High Performance Manhattan

Reimagining the Metropolis –
High Performance Building in NYC –
Making it Happen

Pratt Center for Community Development

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What Are High Performance Buildings

Building
- Energy Efficient
- Water Conserving
- Comfortable
- Healthy
- Durable
- Flexible

Community
- Reduced Peak Infrastructure Loading (power, sewer)
- Resilient (during infrastructure crises)
Hearst Tower:

- Indoor Air Quality
- Energy Efficiency
- Water Conservation
- Transportation
- Construction Waste
The New York Times Headquarters

- Indoor Environmental Quality
- Energy Efficiency
- Demand Management
200 West Street:
- Indoor Air Quality
- Energy Efficiency
- Water Conservation
- Demand Reduction
- Infrastructure Independence
National Audubon Society Headquarters:
- Indoor Air Quality
- Energy Efficiency
- Transportation
- Sustainable Materials
The Verdesian:

- Indoor Air Quality
- Energy Efficiency
- Water Conservation
- Reduced Services
- Construction Waste
Community Goals

- Creation of a Livable, Uplifting Human Environment
- Habitat Restoration/Renewal
- Carbon Emissions Reduction
- Aquifer Recharge
- Clean, Healthy Watershed
- Optimized Infrastructure Support
- Creation of Economic Value
Issues

- Transportation
- Energy/ Carbon Emissions
- Solid Waste
- Water
- Economic Viability
Strategies, not Technologies

- Dense Building, Extensive Greenspace
- Pedestrian Accessible Amenities
- Transit/Pedestrian Accessible Work to Home
- Community Centered Utilities, if possible
- Optimized, Renewable Energy Sources
- Energy Efficient Individual Buildings
- Utilization of Non-Potable Water Resources
- Storm Water Management with Detention and Percolation
- Solid Waste Resource Utilization
Recognize Synergies – Building Interlocking, Cascading Systems

- Greenspace, Stormwater Management, Non-Potable Water Utilization
- Dense Building, Pedestrian Circulation, Transit Utilization
- Community Scale Utilities, Non-Potable Water Utilization
- Community/Building Energy Planning, Community Scale Utilities, Optimized Renewable Energy Sources
Solutions Can be Found at Different Scales

- **Regional Scale**
  - Offshore Wind Farms
  - Photovoltaic Farms or Solar Thermal Power Generation
  - Intercity Fast Rail to Supplant Airplanes and Automobiles

- **City Scale**
  - Waste Pyrolysis Plants with Carbon Char Sequestration
  - Real Time Energy Pricing for Market Response Load Management
  - Urban Transit to Avoid Need for Automobiles

- **Neighborhood Scale**
  - Local Waste Water Treatment with Effluent Irrigation of Parks and Provision of Cooling Tower Make-up for District Cooling
  - Mixed Use Zoning to Improve Pedestrian Access

- **Building Scale**
  - Microturbine Cogeneration for Domestic Hot Water
Microclimate Studies - Wind
Javits Convention Centre, NY
Microclimate Studies – Solar

Javits Convention Centre, NY
Community Energy Infrastructure
The “Improved” Urban Water Cycle

Optimal Usage of Alternative Water Sources
Thank You