading of site surfaces.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 7.1: Heat Island Effect – Non-Roof
2. ASTM E903-96 – Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres, www.astm.org, (610) 832-9585

Submittals

☐ Provide supporting calculations indicating that green infrastructure coupled with high albedo surfaces has been used to mitigate thermal loading of site surfaces.

☐ Provide catalog cuts and materials board indicating that shade and/or light-colored/high-albedo materials (solar reflectance of at least .3 utilizing ASTM E903-96) or open reinforced grid pavement for the site's walkways, plazas and open spaces have been utilized.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Heat Island Effect Mitigation Roof SEQ-12

Intent: To reduce building contributions to "heat island" effects at building roofs. Seek to maximize areas of landscape planting (green infrastructure) coupled with high albedo surfaces at other areas to mitigate thermal loading of building roofs.

Action: **LEED™ SS 7.2:** *Use ENERGY STAR® compliant AND "high emissivity", (emissivity of at least .9 when tested in accordance with ASTM E408-71) roofing for a minimum of 75% of the roof surface; OR install a "green" (vegetated) roof for at least 50% of the roof area. Combinations of high albedo and vegetated roof can be used providing they collectively cover 75% of the roof area.*

Heat Island Effect Mitigation Roof Template SEQ-12

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce building contributions to "heat island" effects at building roofs by maximizing areas of landscape planting (green infrastructure) coupled with high albedo surfaces at other areas to mitigate thermal loading of building roofs.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Credit 7.2: Heat Island Effect – Roof
2. ASTM E408-71 (1996) e1 – Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques www.astm.org, (610) 832-9585
3. EPA Energy Star Roofing Guidelines – US Environmental Protection Agency ENERGY STAR® Program, www.energystar.gov, (888) 782-7937

Submittals

Provide supporting documentation and calculations indicating either one of the following provisions:

☐ ENERGY STAR® compliant AND "high emissivity" (emissivity of at least .9 when tested in accordance with ASTM E408-71) roofing for a minimum of 75% of the roof surface;

OR

☐ Install a "green" (vegetated) roof for at least 50% of the roof area.

☐ Combinations of high albedo and vegetated roof can be used providing they collectively cover 75% of the roof area.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Light Pollution Reduction SEQ-13

Intent: To reduce light pollution to surrounding sites and night sky.

Action: **LEED™ SS 8:** *Satisfy Illuminating Engineering Society of North America (IESNA) recommended practice per manual (RP-33-99) for exterior illumination. Design exterior lighting such that all exterior luminaires with more than 1000 initial lamp lumens are shielded and all luminaires with more than 3500 initial lamp lumens meet the Full Cutoff IESNA Classification. The maximum candela value of all interior lighting shall fall within the building (not out through windows) and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding such that no light from that luminaire crosses the property boundary.*

Light Pollution Reduction Template SEQ-13

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce light pollution to surrounding sites and night sky.

Referenced Standards

1. LEED™2.1 Sustainable Sites Credit 8 Light Pollution Reduction.
2. Illuminating Engineering Society of North America (IESNA) *Recommended Practice Manual: Lighting for Exterior Environments* (RP-33-99).

Submittals

☐ Provide supporting documentation including calculations, design drawings and catalog cuts indicating the elimination of light trespass from the building and site, improving night sky access and reducing development impact on nocturnal environments.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Water Management Plan WEQ-1

Intent: To optimize utilization of site water resources.

Action: Implement a Water Management Plan to evaluate use of storm water, wastewater and potable water resources, study potentials for onsite reclamation of wastewater and develop a coordinated management plan for full site water resources.

Use EPA recommendations per EO 13123 (Section 207) (June 1999) and Federal Energy Management Program (FEMP) Best Management Practices to develop Plan. Include at minimum information on operation & maintenance, utility information, facility information, emergency response information and planning considerations.

Water Management Plan Template WEQ-1

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Optimize utilization of site water resources.

Referenced Standards

1. EPA recommendations as per EO 13123 (Section 207) (June 1999)
2. Federal Energy Management Program (FEMP) Best Management Practices

Submittals

☐ Provide a Water Management Plan that includes comprehensive strategies for optimizing storm water, wastewater, and potable water resources. It shall also include details regarding operation and Maintenance, utility information, facility information, emergency response information, and planning considerations.

Applicant Signature

Company Date

Role in Project

Water Reuse

WEQ-2

Intent: To minimize site wastewater outflows.

Action: Implement wastewater strategies as required by Water Management Plan. Use reclaimed storm water and/or site water for toilet flushing, cooling tower makeup, vehicle maintenance or irrigation needs. Study additional opportunities to reduce the amount of potable water used in the building for conveying sewage through wastewater treatment.

Wastewater Reuse Template WEQ-2

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Minimize site wastewater outflows.

Referenced Standards

1. EO 13123 (Section 207) (June 1999)
2. Federal Energy Management Program (FEMP) Best Management Practices
3. LEED™ 2.1 Water Efficiency Credit 2: Innovative Wastewater Technologies

Submittals

☐ Provide an outline describing the following:
- Strategies used to reduce wastewater production as part of the Water Management Plan.
- Strategies used to capture and use storm water as part of the Water Management Plan.

☐ Provide calculations that demonstrate the target reduction of building potable water use that is expected to result from the strategies outlined above.

☐ Provide a calculation matrix to show the difference between "best practice" and adopted sustainable strategies.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Water Use Efficiency WEQ-3

Intent: To maximize water use efficiency within buildings and reduce potable water requirements.

Action: **LEED™ WE 3.1 and 3.2:** *Reduce consumption of potable water as required by Water Management Plan. Use 30% less potable water than a baseline building (utilize 1992 Energy Policy Act fixture requirements to determine baseline) would by utilizing efficient water fixtures, automatic controls and/or waterless urinals.*

Water Use Efficiency Template WEQ-3

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Maximize water use efficiency within buildings and reduce potable water requirements.

Referenced Standards

1. Port Authority Sustainable Guidelines WEQ-1: Water Management Plan
2. LEED™ 2.1 Water Efficiency Credit 3.2: Water Use Reduction – 30%
3. 1992 Energy Policy Act

Submittals

☐ Provide documentation declaring that the project uses 30% less than the baseline fixture performance requirements of the 1992 Energy Policy Act.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Landscape Hydrology WEQ-4

Intent: To maximize utilization of site water for landscape requirements.

Action: Use storm water for landscape irrigation requirements in conjunction with Water Management Plan. Specify plantings requiring low amounts of watering. Use indigenous or acclimatized plants suitable for the current nature of the site. Employ high-efficiency irrigation systems with slow-drip, sub-soil irrigation and computer operation with linkages to meteorological data to optimize water resources.

LEED™ WE 1.1: *Reduce potable water use for irrigation by 50% over conventional means.*

Landscape Hydrology Template WEQ-4

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Maximize utilization of site water for landscape requirements.

Referenced Standards

1. Port Authority Sustainable Design Guidelines WEQ-1: Water Management Plan
2. LEED™ 2.1 Water Efficiency Credit 1.1: Water Efficient Landscaping – 50% Reduction

Submittals

☐ Provide a site plan, schedule, and anticipated water requirements with calculations estimating the percentage of irrigation requirements to be achieved through water harvesting.

☐ Provide a narrative description outlining the high efficiency irrigation technologies that have been specified.

☐ Provide documentation and a brief narrative declaring that the project reduces potable water use for irrigation by 50% over conventional means. Include equipment used and/or the use of drought-tolerant or native plants.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Material Management Plan and Recycling MEQ-1

Intent: To optimize utilization of site material resources, reduce the waste generated by building occupants and encourage recycling.

Action: Provide a Material Management Plan, which coordinates and implements material guideline requirements within the Sustainable Design Guidelines. Describe materials to be utilized, including but not limited to; recycled content, location of manufacture/harvest, agricultural content, sustainable harvest certification, expected lifetime, maintenance requirements and recyclable/reuse potential at end of useful life.

LEED™ MR Prerequisite 1: *Provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.*

Coordinate with **MOEQ-2 Recycling Program.**

Material Management Plan and Recycling Template

MEQ-1

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Optimize utilization of material resources, reduce the waste generated by building occupants and encourage recycling.

Referenced Standards

1. LEED™ 2.1 Materials & Resources Prerequisite 1: Storage & Collection of Recyclables

Submittals

☐ Provide documentation declaring that a Material Management Plan is utilized, which coordinates and implements material guideline requirements within the Sustainable Design Guidelines. Describe materials to be utilized, including but not limited to:

- Recycled content
- Location of manufacture/harvest
- Agricultural content
- Sustainable harvest certification
- Expected lifetime
- Maintenance requirements
- Recyclable/reuse potential at end of useful life

Provide a plan showing the area(s) dedicated to recycled material collection and storage. Indicate that recycling areas are easily accessible and accommodate the building's recycling needs.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Building Reuse MEQ-2

Intent: To extend the life cycle of existing buildings and site infrastructure.

