Green Buildings Coming to a Town Near You

Kim Trella
CT DEP Pollution Prevention
What you may learn...

- Benefits of building green
- Green schools initiative
- Engaging your community
- Leading to the Future
The Many Names of “Green”

- Sustainable Design
- Green Architecture
- Energy-Conscious Design
- Healthy Building
- High-Performance Building
CT Green Building Council

- CT DEP partners with CTGBC to promote green buildings
- Goal is to promote, through education, the construction and renovation of buildings using green building standards
- 501c3 with broad representation
U.S. Green Building Council

The nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.

The organization’s purpose is to:

• *Integrate* building industry sectors
• *Lead* market transformation
• *Educate* owners and practitioners
Why Was LEED™ Created?

- To define “green” by providing a standard for measurement
- To act as a design guideline
- To promote a whole-building, integrated design processes
- To establish market value with recognizable national “brand”
- To transform the marketplace!
What does a Building look like?
How does LEED work?
LEED System Basics

* Contains
  – 7 prerequisites
  – 69 possible points

* Each Prerequisite or Point consists of a specific green building initiative.

* Gives the following ratings:
  – Certified 26 Points
  – Silver 33 Points
  – Gold 39 Points
  – Platinum 52 Points
LEED™ Categories

» Sustainable Sites
» Water Efficiency
» Energy and Atmosphere
» Materials and Resources
» Indoor Environmental Quality
» Innovation & Design Process
Local Benefits

- Save taxpayer dollars
- Average Energy Savings on a green building of 20-40% annually
- Water Conservation
- Better Daylighting – improved staff performance/ reduced absenteeism
Environmental Benefits

- Reduction in creation of Greenhouse gases (which lead to global warming)
- Better use of natural resources (recycled materials, certified wood)
- Water conservation (stormwater – rain gardens, efficiency – low flow fixtures, waterless urinals)
- Improved Indoor Air Quality
Green Schools Initiative

- To promote green construction and renovation for CT schools
- Stakeholder process results
- Where to go for help
- Current CT registered LEED™ projects
Green Schools Initiative

- To promote green construction and renovation for CT schools
- To educate decision-makers as to the lasting value of integrated design
- To provide support to communities interested in building green
Green Schools Initiative

- To educate decision-makers as to the lasting value of integrated design
- Designers of different systems within school work in concert
- At construction completion, building is commissioned to assure performance
Green Schools

* A recent energy benchmarking survey of CT schools found that there is considerable room for savings in our schools
* Current Cost Per Square Foot for Energy
  * Highest $2.87
  * Lowest $0.61
  * Average $1.37 sq.ft/year

More information at LeahyW@easternct.edu
Green Schools

- Resources available
- Design guidelines (CHPS)
- CTGBC assistance – flow chart on using integrated design
- USGBC studies (cost, efficiency, etc)
Process for Design and Funding of School Construction Projects in Connecticut

1. Identify need for expansion or new building
2. Establish building committee or study committee
3. Hire Architect
4. Create concept design
5. Obtain town commitment
6. CT Department of Education establishes reimbursement 20%-80%
7. Develop design and construction drawings
8. Design assessed by CT DPW for lifecycle cost
9. Development of final bid package
10. Hire Contractor
11. Change Orders
12. Acceptance of Building

Commissioning Agent
Figure 1
Average Green Cost Premium vs. Level of Green Certification for Offices and Schools

- Level 1 Certified (8 bldgs): 0.66%
- Level 2 Silver (18 bldgs): 2.11%
- Level 3 Gold (6 bldgs): 1.82%
- Level 4 Platinum (1 bldg): 6.50%

Source: USGBC, Capital E Analysis
LEEDtm Registered Buildings in CT
(as of 3/05)

K-12 Schools
Barnard Environmental Magnet School - New Haven
Danbury Elementary School Danbury
Hamden Middle School Hamden
Hotchkiss School Lakeville
Middletown High School Middletown
and VoAg Center
LEEDtm Registered Buildings in CT (continued)

Higher Education

Eastern CT State University Science /Classrooms
Willimantic

Eastern CT State University Residential Village
Willimantic

Southern CT State University Residence Hall
New Haven

Western CT State University Science Building
Danbury
LEEDtm Registered Buildings in CT (continued)

Higher Education

University of Connecticut - The Burton Family Football Complex/The Mark R. Shenkman Training Center Storrs

Western CT State University Residence Hall Danbury

Wesleyan Residence Hall & Parking Garage Middletown

Yale University Engineering Research Building (laboratory) New Haven
Non-Profit Organizations

- Foodshare Inc. Distribution Facility
  Bloomfield
- Mark Twain House and Museum Center
  Hartford

Commercial

- Bristol Myers Squibb Co. Facilities Offices, Warehouse & Maintenance Shops
  Wallingford
- Pfizer Clinical Research Unit
  New Haven
Engaging Your Community

- Hold community forums on upcoming construction projects
- Bring in green building experts (need help: [www.CTGBC.org](http://www.CTGBC.org))
- Take the lead on supporting green building locally
Plan on Rising Fuel Costs

- Is oil supply infinite?
- Consider alternative sources and methods – solar, wind, fuel cells, geothermal, etc
- Seek out incentive programs
Incentive Program

- CT Clean Energy Fund
- Encouraging the Generation and Use of Clean Energy
- Examples: solar, wind, biomass, hydropower
Clean Energy Community Program

Program Description

- Launched in November of 2004 with CCM, SmartPower and the Connecticut Clean Energy Fund
- Qualifying Municipalities as of October 1, 2005
  - Bethany  
  - Canton  
  - Cheshire  
  - Fairfield  
  - Hamden  
  - Mansfield  
  - Middletown  
  - Milford  
  - New Britain  
  - New Haven  
  - Orange  
  - Portland  
  - Stamford  
  - Trumbull  
  - West Hartford  
  - Westport
- Municipalities located in SWCT get twice the incentive.
Clean Energy Community Program

Clean Energy - Easy as 1–2–3!

20% by 2010 Campaign Commitment to Clean Energy

1. SmartPower
   + 100 Sign-Ups in Your Town to the CleanEnergyOptions
   =

Free 1 kW Solar PV

Visit SmartPower Booth!
Leading to the Future

- Make integrated design a starting point
- Use the long view (30 – 50 years) when considering construction
- Consider operation and maintenance costs over the long term
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Contact Information

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- CTGBC –
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