



Welcome!

Green by Design

Laying the Groundwork for Sustainable Development

anvec
association of new jersey
environmental commissions

Introduction & Tour

Pete Maszczak,
Geraldine R. Dodge Foundation



Panel

- Athena Sarafides, LEED AP, NJDEP
- Ray Nichols, Hopewell Township Environmental Commission
- Paul Drake, Somerset County Energy Council

Green by Design

Laying the Groundwork for Sustainable Development

ANJEC Series
March 30, 2009

*Never doubt that a small group of thoughtful, committed people
can change the world. Indeed it is the only thing that ever has. ~
Margaret Mead*



NJDEP Office of Planning and Sustainable Communities
www.nj.gov/dep/opsc

What is Green Design? What is Sustainable Development?

“Sustainable development is meeting the needs of the present generation without compromising the ability of future generations to meet their needs.”

- Sustainability first defined and addressed as a global goal.



World Commission on the Environment, 1987

Green Design and Green Buildings

Green Building Rating Systems

- USGBC LEED™ (Leadership in Energy and Environmental Design by the US Green Building Council)
- Green Building Guidelines by the National Association of Home Builders (NAHB)
- Green Globes™ (Green Building Initiative)
- NJ Green Homes Office – NJ Housing Mortgage and Finance Agency
- Energy Star – Energy only

Green Building Rating Systems

What do they have in common?

All Use Similar Green Design Categories

- Sustainable Sites
- Water
- Energy
- Materials
- Indoor Air Quality
- Education
- Innovation



Summerfield School
Neptune
LEED Gold

How can a Municipality
Begin to Foster
Green Buildings and Design?

SUSTAINABLE JERSEY™



SUSTAINABLE JERSEY™ is a certification program for municipalities in New Jersey that want to go green, control costs and save money, and take steps to sustain their quality of life over the long term.

Was created to develop rigorous and broadly accepted standards and actions for New Jersey communities that want to become sustainable.

www.sustainablejersey.com

SUSTAINABLE JERSEY™



Sustainable Jersey™ encompasses issues such as global warming, pollution, biodiversity, land use, air and water quality, equity, buying local, local living economies, and sustainable agriculture.

Green Design Actions

- Upgrade & Retrofit Municipal Buildings
- Commercial & Residential Buildings

www.sustainablejersey.com

Lead by Example

Upgrade & Retrofit Municipal Buildings

- ✓ Adopt a Policy / Resolution in Support of Municipal Green Buildings
- ✓ Green Building Training for Appropriate Staff and Volunteers
- ✓ Investigate and Implement the Following Green Design Actions
 - Energy Conservation
 - Renewable Energy
 - Improve Water Conservation
 - Reduce Light Pollution
 - Increase Construction Waste Recycling



Environmental Center - Highland Park



Rain Garden – Highland Park

Green Design - Lead by Example Upgrade & Retrofit Municipal Buildings

Adopt a Policy / Resolution in Support of
Municipal Green Buildings

NJ Leaders Include (Policy or Actions):

- Cranford - Green Building Ordinance
- Princeton - Master Plan Language
- Jersey City – Green Building Standards
- Maplewood – LEED Silver Police Station
- Highland Park – Environmental Center



Green Design Commercial & Residential Buildings

- ✓ Adopt a Green Building Policy
- ✓ Create a Green Building Scorecard
- ✓ Implement Green Design Standards through Site Plan review
- ✓ Distribute Green Building Educational Information



Green Design Commercial & Residential Buildings

- ✓ Adopt a Green Building Policy

Municipalities are encouraged to adopt a resolution that sets forth their intention to encourage or require green design for commercial and residential buildings.

NJ Example:

Hopewell Township's Land Use Ordinances

- Construction Debris
- Parking
- Roof Coloring
- Site Amenities



Green Design Commercial & Residential Buildings

- ✓ Create a Green Building Scorecard

Municipalities are encouraged to incorporate a green building scorecard as a voluntary element in their Site Plan approval process.

A green building scorecard lists various green building design strategies that can be implemented as part of a residential or commercial development.



Examples of Green Building Scorecards

- USGBC LEED™ (Leadership in Energy and Environmental Design by the US Green Building Council)
- Green Building Guidelines by the National Association of Home Builders (NAHB)
- Green Globes™ (Green Building Initiative)
- NJ Green Homes Office – NJ Housing Mortgage and Finance Agency