Action: Reuse existing building stock and site infrastructure to accommodate client's program and project requirements wherever possible.

Building Reuse Template MEQ-2

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Extend the lifecycle of existing buildings and site infrastructure.

Referenced Standards

1. LEED™ 2.1 Materials & Resources Credit 1.1: Building Reuse – Maintain 75% of Existing Shell
2. LEED™ 2.1 Materials & Resources Credit 1.2: Building Reuse – Maintain 100% of Existing Shell
3. LEED™ 2.1 Materials & Resources Credit 1.3: Building Reuse – Maintain 100% of Existing Shell & 50% of Non-Shell

Submittals

☐ Provide documentation listing the retained elements and declaring that the credit requirements have been met.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Resource Reuse MEQ-3

Intent: To incorporate previously used building materials and products into new construction.

Action: In coordination with the Materials Management Plan consider the use of salvaged, refurbished or reused materials and products in the building. Materials for reuse typically include reclaimed lumber and wood such as salvaged wood flooring and wood doors and cabinets, structural metal work such as beams, and miscellaneous metal such as doors, door hardware, etc. Decorative and specialized items such as salvaged wood and glass panels, banquettes, front and back bars and decorative or period lighting fixtures may be used in special public locations such as cafeterias or restaurants, and can contribute to this credit.

Resource Reuse Template MEQ-3

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Incorporate previously used building materials and products into new construction.

Referenced Standards

1. LEED™ 2.1 Materials & Resources Credit 3.1: Resource Reuse – Specify 5%
2. LEED™ 2.1 Materials & Resources Credit 3.2: Resource Reuse – Specify 10%

Submittals

☐ Provide documentation declaring that the credit requirements have been met and listing each material or product used to meet the credit. Include details demonstrating that the project incorporates reused materials and products, showing their costs and the total cost of material for the project.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Materials with Recycled Content MEQ-4

Intent: To incorporate materials with recycled content and increase market demand for building materials and products that incorporate recycled content.

Action: Specify materials with recycled-content in conjunction with the Materials Management Plan.

LEED™ MR 4.1: *Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 5% of the total value of the materials in the project.*

LEED™ MR 4.2: *Use materials with recycled content such that the sum f post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project.*

Materials with Recycled Content Template MEQ-4

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Incorporate materials with recycled content and increase market demand for building materials and products that incorporate recycled content

Referenced Standards

1. LEED™ 2.1 Materials & Resources Credit 4.2: Recycled Content – Specify 10% (post-consumer + ½ post-industrial)

Submittals

☐ Provide documentation declaring that the credit requirements have been met and listing of recycled content products used to meet the credit. Include details demonstrating that the project incorporates the required percentage of recycled content materials and products and showing their costs and percentage(s) of post-consumer and/or post-industrial content, and the total cost of all materials for the project.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Material Proximity MEQ-5

Intent: To reduce environmental degradation resulting from transportation impacts by increasing the demand for building materials and products that are extracted and/or manufactured in close proximity to the building site.

Action: Utilize local/regional materials in conjunction with the Materials Management Plan.

LEED™ MR 5.1: *Use a minimum of 20% of all building materials (based on cost) that are manufactured regionally within a 500-mile radius of the site. Manufactured in this context means the location where "final assembly" takes place.*

LEED™ MR 5.2: *Of the regionally manufactured building materials documented in LEED™ MR 5.1 uses a minimum of 50% (based on cost) that are extracted, harvested or recovered, as well as manufactured, within a 500-mile radius of the site. Manufactured in this context means the location where "final assembly" takes place.*

Material Proximity Template MEQ-5

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce environmental degradation resulting from transportation impacts by increasing the demand for building materials and products that are extracted and/or manufactured in close proximity to the building site.

Referenced Standards

1. LEED™ 2.1 Materials & Resources Credit 5.1: Regional Materials – 20% Manufactured Regionally
2. LEED™ 2.1 Materials & Resources Credit 5.2: Regional Materials – 50% Extracted Regionally

Submittals

☐ Provide documentation declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the following:

- Percentage of regional materials/products and their cost
- Percentage of regional components
- Distance from project to manufacturer
- Total cost of all materials for the project.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Agricultural Materials MEQ-6

Intent: To encourage the specification of materials which are renewable and that grow in such a way as to support biological diversity and the health of the ecosystem.

Action: In coordination with the Materials Management Plan use renewable and rapidly renewable building materials and products when practicable. Materials with annual growing cycles or which regenerate naturally within a 10-year-cycle are considered to be rapidly renewable materials. These materials include bamboo, poplar, cork, wool, cotton, jute, sisal, and soy-based products. Agricultural 'waste' materials such as wheatgrass, sunflower seed husks, and straw also qualify under this category. Release agents for concrete forms, which are made from plant oils such as corn oil are included.

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Encourage the specification of materials which are renewable and that grow in such a way as to support biological diversity and the health of the ecosystem.

Referenced Standards

1. Port Authority Sustainable Design Guidelines MEQ-1: Material Management Plan and Recycling
2. LEED™ 2.1 Materials & Resources Credit 6: Rapidly Renewable Materials

Submittals

☐ Provide documentation declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates a percentage of rapidly renewable products. Show their cost and percentage of rapidly renewable components, and the total cost of all materials for the project.

Applicant Signature

Company Date

Role in Project

Wood Certification MEQ-7

Intent: To specify wood which has been harvested according to sustainable forest management principles.

Action: Utilize wood materials certified under the Forest Stewardship Council's Principles and Criteria (FSC) in conjunction with the Materials Management Plan. These materials may include dimensional framing components, flooring, doors, paneling, millwork and furnishings, handrails and trim, etc., as well as, temporary lumber and wood construction materials provided they are not rented. The vendor's FSC chain-of-custody certificate number is required to verify certification.

Wood Certification Template MEQ-7

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Specify wood materials that have been harvested according to sustainable forest management principles.

Referenced Standards

1. LEED™ 2.1 Materials & Resources Credit 7: Certified Wood
2. Forest Stewardship Council's Principles and Criteria, www.fscus.org, (877) 372-5646

Submittals

☐ Provide documentation declaring that the credit requirements have been met:

- List the FSC-certified materials and products used.
- Include calculations demonstrating that the project incorporates a percentage of FSC-certified materials/products and their cost together with the total cost of all materials for the project.
- For each material/product used to meet these requirements, provide the vendor's of manufacturer's Forest Stewardship Council chain-of-custody certificate number.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Maintenance and Durability MEQ-8

Intent: To extend the life cycle of buildings and finishes and reduce maintenance requirements.

Action: Evaluate potential of more durable, longer lasting materials and finishes to extend building life and reduce maintenance requirements. Include consideration of building or material reuse and recycling in material assemblies and finish applications.

Maintenance and Durability Template MEQ-8

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Extend the life cycle of buildings and finishes and reduce maintenance requirements.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation declaring that the credit requirements have been met:

- Evaluation of proposed materials
- Maintenance and building life.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Wood Preservatives

MEQ-9

Intent: To reduce toxicity of specified preservatives for treated wood.

Action: Reduce requirements for preservative treated wood. Utilize Ammoniacal Copper Quaternary Compound (AQC) for wet conditions when preservative treated lumber is required and use lumber that is treated with less toxic, borate-based chemicals in dry conditions.

Wood Preservatives Template MEQ-9

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce toxicity of specified preservatives for treated wood.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation declaring that the credit requirements have been met:

- Specify low-toxicity wood preservatives.

Applicant Signature

Company Date

Role in Project

Design Flexibility MEQ-10

Intent: To facilitate future building modification, adaptive reuse, expansion and/or disassembly.

Action: Consider design strategies, which will facilitate future building modification, adaptive, reuse, expansion and/or disassembly.

- Require design program to include anticipated changes in use and occupancy for 10 years beyond initial occupancy. Provide design, which allows for building expansion to be accommodated with minimal renovation requirements.
- Extend this flexibility to the site to ensure site developments and utilities are coordinated with building expansion plans.
- Design building systems when possible to accommodate future disassembly and material reuse. To optimize building disassembly design building components which are easily separated into reusable or recyclable components, utilize materials with high reuse potential (i.e. steel vs. concrete) and reduce applied finishes.

Design Flexibility Template MEQ-10

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Facilitate future building modification, adaptive reuse, expansion and/or disassembly.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation declaring that the credit requirements have been met.

- Submit design drawings and specifications indicating compliance to credit.

Applicant Signature

Company Date

Role in Project

Comprehensive Energy Management Plan EEQ-1

Intent: To conserve and optimize building energy use.

Action: Prepare an Energy Management Plan to maximize the utilization of all site generated energy resources and to minimize off-site, non-sustainable generated energy resources. The Plan shall include an energy use budget for the project for the first year of full occupancy, broken down by major energy consumption category (i.e., heating, cooling, lighting, fan energy, pump energy, etc.). After each year of operation, the actual utilization of energy shall be recorded and compared to the original energy use budget. Significant deviations shall be evaluated and a detailed explanation for the probable cause of the deviation recorded in the updated plant. Strategies for reducing energy consumption below the first year of occupancy shall be identified and described.

The Energy Management Plan shall include a similar itemization of all site generated energy resources, including a budget for each component, and annual updates of actual performance. The Plan shall identify measures and strategies for increasing on-site utilization of energy above the first year of full occupancy performance.

The Energy Management Plan is an important tool in meeting the goals and reporting requirements of EO-111.

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Comprehensive Energy Management Template EEQ-1

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Conserve and optimize building energy use.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Prepare and provide an Energy Management Plan that includes Pre-construction and Post-construction initiatives

☐ Pre-Construction Initiatives:

- Maximum utilization of all site generated resources.
- Minimum utilization of off-site, non-sustainable generated energy resources.
- Energy use budget for the project for the first year of full occupancy, broken down by major energy consumption category (i.e., heating, cooling, lighting, fan energy, pump energy, etc.)
- Identification of measures and strategies for increasing on-site utilization of energy above the first year of full occupancy performance.

☐ Post-Construction Initiatives:

- A record and comparison of actual energy utilization after first year of operation vs. original energy use budget.
- Evaluation of significant deviations and a detailed explanation.
- Identification and description of strategic energy consumption below the first year of occupancy.
- Itemization of all site generated energy resources, including a budget for each component, and annual updates of actual performance.

Form continued on other side.

Comprehensive Energy Management Template EEQ-1

Applicant	Signature
Company	Date
Role in Project	

Building Systems Commissioning EEQ-2

Intent: To implement a Building Commissioning Plan.

Action: Implement fundamental, building systems commissioning through the use of a commissioning team consisting of Engineering Department and Facility staff not involved with the project. This team will prepare a commissioning plan and perform reviews for: design intent and design criteria, commissioning requirements in the contract documents, submittal review, verification of system performance, training, documentation, and post occupancy adherence to the established plan.

Upon completion of each stage of the project a report shall be prepared and submitted by the commissioning team documenting the results and certifying that the commissioning plan has been successfully executed.

The Commissioning Plan will be drafted by the commissioning team with input from all Engineering Department Divisions and in conjunction with Facility management, operations and maintenance staff. Reviews will be performed by the appropriate Engineering Division parties in accordance with the commissioning plan and current Quality Control Procedures as follows:

Phase	Commissioning Task	Commissioning Team					
		E/A Design Division	PMD Contract Division	Const. Division	Materials Division	Q/A Division	Maintenance/ Operations
Stage I/II/III Design	**Design Intent**	X	X				
	Design Criteria	X	X	X	X	X	X
	System Performance Benchmarks	X			X		
	Submittal Requirements	X	X	X	X		
	Project Staging	X	X	X			
	Construction Environmental Qualities Requirements	X	X	X			
Stage IV Const.	**Submittal Review**	X	X	X	X		X
	Operations and Maintenance Manuals	X	X	X			X
	Materials and Equipment Testing	X		X	X		X
	Final Inspection	X	X	X		X	X
Post Occupancy	**Performance Benchmark Confirmation**	X	X	X			X

Building Systems Commissioning Template EEQ-2

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ To implement a Building Commissioning Plan.

Referenced Standards

1. LEED™ 2.1 Energy and Atmosphere Prerequisite 1: Fundamental Building Systems Commissioning

Submittals

☐ A Commissioning Plan is attached and incorporates the requirements of the PANYNJ SDG EEQ-2.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Optimize Energy Performance EEQ-3

Intent: To optimize the performance of building energy systems.

Action: Optimize the performance of building energy systems through the utilization of a full DOE-2.1E (or equivalent) building energy model to compare and evaluate alternative strategies for energy efficiency (kwh) and peak load reduction (kW). Integrate with Energy Management Plan. This is to include the full analysis of architectural and mechanical decisions in relationship to building energy expenditures. Achieve a minimum of 30% decrease in energy cost above ASHRAE 90.1/1999 (The use of a central chilling plant may require an adjustment for this goal. An adjustment must recognize that a decrease in overall savings will require the addition of comparable LEED™ points in other areas).

Provide daylight dimming and occupancy sensors on light fixtures where appropriate (i.e. in public areas). All light fixtures to use high efficiency electronic ballasts and low mercury/low lead, long life lamps. Specify recyclable lamps to extent practicable. Utilize energy efficient equipment, which meets or exceeds the following; NEMA premium efficiency motors, variable speed systems for all fans, pumps and motors and ENERGY STAR® products. Comply with FEMP levels for commercial products not rated by ENERGY STAR®. Provide a high performance building envelope, including minimized thermal bridging, superior insulation, air infiltration barrier and insulated wavelength selective glazing (i.e.: Low-E). Use airside and waterside economizers, as appropriate.

Optimize Energy Performance Template EEQ-3

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Optimize the performance of building energy systems.

Referenced Standards

1. LEED™ 2.1 Energy and Atmosphere Credit 1: Optimize Energy Performance
2. ASHRAE/IESNA 90.1-1999: Energy Standard for Buildings Except Low-Rise Residential [American Society of Heating, Refrigerating and Air-Conditioning Engineers, www.ashrae.org, (800) 527-4723

Submittals

☐ A quantitative summary table showing the energy saving strategies incorporated in the building design is attached.

☐ Demonstrative via summary printout from energy simulation software that the design energy cost is less than the energy cost budget as defined in ASHRAE/IESNA 90.1-1999, Section 11.

☐ Optional - A certification stating that the project will achieve a minimum of a 30% decrease in energy cost above ASHRAE 90.1-1999 and is expected to qualify for ___additional points (above and beyond the points awarded for a 30% decrease).

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Ozone Layer Protection and Green House Gas Reduction

EEQ-4

Intent: To reduce emission of ozone depleting chemicals.

Action: **LEED™ EA Prerequisite 3:** *Install base building level HVAC and refrigeration equipment and fire suppression systems that do not contain CFC's, HCFC's or Halon. Avoid insulation materials that utilize chlorine-based gases.*

LEED™ EA 4: *Install base building level HVAC and refrigeration equipment and fire suppression systems that do not contain CFC's, HCFC's or Halon. Avoid insulation materials that utilize chlorine-based gases.*

Ozone Layer Protection and Green House Gas Reduction Template

EEQ-4

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce emission of ozone depleting chemicals.

Referenced Standards

1. LEED™ 2.1 Energy and Atmosphere Prerequisite 3: CFC Reduction in HVAC&R Equipment
2. LEED™ 2.1 Energy and Atmosphere Credit 4: Ozone Protection

Submittals

☐ This certifies that building HVAC, refrigeration equipment, and fire suppression systems specified do not contain levels of CFC's, HCFC's and Halon.

☐ The use of insulation materials that contain chlorine-based gases has been avoided.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Renewable Energy Transition Plan EEQ-5

Intent: To meet a portion of site energy requirements with renewable energy sources and institute a plan for full transition as renewables become more cost-effective.

Action: Utilize site generated and renewable energy for a percentage of total building energy use, based on future development. Provide renewable energy transition plan for full future conversion to 100% renewables. Supply 20% of overall annual electric energy requirements with renewables by 2010 consistent with the objectives of EO-111. Provide infrastructure to integrate technology into building systems.

Renewable Energy Transition Plan Template EEQ-5

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Meet a portion of site energy requirements with renewable energy sources and institute a plan for full transition as renewables become more cost-effective.

Referenced Standards

1. LEED™ 2.1 Energy and Atmosphere Credit 2.1: Renewable Energy – 5%
2. LEED™ 2.1 Energy and Atmosphere Credit 2.2: Renewable Energy – 10%
3. LEED™ 2.1 Energy and Atmosphere Credit 2.3: Renewable Energy – 20%
4. ASHRAE/IESNA 90.1 – 1999: Energy Standard For Buildings Except Low-Rose Residential [American Society of Heating, Refrigeration and Air-Conditioning Engineers, www.ashrae.org, (800) 527-4723

Submittals

☐ Provide renewable energy transition plan for full future conversion to 100% renewables.