LEED

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

30 Points Achieved **Possible Points: 69**

Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

5 Sustainable Sites **Possible Points: 14**

Y	Points	Description	Points
<input checked="" type="checkbox"/>	1	Y Prereq 1 Erosion & Sedimentation Control	
<input checked="" type="checkbox"/>	1	Credit 1 Site Selection	1
<input checked="" type="checkbox"/>	1	Credit 2 Urban Redevelopment	1
<input checked="" type="checkbox"/>	1	Credit 3 Brownfield Redevelopment	1
<input checked="" type="checkbox"/>	1	Credit 4.1 Alternative Transportation, Public Transportation Access	1
<input checked="" type="checkbox"/>	1	Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms	1
<input checked="" type="checkbox"/>	1	Credit 4.3 Alternative Transportation, Alternative Fuel Refueling Stations	1
<input checked="" type="checkbox"/>	1	Credit 4.4 Alternative Transportation, Parking Capacity	1
<input checked="" type="checkbox"/>	1	Credit 5.1 Reduced Site Disturbance, Protect or Restore Open Space	1
<input checked="" type="checkbox"/>	1	Credit 5.2 Reduced Site Disturbance, Development Footprint	1
<input checked="" type="checkbox"/>	1	Credit 6.1 Stormwater Management, Rate and Quantity	1
<input checked="" type="checkbox"/>	1	Credit 6.2 Stormwater Management, Treatment	1
<input checked="" type="checkbox"/>	1	Credit 7.1 Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	1
<input checked="" type="checkbox"/>	1	Credit 7.2 Landscape & Exterior Design to Reduce Heat Islands, Roof	1
<input checked="" type="checkbox"/>	1	Credit 8 Light Pollution Reduction	1

2 Water Efficiency **Possible Points: 5**

Y	Points	Description	Points
<input checked="" type="checkbox"/>	1	Credit 1.1 Water Efficient Landscaping, Reduce by 50%	1
<input checked="" type="checkbox"/>	1	Credit 1.2 Water Efficient Landscaping, No Potable Use or No Irrigation	1
<input checked="" type="checkbox"/>	1	Credit 2 Innovative Wastewater Technologies	1
<input checked="" type="checkbox"/>	1	Credit 3.1 Water Use Reduction, 20% Reduction	1
<input checked="" type="checkbox"/>	1	Credit 3.2 Water Use Reduction, 30% Reduction	1

4 Energy & Atmosphere **Possible Points: 17**

Y	Points	Description	Points
<input checked="" type="checkbox"/>	1	Y Prereq 1 Fundamental Building Systems Commissioning	
<input checked="" type="checkbox"/>	1	Y Prereq 2 Minimum Energy Performance	
<input checked="" type="checkbox"/>	1	Y Prereq 3 CFC Reduction in HVAC&R Equipment	
<input checked="" type="checkbox"/>	2	Credit 1.1 Optimize Energy Performance, 20% New / 10% Existing	2
<input checked="" type="checkbox"/>	2	Credit 1.2 Optimize Energy Performance, 30% New / 20% Existing	2
<input checked="" type="checkbox"/>	2	Credit 1.3 Optimize Energy Performance, 40% New / 30% Existing	2
<input checked="" type="checkbox"/>	2	Credit 1.4 Optimize Energy Performance, 50% New / 40% Existing	2
<input checked="" type="checkbox"/>	2	Credit 1.5 Optimize Energy Performance, 60% New / 50% Existing	2
<input checked="" type="checkbox"/>	1	Credit 2.1 Renewable Energy, 5%	1
<input checked="" type="checkbox"/>	1	Credit 2.2 Renewable Energy, 10%	1
<input checked="" type="checkbox"/>	1	Credit 2.3 Renewable Energy, 20%	1
<input checked="" type="checkbox"/>	1	Credit 3 Additional Commissioning	1
<input checked="" type="checkbox"/>	1	Credit 4 Ozone Depletion	1
<input checked="" type="checkbox"/>	1	Credit 5 Measurement & Verification	1
<input checked="" type="checkbox"/>	1	Credit 6 Green Power	1

7 Materials & Resources **Possible Points: 13**

Y	Points	Description	Points
<input checked="" type="checkbox"/>	1	Y Prereq 1 Storage & Collection of Recyclables	
<input checked="" type="checkbox"/>	1	Credit 1.1 Building Reuse, Maintain 75% of Existing Shell	1
<input checked="" type="checkbox"/>	1	Credit 1.2 Building Reuse, Maintain 100% of Existing Shell	1
<input checked="" type="checkbox"/>	1	Credit 1.3 Building Reuse, Maintain 100% Shell & 50% Non-Shell	1
<input checked="" type="checkbox"/>	1	Credit 2.1 Construction Waste Management, Divert 50%	1
<input checked="" type="checkbox"/>	1	Credit 2.2 Construction Waste Management, Divert 75%	1
<input checked="" type="checkbox"/>	1	Credit 3.1 Resource Reuse, Specify 5%	1
<input checked="" type="checkbox"/>	1	Credit 3.2 Resource Reuse, Specify 10%	1
<input checked="" type="checkbox"/>	1	Credit 4.1 Recycled Content	1
<input checked="" type="checkbox"/>	1	Credit 4.2 Recycled Content	1
<input checked="" type="checkbox"/>	1	Credit 5.1 Local/Regional Materials, 20% Manufactured Locally	1
<input checked="" type="checkbox"/>	1	Credit 5.2 Local/Regional Materials, of 20% Above, 50% Harvested Locally	1
<input checked="" type="checkbox"/>	1	Credit 6 Rapidly Renewable Materials	1
<input checked="" type="checkbox"/>	1	Credit 7 Certified Wood	1