☐ Provide documentation declaring that at least 20% of the building's energy is provided by on-site renewable energy by 2010. Include a narrative describing on-site renewable energy systems installed in the building and calculations demonstrating that a percentage of total energy costs respectively are supplied by the renewable energy system(s).

Applicant Signature

Company Date

Role in Project

Energy Systems Control and Maintenance EEQ-6

Intent: To provide for ongoing verification of optimal operation and energy utilization of building energy systems.

Action: Provide a computerized Building Management System (BMS) with continuous measurement capabilities for all controlled components. Provide means of monitoring water consumption for indoor domestic water and outdoor irrigation systems. Establish baseline performance benchmarks for each measured system in accordance with original building energy simulation and the Building Commissioning Plan. Develop and implement a maintenance program with ongoing measurement and verification of performance benchmarks via permanent monitoring systems configured consistent with original building energy simulation subsystems. Integrate performance benchmarks and maintenance programs into the Building Commissioning Plan.

Energy Systems Control and Maintenance Template

EEQ-6

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Provide for the ongoing verification of optimal operation and energy utilization of building energy systems.

Referenced Standards

1. LEED™ 2.1 Energy and Atmosphere Credit 5: Measurement & Verification
2. International Performance Measurement and Verification Protocol Volume 1, 2001 Version, www.ipmvp.org

Submittals

☐ Provide documentation indicating that metering equipment has been installed for each end-use and declaring the option to be followed under IMPV version 2001.

☐ Provide a copy of the M&V plan following IPMVP, 2001 version, including an executive summary.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

End User Metering & Tenant Energy Conservation Model

EEQ-7

Intent: Maximize tenant incentives to conserve energy.

Action: Include electrical distribution infrastructure required to allow end-user metering of tenant spaces. Provide tenants with handbook on energy conservation strategies and benefits.

End User Metering & Tenant Energy Conservation Model Template

EEQ-7

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Maximize tenant incentives to conserve energy.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation indicating that requirements for this credit have been met:

- List energy conservation strategies to be implemented by tenant.
- Documentation of electrical distribution for the tenant/end user space.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Additional Building Systems Commissioning EEQ-8

Intent: To implement a Building Commissioning Plan.

Action: Engage an independent commissioning authority to prepare and execute a commissioning plan. Include design phase reviews Stage 1 thru 4, contractor submittal reviews, pre-functional and functional testing, training, O&M manuals and post occupancy review. Coordinate additional commissioning tasks with requirements for Fundamental Commissioning under EEQ-2.

Additional Building Systems Commissioning Template

EEQ-8

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Implement a Building Commissioning Plan.

Referenced Standards

1. LEED™ 2.1 Energy and Atmosphere Credit 3: Additional Commissioning

Submittals

☐ Provide documentation signed by an independent commissioning agent confirming that the required additional commissioning tasks have been successfully executed or will be provided under the existing contract.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Construction Environment CEQ-1

Intent: To reduce pollution, noise and vibration from construction activities and vehicles.

Action: Implement a Construction Environment Plan, which reduces pollution, noise and vibration from construction activities and vehicles to adjoining neighborhoods.

- Develop a materials staging and construction access plan prior to start of construction. Truck staging zones are to be placed for minimum disruption and impact. Limit unnecessary idling times on diesel powered engines to 3 minutes. Consider bio-diesel fuel as an alternative to pure diesel.

- Non-road construction equipment to include diesel retrofit technology where practicable according to EPA diesel retrofit recommendations. Non-road diesel equipment of 60hp or greater to utilize ultra low sulfur diesel fuel (limit sulfur levels to 15ppm).

- Consider implementation of proposed EPA Tier 4 emission standards for non-road diesel equipment. Locate fixed diesel powered exhausts away from fresh air intakes.

- Reduce noise and vibration impacts through scheduling and coordination with adjacent construction activities. Consider noise barriers where practicable.

- Consider condition of surrounding buildings, structures, infrastructure and utilities where appropriate. Coordinate construction activities in adjacent and nearby locations to avoid or minimize impacts.

Construction Environment Template CEQ-1

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce pollution, noise and vibration from construction activities and vehicles.

Referenced Standards

There is no standard referenced for this credit

Submittals

☐ Submit and implement a Construction Environment Plan to meet the requirements for this credit:

- Materials staging and Construction Access Plan
- Truck staging zone plan
- Submit vehicle/equipment compliant to EPA recommendations
- Implementation of emissions standards

Applicant Signature

Company Date

Role in Project

Construction Storm Water Runoff and Pollution Prevention

CEQ-2

Intent: Control site erosion and reduce negative impacts on hydrological and atmospheric systems produced by construction activities.

Action: Prevent air pollution from dust and particulate matter during the course of construction. Utilize sprayed suppressing agents (non-hazardous, biodegradable) for containment of fugitive dust and adjust strategies per meteorological conditions.

LEED™ SS Prerequisite: *Provide Construction Storm Water Pollution Prevention Plan conforming to US EPA document 832/R-92-005 Chapter 3.*

Construction Storm Water Runoff and Pollution Prevention Template

CEQ-2

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Control site erosion and reduce negative impacts on hydrological and atmospheric systems produced by construction activities.

Referenced Standards

1. LEED™ 2.1 Sustainable Sites Prerequisite1: Erosion and Sedimentation Control
2. Storm Water Management for Construction Activities (USEPA Document No. EPA 832R92005), Chapter 3 [U.S. Environmental Protection Agency Office of Water, www.epa.gov/OW

Submittals

☐ Provide documentation confirming that project meets local erosion and sedimentation control standards of the referenced EPA standard.

☐ Provide a list of the measures implemented.

☐ If local standards and codes are followed, describe how they meet or exceed the reference EPA standard.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Construction Waste Management CEQ-3

Intent: To reduce the amount of construction and demolition (C&D) waste going to landfills and/or incinerators and to conserve resources through salvage, reuse and recycling.

Action: Implement a Construction Waste Management Plan to divert construction, demolition and land clearing debris from landfill disposal to redirect recyclable and/or recovered resources back to the manufacturing process and to redirect salvageable materials to appropriate sites. Draft plan in accordance with Waste Spec: Model Specifications for Construction Waste Reduction, Reuse and Recycling, Triangle J Council of Governments, July 1995.

LEED™ MR 2.1: *Recycle and/or salvage a minimum of 50% of construction, demolition and land clearing waste, calculated by weight. Divert a minimum of 50% of construction waste by weight from landfill.*

Construction Waste Management Template CEQ-3

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce amount of construction and demolition (C&D) waste going to landfills and/or incinerators and conserve resources through salvage, reuse and recycling.

Referenced Standards

1. LEED™ 2.1 Materials & Resources: Construction Waste Management – Divert 50% from Landfill

Submittals

☐ Provide documentation tabulating the total waste management, quantities diverted and the means by which diverted, and declaring that the credit requirements have been met.

Applicant Signature

Company Date

Role in Project

Construction IAQ Management Plan CEQ-4

Intent: To provide minimum standards for the air quality of building areas during construction and prior to occupancy.

Action: Prepare and implement a Construction Indoor Air Quality Management Plan in conformance with New York State Executive Order 111, Article 19.638.7(d)(2) and LEED™ EQ 3.1.

LEED™ EQ 3.1: *During construction, meet or exceed the recommended Design Approach of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, Chapter 3. Use high efficiency filtration media at all HVAC return air grilles during construction and replace all base building mechanical system filtration media with Minimum Efficiency Reporting Value of 13 (MERV 13) filters in accordance with ASHRAE 52.2 – 1999 immediately prior to occupancy.*

- On completion of construction and prior to occupancy, conduct a one-week flush out with new filtration media using 100% outside air. Test indoor air quality to achieve an air quality profile at time of occupancy, which satisfies the specific minimums for carbon dioxide, carbon monoxide, formaldehyde, volatile organic compounds, particulates and radon as per New York State Executive Order 111 reference to Article 19-638.7(d)(2).

- Where concentration levels of contaminants exceed the established parameters in any specific area, flush out area with 100% outside air for a minimum of two weeks and retest until a satisfactory result is achieved.