10 Indoor Environmental Quality **Possible Points: 15**

Y	Points	Description	Points
<input checked="" type="checkbox"/>	1	Y Prereq 1 Minimum IAQ Performance	
<input checked="" type="checkbox"/>	1	Y Prereq 2 Environmental Tobacco Smoke (ETS) Control	
<input checked="" type="checkbox"/>	1	Credit 1 Carbon Dioxide (CO₂) Monitoring	1
<input checked="" type="checkbox"/>	1	Credit 2 Increase Ventilation Effectiveness	1
<input checked="" type="checkbox"/>	1	Credit 3.1 Construction IAQ Management Plan, During Construction	1
<input checked="" type="checkbox"/>	1	Credit 3.2 Construction IAQ Management Plan, Before Occupancy	1
<input checked="" type="checkbox"/>	1	Credit 4.1 Low-Emitting Materials, Adhesives & Sealants	1
<input checked="" type="checkbox"/>	1	Credit 4.2 Low-Emitting Materials, Paints	1
<input checked="" type="checkbox"/>	1	Credit 4.3 Low-Emitting Materials, Carpet	1
<input checked="" type="checkbox"/>	1	Credit 4.4 Low-Emitting Materials, Composite Wood	1
<input checked="" type="checkbox"/>	1	Credit 5 Indoor Chemical & Pollutant Source Control	1
<input checked="" type="checkbox"/>	1	Credit 6.1 Controllability of Systems, Fan/Filter	1
<input checked="" type="checkbox"/>	1	Credit 6.2 Controllability of Systems, Non-Perimeter	1
<input checked="" type="checkbox"/>	1	Credit 7.1 Thermal Comfort, Comply with ASHRAE 55-1992	1
<input checked="" type="checkbox"/>	1	Credit 7.2 Thermal Comfort, Permanent Monitoring System	1
<input checked="" type="checkbox"/>	1	Credit 8.1 Daylight & Views, Daylight 75% of Spaces	1
<input checked="" type="checkbox"/>	1	Credit 8.2 Daylight & Views, Views for 90% of Spaces	1

2 Innovation & Design Process **Possible Points: 5**

Y	Points	Description	Points
<input checked="" type="checkbox"/>	1	Credit 1.1 Innovation in Design: Exemplary Performance 55c7.1	1
<input checked="" type="checkbox"/>	1	Credit 1.2 Innovation in Design:	1
<input checked="" type="checkbox"/>	1	Credit 1.3 Innovation in Design:	1
<input checked="" type="checkbox"/>	1	Credit 1.4 Innovation in Design:	1
<input checked="" type="checkbox"/>	1	Credit 2 LEED[®] Accredited Professional	1

Green Design Commercial & Residential Buildings

- ✓ Create a Green Building Scorecard

NJ Examples:

West Windsor Green Practices Checklist

To encourage green design, raise awareness within the developer community, and begin to understand, based on developer feedback, which features could be mandated in the near term because they are feasible and have reasonable costs. Checklist to be included in the site plan and subdivision application.

City of Trenton “Sustainable Design Guidelines”

These sustainable guidelines are meant to function as “guiding principles” for all new development. Developers are strongly encouraged to submit concept plans to Trenton’s Division of Planning outlining all sustainable design elements prior to formal site plan submission.



Green Design Commercial & Residential Buildings

- ✓ Implement Green Design Standards through Site Plan review
 - Amend Site Plan checklist to include green design standards.
 - Will require the adoption of an ordinance to amend the Site Plan checklist.
 - Site Plan approval would then become conditional on fulfillment of these items, for which statutory authority is given by N.J.S.A. 40:55D-41 (contents of Site Plan ordinance).



Green Roof in Hoboken

Green Design Commercial & Residential Buildings

- ✓ Distribute Green Building Educational Information
 - NJDEP Green Remodeling Guidelines – Summer 2009
 - Education Material Provided by the municipal construction office
 - Green Tours – Princeton
 - Green Fairs



Green Design

Commercial & Residential Buildings

Sample of NJ Municipal Ordinances with Green Design Elements

- Woodland Protection Ordinance – Plumsted
- Bicycle Paths Ordinance - Lumberton
- Landscaping and Vegetation Ordinance – Cape May
- Outdoor Lighting Ordinances – Eatontown
- Wind and Solar Ordinances – several examples
- Construction and Demolitions Debris – Woolwich

Green Design – Additional Ideas

Density Bonuses – Kearny, NJ

Kearny, NJ – Redevelopment Projects with LEED Certification

- Platinum – Additional 0.3 FAR or 3 additional dwelling units/acre
- Gold – Additional 0.25 FAR or 2 additional dwelling units/acre
- Silver – Additional 0.20 FAR or 1 additional dwelling units/acre
- Certified – Additional 0.15 FAR or .5 additional dwelling units/acre

Financial Incentives – Jersey City, NJ

Permit and Land Development Application Fee Refunds

Proof of LEED Certification within one year of Certification

Refund Levels: LEED Platinum – 25%

LEED Gold – 20%

LEED Silver – 15%

LEED Certified – 10%

Accelerated Permitting – Chicago, IL; San Diego, CA; Burbank, CA

Thank you!



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