Construction IAQ Management Plan Template CEQ-4

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Provide minimum standards air quality for the building areas during construction and prior to occupancy.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 3.1: Construction IAQ Management Plan

Submittals

☐ Prepare and implement a Construction Indoor Air Quality Plan in conformance with New York State Executive Order 111 and LEED EQ Credit 3.1.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

IAQ Performance Review IEQ-1

Intent: Establish high indoor air quality (IAQ) for the comfort and well being of the building's occupants by minimizing the potential for poor air quality, and by establishing minimum IAQ performance and standards.

Action: Implement an Indoor Air Quality Management Plan which employs architectural and HVAC design strategies to establish minimum outdoor air quantities, chemical, biological and particulate source control and on-going air quality monitoring to achieve a positive impact on the overall indoor environment and well being of the occupants. Prepare plan in accordance with the requirements of NYSGBTC Section 638.7(d)(3). Draft the plan in accordance with the EPA Building Air Quality: A Guide for Building Owners and Facility Managers, 1991 and EPA and National Institute for Occupational Safety and Health, Building Air Quality Action Plan, 1998.

LEED™ EQ Prerequisite 1: *Meet the requirements of ASHRAE Standard 62-2001 and Approved Addenda: "Ventilation for Acceptable Indoor Air Quality," utilizing the Ventilation Rate Procedure.*

LEED™ EQ Prerequisite 2: *Prohibit smoking in the building.*

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IAQ Performance Review Template IEQ-1

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Establish high indoor air quality (IAQ) for the comfort and well being of the building's occupants by minimizing the potential for poor air quality, and by establishing minimum IAQ performance and standards.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Prerequisite 1: Minimum IAQ Performance
2. LEED™ 2.1 Indoor Environmental Quality Prerequisite 2: Environmental Tobacco Smoke (ETS) Control
3. ASHRAE Standard 62-1999: Ventilation for Acceptable Indoor Air Quality [ASHRAE, www.ashrae.org, (800) 527-4723]
4. ASHRAE 129-1997: Measuring Air-Change Effectiveness [ASHRAE, www.ashrae.org, (800) 527-4723]
5. NYSGBTC Section 638.7(d)(1, 2 & 3)
6. EPA Building Air Quality: A Guide for Building Owners and Facility Managers, 1991
7. EPA and National Institute for Occupational Safety and Health, Building Air Quality Action Plan, 1998

Submittals

☐ Implement an Indoor Air Quality Management Plan.

☐ Provide documentation declaring that the project is fully compliant with ASHRAE 62-1999 and all published Addenda and describing the procedure employed in the IAQ analysis (Ventilation Rate Procedure).

☐ Provide documentation signed by the facility, building owner or responsible party, declaring that the building will be operated under a policy prohibiting smoking OR with designated smoking rooms with outdoor exhaust allowing no recirculation of ETS-containing air to the building's non-smoking areas.

Form continues on other side.

IAQ Performance Review Template

IEQ-1

Applicant	Signature
Company	Date
Role in Project	

Daylight & Views IEQ-2

Intent: Provide building occupants with connections to the outdoors through the introduction of daylight into habitually occupied areas of the building. Provide building occupants with views via direct line of sight to the outdoors from regularly occupied spaces.

Action: **LEED™ EQ 8.1:** *Provide a 2% minimum daylighting factor in 75% of all space occupied for critical visual tasks.*

LEED™ EQ 8.2: *Achieve direct line of site to vision glazing for building occupants in 90% of all regularly occupied spaces.*

Daylight & Views Template IEQ-2

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Provide building occupants with connections to the outdoors through the introduction of daylight into habitually occupied areas of the building. Provide building occupants with views via direct line of sight to the outdoors from regularly occupied spaces.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 8.1: Daylight and Views – Daylight 75% of Spaces
2. LEED™ 2.1 Indoor Environmental Quality Credit 8.2: Daylight and Views – Views for 90% of spaces

Submittals

☐ Provide area calculations that define the daylight zone and provide calculations or daylight simulation.

☐ Provide calculations describing, demonstrating and declaring that the building occupants in 90% of regularly occupied spaces will have direct lines of site to perimeter glazing. Provide drawings highlighting the direct line of sight zones.

Applicant Signature

Company Date

Role in Project

Air Quality Monitoring IEQ-3

Intent: To retain high indoor air quality standards by establishing monitoring protocols to assist in maintaining appropriate ventilation rates for the comfort and well-being of building occupants.

Action: Indoor air quality must be tested annually and must meet minimum criteria for five years in accordance with minimum requirements of NYS Executive Order 111, NYS Green Building Tax Credit Section 638.7(d)(1). Once radon measurements are found to be satisfactory, subsequent testing for this contaminant is not required. Where concentration levels of noted contaminants exceed the established parameters in any specific area during this 5 year period, seek to locate and remediate/eliminate contaminants, then flush out area with 100% outside air for a minimum of one week and retest until a satisfactory result is achieved.

Air Quality Monitoring Template IEQ-3

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ To retain high indoor air quality standards by establishing monitoring protocols to assist in maintaining appropriate ventilation rates for the comfort and well being of building occupants.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 1: Carbon Dioxide (CO_2) Monitoring
2. NYS Executive Order 111, NYS Green Building Tax Credit Section 638.7(d)(1)

Submittals

☐ Provide mechanical documentation declaring and summarizing the installation, operational design and controls/zones for the carbon dioxide monitoring system. For mix-use buildings, calculate CO_2 levels for each separate activity level and use.

☐ Compliance with NYS Executive Order 111, Article 19.638.7(d)(1). Submit test results.

Applicant Signature

Company Date

Role in Project

Ventilation Effectiveness IEQ-4

Intent: To provide high ratios of outside air and its effective delivery to all occupied spaces in the building to support the comfort and well-being of building occupants.

Action: **LEED™ EQ 2:** *For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness (E) greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.*

Ventilation Effectiveness Template IEQ-4

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Provide high ratios of outside air and its effective delivery to all occupied spaces in the building to support the comfort and well-being of building occupants.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 2: Ventilation Effectiveness
2. ASHRAE 129-1997: Measuring Air-Change Effectiveness, ASHRAE, www.ashrae.org, (800) 527-4723

Submittals

☐ Provide mechanical documentation declaring that the credit has been met for both mechanically and naturally ventilated spaces as per ASHRAE 129-1997.

Applicant Signature

Company Date

Role in Project

Reduce Contaminants from Materials IEQ-5

Intent: To reduce the density of contaminants that are emitted by common building materials and which affect the comfort and well-being of building occupants.

Action: As part of the Materials Management Plan minimize utilization of materials with high levels of volatile organic compounds (VOC's) and other toxic characteristics which adversely affect Indoor Air Quality (IAQ).

LEED™ EQ 4.1: *Adhesives and sealants are to meet or exceed the requirements of South Coast Air Quality Management District Rule #1168.*

LEED™ EQ 4.2: *Paints and coatings are to meet or exceed the requirements of Green Seal Standard GS-11.*

LEED™ EQ 4.3: *Carpet and carpet adhesives coatings are to meet or exceed the requirements of Carpet and Rug Institute Green Label Indoor Air Quality Test Program:*

Where possible use non-urea-formaldehyde-based bonding agents in composite wood and typical millwork applications such as veneer and plastic laminate applications, etc.

Reduce Contaminants from Materials Template IEQ-5

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Reduce the density of contaminants that are emitted by common building materials and which affect the comfort and well being of building occupants.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 4.1: Low-Emitting Materials – Adhesives and Sealants
2. LEED™ 2.1 Indoor Environmental Quality Credit 4.2: Low-Emitting Materials – Paints and Coatings
3. LEED™ 2.1 Indoor Environmental Quality Credit 4.3: Low-Emitting Materials – Carpet
4. South Coast Rule #1168 by the South Coast Air Quality Management District, www.aqmd.gov/rules/html/r1168.html, (909) 396-2000
5. Regulation 8, Rule 51 of the Bay Area Air Quality Management District (January 7, 1998). www.baaqmd.gov, (415) 771-6000
6. Carpet and Rug Institute Green Label Testing Program, www.carpet-rug.com, (800) 882-8846

Submittals

☐ Provide documentation declaring that the credit has been met for each material as per its appropriate referenced standard.

☐ Use of non-urea-formaldehyde-based bonding agents.

Applicant Signature

Company Date

Role in Project

Chemical & Particulate Control IEQ-6

Intent: To minimize sources of chemical and particulate air contamination.

Action: **LEED™ EQ 5:** *Design all major entrances with permanent walk-off grilles to minimize particulate transfer. Provide MERV 13 or better air filters for removal of 85% or more of particulates at air supply systems and provide building owner with a maintenance schedule for filter replacement. Build slab-to-slab partitions and provide negative air pressure of at least .7PA with isolated exhaust systems of at least .5cfm/sf at workrooms with printing and copying equipment, janitorial closets and all chemical use areas. Locate exhausts to ensure that there is no potential for re-entrainment of exhaust air to other supply in-takes. Provide drains for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.*

Chemical & Particulate Control Template IEQ-6

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Minimize sources of chemical and particulate air contamination.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 5: Indoor Chemical & Pollutant Source Control

Submittals

☐ Provide documentation, drawings and details declaring that the credit has been met.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Thermal Comfort IEQ-7

Intent: To provide building users with a high level of thermal comfort to promote comfort, well-being and enhanced productivity.

Action: Design the building envelope in accordance with ASHRAE Standard 55-1992 (with the exception of winter humidification requirements) to manage the flow of air, moisture and thermal energy in the building. Include capability for adjustments to thermal conditions to address seasonal changes and associated modifications in typical levels of clothing. Design an integrated system (thermal shell and HVAC) that allows building operators to monitor and control air temperature in each room. To avoid condensation problems, mechanical systems must be designed to deal with part-load cooling conditions so that they are able to maintain appropriate dehumidification levels.

Thermal Comfort Template IEQ-7

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Provide building users with a high level of thermal comfort to promote comfort, well-being and enhanced productivity.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 7.1: Thermal Comfort – Compliance with ASHRAE 55-1992
2. LEED™ 2.1 Indoor Environmental Quality Credit 7.2: Thermal Comfort – Permanent Monitoring System
3. ASHRAE 55-1992: Thermal Environmental Conditions for Human Occupancy, www.ashrae.org, (800) 527-4723
4. The Collaborative for High Performance Schools (CHPS) Best Practices Manual, Appendix C-A Field Based Thermal Comfort Standard for Naturally Ventilated Buildings, Figure 2, www.chps.net/manual/index.htm

Submittals

☐ Provide pertinent documentation for both mechanically and naturally ventilated buildings declaring that the credit has been met.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Pest Control IEQ-8

Intent: To mitigate health concerns caused by any unwanted pests, their excrement and the chemicals used to control them.

Action: Develop an Integrated Pest Management Plan to include.

- Best efforts to seal building. Seal ventilation grilles and sidewalk cracks between the building and the pavement. Promptly repair any damaged and/or broken drainpipes. Attach stiff 'sweeps' to the undersides of doors. Patch any vertical cracks at ground floor openings, doors and windows frames.

- When necessary, use boric acid or other nontoxic alternatives in lieu of more toxic chemicals to control and eliminate rodent populations from building.

- Maintenance protocols to maintain clean recycling and garbage storage rooms and removal of waste materials from floor level.

Pest Control Template IEQ-8

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Mitigate health concerns caused by any unwanted pests, their excrement and the chemicals used to control them.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Develop an Integrated Pest Management Plan.

☐ Provide drawings and documentation declaring that the credit has been met.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Personal Control

IEQ-9

Intent: To provide occupants of regularly occupied building areas with a high level of thermal, ventilation and lighting system control to promote productivity, comfort and well-being.

Action: Provide building occupants with individual controls over airflow, temperature and lighting systems where practical. Provide operable windows where feasible. This guideline is required for regularly occupied office, administrative, maintenance and operations areas. It is not intended to address transient or temporarily occupied areas, for example airport, train and bus station terminal areas.

Personal Control Template IEQ-9

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Provide occupants of regularly occupied building areas with a high level of thermal, ventilation and lighting systems control to promote productivity, comfort and well-being.

Referenced Standards

1. LEED™ 2.1 Indoor Environmental Quality Credit 6.1: Controllability of Systems – Perimeter
2. LEED™ 2.1 Indoor Environmental Quality Credit 6.2: Controllability of Systems – Non-Perimeter

Submittals

☐ Provide drawings and documentation declaring that the credit has been met.
- Provide documentation demonstrating building occupants with individual controls over airflow and lighting.
- Operable windows if feasible.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Acoustics IEQ-10

Intent: Design ambient noise levels for building users to appropriate levels to support human well-being and productivity.

Action: Minimize vibration and noise levels in indoor spaces and at exterior environments to achieve appropriate physical comfort and sound isolation for tasks and speech intelligibility.

- Program locations of mechanical equipment and other sources of noise away from areas of building and exterior spaces designed for use by building tenants and the public as practical.
- Design separations to minimize transfer of noise. Design interior separations in regularly occupied office areas to reflect a Sound Transmission Class (STC) level of 50 or better.
- Consider strategies to reduce the transmission of exterior ambient noise.

Acoustics Template IEQ-10

Project Title _____

TAA/PID Number _____

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Design ambient noise levels for building users to appropriate levels to support human well-being and productivity.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide drawings and documentation declaring that the credit has been met.

- Separation of mechanical equipment rooms from areas used by occupants and the public.
- Design separations to minimize transfer of noise. Indicate STC levels of 50 or better.
- Reduce transmission of exterior noise.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Lighting Quality IEQ-11

Intent: Optimize building lighting design to maximize comfort and productivity of building occupants and the efficiency of electric lighting.

Action: Design lighting systems to accommodate the following strategies.

- Coordinate ambient electrical lighting system with daylighting strategies to provide flexible illumination and maximize lighting energy contribution from daylight. Supplement ambient lighting system with multi-level task lighting to maintain a minimum of 35-foot candles (in typical office area) at desk level throughout hours of occupancy.

- Meet the recommendations of the Illuminating Engineering Society of North America's (IESNA) 9th Edition Handbook, Chapter 10 Quality of the Visual Environment, and the Lighting Design Guide.

- Provide high frequency electronic ballasts and low mercury/low lead lamps as defined by the US Environmental Protection Agency's Toxicity Characteristic Leaching Procedure (TCLP) testing procedure.

- Specify recyclable lamps.

Lighting Quality Template IEQ-11

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Optimize building lighting design to maximize comfort and productivity of building occupants and the efficiency of electric lighting.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide drawings and documentation declaring that the credit has been met:

- Coordination of day lighting with electrical lighting systems.
- Demonstrate that the project meets the recommendations of the Illuminating Engineering Society of North America's (IESNA) 9th Edition Handbook, Chapter 10 Quality of the Visual Environment, and the Lighting Design Guide.
- Specify recyclable lamps.

Applicant Signature

Company Date

Role in Project

Maintenance & Operations Programs MOEQ-1

Intent: To integrate facility maintenance and operational programs with sustainable design goals and environmental criteria.

Action: Develop and implement Maintenance and Operations programs to support the environmental/sustainable operation and maintenance of buildings consistent with the Sustainable Design Guidelines.

- 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 5th year of building operation. Reviews are to include Operations and Maintenance personnel and mechanism to feed evaluations and "lessons learned" back into ongoing and new project design efforts.
- Develop a Maintenance Manual for each individual building that clearly delineates required maintenance schedules and procedures, such at date and type for filter replacement, recalibration of building monitors, vacuuming of entryway traps, IPM procedures, etc.

Maintenance & Operations Programs Template MOEQ-1

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Integrate facility maintenance and operational programs with sustainable design goals and environmental criteria.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation declaring that the credit has been met.

☐ Develop a Maintenance & Operation Program for each individual building or facility.

Applicant _____ Signature _____

Company _____ Date _____

Role in Project _____

Recycling Program MOEQ-2

Intent: To integrate recycling program goals into maintenance and operations programs.

Action: Provide programs for collection, separation, storage and highest best use of recyclables.

- Evaluate recycling programs based on vendor reporting of quantities of materials/products actually recycled, proximity of recycling/remanufacturing centers and highest best end use potentials for recycled materials. Highest best end uses are typically determined by the ability of the new product process to maximize material reuse in both the new product and future recycling of this new product.

- Verify space as designated in MEQ-1 is adequate for recycling program requirements.

Recycling Program Template MOEQ-2

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Integrate recycling program goals into maintenance and operations programs.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation declaring that the credit has been met.

Applicant Signature

Company Date

Role in Project

Maintenance & Operations Training MOEQ-3

Intent: To develop and implement maintenance and operations training programs, which include environmental goals.

Action: Develop and implement Maintenance and Operations training programs for building personnel to support the environmental/sustainable operation and maintenance of buildings consistent with the Sustainable Design Guidelines. Training programs are to include.

- Protocols for monitoring of building management systems and controls and identification of variances from projected performance.
- Procedures for reviewing and incorporating Building Commissioning recommendations and equipment/building operations and maintenance manual requirements.
- Identification of environmentally preferable cleaning and maintenance products and related procedures.

Maintenance & Operations Training Template MOEQ-3

Project Title

TAA/PID Number

Phase

Stage I	Stage II	Stage III	Stage IV
☐	☐	☐	☐

Intent

☐ Develop and implement maintenance and operations training programs that include environmental goals.

Referenced Standards

There is no standard referenced for this credit.

Submittals

☐ Provide documentation declaring that the credit has been met.

Applicant Signature

Company Date

Role in Project

Sustainable Design Guidelines

Appendix

Appendix A
Appendix B
Appendix C
Appendix D

Appendix A

THE PORT AUTHORITY OF NY & NJ

AP 45-2

Office of the Executive Director **Effective: July 13, 2006**

SUSTAINABLE DESIGN

I. Introduction

Sustainable design seeks to reduce the environmental impact to improve the maintenance and operation of new and renovated buildings and facilities. The Port Authority's sustainable design guidelines, developed and updated periodically by the Engineering Department, emphasize and strive for a balance among the following goals: (1) energy conservation and efficiency: (2) conservation of water and other natural resources; (3) waste reduction; and (4) healthy indoor environments. The guidelines also seek to benefit the region's economy by encouraging the use of locally manufactured materials and by supporting emerging regional markets in renewable energy and clean technologies.

II. Policy

A. The Port Authority's policy is to reduce adverse environmental impacts of the design, construction, operation and maintenance and occupancy or leasing of new or substantially renovated buildings and facilities, reconstruction projects, and programs. Departments adhere to this policy as outlined in paragraphs B, C, and D below. Because the policy may necessitate design decisions or the use of materials that have a higher first cost than would conventional designs or materials, departments implement sustainable design only when life cycle cost analyses, prepared by or reviewed by the Engineering Department, show that such costs are neutral, or that sustainable design will yield a positive return on investment (referred to as the "life cycle cost criterion").

B. New Buildings and Facilities

1. The sustainable design guidelines apply to a new building or facility that is 20,000 gross square feet or more, or any new multi-building construction project in which the buildings are of the same construction type and have a combined area of 20,000 gross square feet or more, provided the sustainable design measures meet the life cycle cost criterion and do not compromise safety or security. A new building or facility that is 20,000 gross square feet or more, or any new multi-building construction project in which the buildings are of the same construction type and have a combined area of 20,000 gross square feet or more, is to surpass building code standards for energy efficiency by at least 20 percent.

2. A new building or facility or multi-building project of less than 20,000 gross square feet incorporates significant attributes of applicable sustainable design principles (site planning, water, energy, materials and resources, and indoor environmental quality) to comply with this policy. Incorporation of these attributes is based on the life cycle cost criterion.

C. Substantial Renovations and Reconstruction Projects

1. A substantial renovation in a building or facility of 20,000 gross square feet or more is to surpass building code standards for energy efficiency by at least 10 percent, provided that this measure meets the life cycle cost criterion. Additionally, best efforts are used to adhere to the sustainable design guidelines.

2. A reconstruction project in a building or facility of 20,000 gross square feet or more is to surpass building code standards for energy efficiency by at least 10 percent, provided that this measure meets the life cycle cost criterion. Additionally, best efforts are used to adhere to the sustainable design guidelines.

3. A substantial renovation or reconstruction project in a building or facility of less than 20,000 gross square feet is to incorporate significant attributes of applicable sustainable design (with respect to water, energy, materials, resources and indoor environmental quality) to comply with this policy. Incorporation of these attributes is based on the life cycle cost criterion.

D. Programs

To the extent that it is deemed reasonable by the Chief of Real Estate and Development, with the concurrence of the Chief Financial Officer, applicable sustainable design principles (site planning, water, energy, materials and resources, and indoor environmental quality) are to be applied to all programs in which the Port Authority participates.

III. Definitions

A. "Building" or "facility" is defined as a structure of 5,000 gross square feet or more.

B. Substantial renovation" is defined as the replacement of more than 50 percent of any building subsystem, measured in units appropriate to the subsystem, within any consecutive 12-month period.

C. "Subsystem" is defined as a building assembly or building set of units made up of various components that serve a specific function including, but not limited to, exterior walls, windows, doors, roofs, ceilings, floors, lighting, piping, duct work, insulation, heating, ventilation and air cooling (HVAC) system

equipment or components, electrical appliances and plumbing appliances.

D. "Reconstruction project," commonly referred to as a "gut rehabilitation," is defined as a renovation: (1) in which four or more primary building systems of a building or facility undergo at least a 50% replacement within a 12-month period: and (2) during the performance of which the affected building area is unoccupiable for 30 days or more due to the nature of the construction.

E. "Primary building systems" is defined as: (1) HVAC; (2) lighting; (3) exterior walls and windows; (4) roofs and ceilings; (5) plumbing; and (6) other electrical.

F. "Program" is defined as an action or series of related actions initiated by the Real Estate and Development Department that has been authorized by the Board of Commissioners.

IV. Space Leased to the Port Authority

To the maximum extent practical, the Real Estate Department implements the Port Authority's sustainable design policy (with regard to water, energy, materials and resources, and indoor environmental quality) in spaces leased to the Port Authority. The Real Estate Department seeks to execute improvements whose expected cost savings provide a payback prior to the end of the lease term.

V. Port Authority Tenants

Leases provide or will provide that tenant construction, substantial renovation and reconstruction are to comply with this Administrative Policy statement. This requirement is incorporated into leases at inception, renewal or modification as appropriate.

VI. Roles & Responsibilites

A. Port Authority Contracts

The Project Management Department identifies building and facility projects in the Port Authority Capital Plan that meet the criteria for implementation of the sustainable design guidelines as set forth in paragraphs II. A. and II. B. For such projects, a project team comprising representatives from the Project Management Department, the Engineering Department, and the respective line department identifies and evaluates ways to comply with this policy. This evaluation takes place in the planning stages of design (pre-Stage I, Stage I, and Stage II). The Project Management Department reports the status of these projects to the Office of Environmental Policy, Programs & Compliance on a quarterly basis.

Appendix A

The Project Management Department develops and maintains an agency-wide list of proposed projects in the planning stages (pre-Stage I, Stage I, and Stage II) with opportunities for sustainable design applications. The Project Management Department also maintains a list of all projects that move into final design and construction (Stage III and IV) that incorporate sustainable design applications. The Project Management Department updates both lists at least twice a year and transmits them to the Office of Environmental Policy, Programs & Compliance.

B. Tenant Alteration Applications

The Tenant Alteration Application process requires tenants to adhere to this Administrative Policy statement. All tenant projects that require approval of Tenant Alteration Applications are reported to the Office of Environmental Policy, Programs & Compliance on a bi-annual basis.

C. Port Authority Programs

The Office of the Chief of Real Estate and Development periodically reports on its efforts to incorporate sustainable design principles in Port Authority programs to the Office of Environmental Policy, Programs & Compliance.

Appendix B
Reference Standards

General

New York State. Executive Order 111 "Green and Clean" State Buildings and Vehicles Guidelines. Albany: New York State Energy Research and Development Authority (NYSERDA), 2001.

New York State. Executive Order 111. Albany: NYS, 2001.

New York State. Green Building Tax Credit, Article 19, Sections 638.7 and 638.8. Albany: NYS, 2000.

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United States Green Building Council. USGBC LEED Reference Guide for New Construction and Major Renovations: Version 2.1. 2nd Edition. Washington: USGBC, 2003.

Site Environmental Qualities

ASTM International. E408-71(1996)e1 Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques. West Conshohocken, Pennsylvania: ASTM International, 1996.

ASTM International. E903-96 Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres. West Conshohocken, Pennsylvania: ASTM International.

ASTM International. E1903-97 Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process. West Conshohocken, Pennsylvania: ASTM International, 2002.

Federal Emergency Management Agency. 100-Year Flood Definition. July 2004 <http://www.fema.gov/fhm/fq_fld03.shtm>

Illuminating Engineering Society of North America (IESNA). Recommended Practice Manual: Lighting for Exterior Environments (IESNA RP-33-99). New York: IESNA.

New Jersey Department of Environmental Protection. Land Use Regulations. June 2004. July 2004 <http://www.nj.gov/dep/landuse/njsa_njac.html>

New Jersey Department of Environmental Protection. List of Threatened and Endangered Species. June 2004. July 2004 <http://www.nj.gov/dep/fgw/tandespp.htm>

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New York State Department of Environmental Conservation. Freshwater and Tidal Wetlands Regulations. July, 2004.
<http://www.dec.state.ny.us/website/dfwmr/habitat/fwwprog.htm>
<http://www.dec.state.ny.us/website/dfwmr/marine/mhabitat.htm>

New York State Department of Environmental Conservation. List of Endangered, Threatened and Special Concern Fish and Wildlife Species. Oct. 2003.
http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/etsclist.htmlUnited States

Environmental Protection Agency. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA Document 840-B-92-002. Washington: EPA, 1993).

United States Government. Code of Federal Regulations 40 CFR, Parts 230-233 and Part 22. Washington: GPO, 2003.

EPA Sustainable Redevelopment of Brownfields Program.
<http://www.epa.gov/brownfields>.

EPA Energy Star Roofing Guidelines, <www.enegystar.gov>.

Water Environmental Qualities

The Energy Policy Act. Pub. L. 102-486. 24 Oct. 1992.

Material Environmental Qualities

Forest Stewardship Council. Principles and Criteria. 1996. July 2004.
<http://www.fscus.org/standards_criteria/>

U.S. Environmental Protection Agency. Comprehensive Guideline for Procurement of Products Containing Recovered Materials; Recovered Materials Advisory Notice III; Final Rule CFR Part 247. Washington: EPA, 2000.

U.S. Federal Trade Commission. Guide for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e). Washington: USFTC, 1992.

Energy Environmental Qualities

ASHRAE/IESNA. ASHRAE/IESNA 90.1-1999: Energy Standard for Buildings Except Low-Rise Residential. Atlanta: ASHRAE/IESNA, 1999.

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ASHRAE. ASHRAE Guideline 1-1996: The HVAC Commissioning Process. Atlanta: ASHRAE, 1996

ASHRAE. Guideline 4-1993: Preparation of Operations and maintenance documentation for Building Systems. Atlanta: ASHRAE, 1993.

Institute of Electrical and Electronics Engineers, Inc. Recommended Practice for Energy Management in Industrial and Commercial Facilities. IEEE, 1995.

New York State Department of State. Energy Conservation Construction Code of New York State. Albany: NYS, 2002.

Portland Energy Conservation Inc. Model Building Commissioning Plan and Guide Specifications. Portland, PECI, 1998.

U.S. Department of Energy. Federal Energy Management Program Building Commissioning Guide. Mar. 1994. July 2004 <http://sustainable.state.fl.us/fdi/edesign/news/9707/cx-guide.htm>

Center for Resource Solutions. Green-e Products Certification Requirements EPA, Energy Star Program. 2003. July 2004 <http://www.green-e.org/ipp/marketer_requirements.html>

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Construction Environmental Qualities

Sheet Metal and Air Conditioning National Contractors Association. IAQ Guideline for Occupied Buildings under Construction. Chapter 3. Chantilly, VA: SMACNA, 2000.

Triangle J Council of Governments. Waste Spec: Model Specifications for Construction Waste Reduction, Reuse and Recycling. Research Triangle Park, NC: TJCG, 1995.

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ASHRAE. ASHRAE 129-1997: Measuring Air Change Effectiveness. Atlanta: ASHRAE, 1997.

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ASHRAE. ANSI/ASHRAE 52.2-1999: Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size. Atlanta: ASHRAE, 1999.

ASHRAE. ASHRAE Standard 55-1992 (and Approved Addenda of 1995): Thermal Environmental Conditions for Human Occupancy. Atlanta: ASHRAE, 1992.

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Sheet Metal and Air Conditioning National Contractors Association. IAQ Guideline for Occupied Buildings under Construction. Chapter 3. Chantilly, VA: SMACNA, 1995.

South Coast Air Quality Management District. Rule #1168. Diamond Bar, CA: SCAQMD, 2003.

United States Environmental Protection Agency. Building Air Quality: A Guide for Building Owners and Facility Managers. Washington: EPA, 1991.

United States Environmental Protection Agency and National Institute for Occupational Safety and Health. Building Air Quality Action Plan. Washington: EPA, 1998.

Appendix C
LEED™ Rating System Cross Reference

	PANYNJ Guideline	LEED™ Guideline Reference	LEED Pts. (Required)
SEQ-1	Site Selection		
SEQ-2	Support Urban Development	SS 2 Development Density	1
SEQ-3	Brownfield Redevelopment		
SEQ-4	Expanded Public Transit		
SEQ-5	Bicycle Access		
SEQ-6	Alternative Fuel Vehicles		
SEQ-7	Reduced Parking Disturbance	SS 4.4 Alternative Transportation Parking Capacity	1
SEQ-8	Reduced Site Disturbance	SS 5.1 Protect or Restore Open Space	1
SEQ-9	Reduced Development Footprint		
SEQ-10	Storm Water Use	SS 6.1/6.2 Stormwater Management	2
SEQ-11	Heat Island Effect Mitigation Site		
SEQ-12	Heat Island Effect Mitigation Roof	SS 7.2 Heat Island Effect Roof	1
SEQ-13	Light Pollution Reduction	SS 8 Light Pollution Reduction	1
WEQ-1	Water Management Plan		
WEQ-2	Wastewater Reuse		
WEQ-3	Water Use Efficiency	WE 3.1/3.2 Water Use Reduction	2
WEQ-4	Landscape Hydrology	WE 1.1 Water Efficient Landscaping	1
MEQ-1	Material Management Plan and Recycling	MR Prerequisite 1 Storage & Collection of Recyclables	
MEQ-2	Building Re-Use		
MEQ-3	Resource Reuse		
MEQ-4	Materials with Recycled Content	MR 4.1/4.2 Recycled Content	2
MEQ-5	Material Proximity	MR 5.1/5.2 Regional Materials	2
MEQ-6	Agricultural Materials		
MEQ-7	Wood Certification		
MEQ-8	Maintenance and Durability		
MEQ-9	Wood Preservatives		
MEQ-10	Design Flexibility		
EEQ-1	Comprehensive Energy Management Plan		
EEQ-2	Building Systems Commissioning	EA Prerequisite 1 Fundamental Building Systems	
EEQ-3	Optimize Energy Performance	EA Prerequisite 2 Minimum Energy Performance & EA 1	4
EEQ-4	Ozone Layer Protection/Greenhouse Gas	EA Prerequisite 3 CFC Reduction in HVAC & R & EA 4	1
EEQ-5	Renewable Energy Transition		
EEQ-6	Energy Systems Control and Maintenance		
EEQ-7	End User Metering		
EEQ-8	Additional Commissioning		
CEQ-1	Construction Environment		
CEQ-2	Construction Storm Water Runoff/Pollution	SS Prerequisite 1 Erosion & Sedimentation Control	
CEQ-3	Construction Waste Management	MR 2.1 Construction Waste Management	1
CEQ-4	Construction IAQ Management Plan	EQ 3.1 Construction IAQ Management Plan	1
IEQ-1	IAQ Performance	EQ Prerequisite 1 Minimum IAQ Performance EQ Prerequisite 2 Environmental Tobacco Smoke Control	
IEQ-2	Daylight & Views	EQ 8.1/8.2 Daylight and Views	2
IEQ-3	Air Quality Monitoring		
IEQ-4	Ventilation Effectiveness	EQ 2 Ventilation Effectiveness	1
IEQ-5	Reduce Contaminants from Materials	EQ 4.1/4.2/4.3 Low Emitting Materials	3
IEQ-6	Chemical & Particulate Control	EQ 5 Chemical & Particulate Control	1
IEQ-7	Thermal Comfort		
IEQ-8	Pest Control		
IEQ-9	Personal Control		
IEQ-10	Acoustics		
IEQ-11	Lighting Quality		
MOEQ-1	Maintenance & Operations Program		
MOEQ-2	Recycling Program		
MOEQ-3	Training Program		
		LEED™ Professional	1
		LEED™ Points	**29**

Appendix D
Definitions

albedo – solar reflectance, ratio of reflected solar energy to incoming solar energy over wavelengths of 0.3-2.5 micrometers.

brownfield – former industrial land which has been polluted and abandoned.

development footprint – area of project site impacted by development, this includes roadways, parking areas, support structures, hardscape and walkways.

emmissivity (thermal) – ability of a material to shed infrared radiation (generally in the range of 3-40 micrometers) expressed as a number between 0 and 1 with 1 equivalent to 100% reradiation.

greenfield – undeveloped land.

heat Island – phenomenon of urban landscapes to create microclimates which are significantly warmer than regional patterns. The microclimate results from a combination of factors including waste heat from buildings and vehicles, reduced evaporative cooling and the trapping of solar insolation.

post-consumer recycled content – material component which was once a consumer waste product and is now incorporated into a new material.

post-industrial recycled content – material component which was once an industrial waste product and is now incorporated into a new material.

potable water – water that is suitable for drinking.

renewable energy – energy which has been captured from the sun, wind or biomass.