Newsletter
Update

2006-07 Issue 1

Construction Institute

Advancing Relationships
Developing Leaders
Building Opportunities

Save These Dates . . .

September 21, 2006
12th Annual Golf Classic, Lyman Orchards Golf Club, Middlefield, CT

October 25, 2006
12th Annual State of the State, Crowne Plaza Hartford, Cromwell, CT

November 16, 2006
Member/Guest Social Event of the Year, Farmington Club, Farmington, CT

December 1, 2006
Annual Owner's Forum, Northeast Utilities Auditorium, Berlin, CT

Professional Education Workshops

The Construction Institute's Professional Education Workshops begin in October. Check our website at *www.construction.org* for full workshop descriptions and registration information.

Sustainability—a Form of Disaster Preparedness

Recent natural disasters and blackouts have highlighted the fragility and vulnerability of our entire energy infrastructure. But few building owners have recognized that sustainable design offers not only cost savings, but also a form a disaster preparedness and, potentially, part of a long-term national security plan.

The key point is that our nation, society, and economy are heavily dependent on energy. Sustainability professionals have concentrated largely on environmental audiences, higher worker efficiency and long-term cost savings. However, sustainability offers great opportunities to provide security, as well as disaster prevention, mitigation, and relief. To do so, the design community can promote the following relative points:

Renewable technologies and designs offer more security than the existing infrasture
Most renewable energy sources fall into the category of distributed generation (DG), which uses small (up to 50 megawatts), modular, redundant, and fuel-diverse generators placed close to where the power is used. This alternative avoids costly, vulnerable and inefficient transmission systems and increases energy security in two ways: a) it reduces our dependence upon foreign oil, and b) it provides resiliency when used with the existing electric grid, providing high reliability and power quality.

Carefully chosen solutions for environmental problems can also mitigate security problems
Not all DG is considered renewable, but all types of technologies should be considered. For instance, the original diesel engine was designed to run on peanut oil and can also use hydrogen. Small-scale wind energy projects, like Hull Wind in Massachusetts, can be less offensive to the eye than large wind energy projects and can be a reliable source of energy to a local area.

Hull Wind Energy Project in Massachusetts

Environmental security is essential to national security
The use of resilient microgrids employing DG is being studied by Sandia National Labs for military base applications and may form a workable model for resilient communities throughout the country.

Storage is an important component
A major deficiency in many renewable projects is that storage capacity to provide a power outtage buffer is not included in the design. With storage capacity, if a system failed, it would do so gracefully rather than abruptly. While this

(please see Sustainability on page 3)

Joel Gordes, with an office in West Hartford, is a consultant on energy issues and a former state legislator. He can be reached at jgordes@earthlink.net.

High Performance Schools

Each year, Connecticut spends over $600 million dollars on building new schools and renovating existing schools. Most school districts are struggling with a 35% rise in energy costs as they also strive to meet educational requirements dictated under the No Child Left Behind Act and the Connecticut Educational Frameworks. Could part of the potential solution to all these challenges lie in adopting high performance building standards?

High-performance (HP) schools are built using an integrated design process that has long-term benefits for students, staff and taxpayers. The six areas that are considered in the design and construction process are site planning, energy efficiency, indoor environmental quality, renewable energy, materials, and efficient water use.

Photo: BVH Integrated Services

Barnard School, New Haven, CT

To start with, initial consideration is given to siting the facility. The building should be solar-oriented to optimize natural daylighting in each room. Access to daylight has been identified in numerous scientific studies to improve learning and test scores for children in both math and reading.

HP schools use the highest efficiency heating, venting and air conditioning systems to minimize energy use over the life of the building. Conserving water and reducing sewer charges are also stressed. Buildings are commissioned to verify that systems operate properly and efficiently. Superior indoor air quality is achieved through systems which filter air, reduce moisture and monitor air quality, leading to healthier indoor environments. Materials used in the construction of HP schools do not include toxic solvents and may incorporate at least some recycled materials.

Incorporating renewable energy, such as solar and photovoltaic, is also encouraged to reduce long-term energy cost and to teach students about creating a more sustainable energy future.

It was with this focus, and the support of the Henry P. Kendall Foundation and the CT Clean Energy Fund, that the CT Green Building Council launched the High Performance Schools Initiative. The first step, in February 2005, was to convene a stakeholder process with representatives of key constituencies, including superintendents, educators, representatives of local governments, state officials, health and environmental advocates, and the design community.

Through the stakeholder process, participants became knowledgeable in high-performance building standards, and examined the potential benefits that the citizens of Connecticut would receive by raising the building standards for new and renovated schools. The group determined that HP schools provide multiple benefits to students and their communities, including:

- Overall cost savings through lowered lifetime operating costs
- Healthier environments for the building occupants
- Enhanced learning atmosphere
- Environmental stewardship by the Community

(please see High Performance on page 4)

William Leahy, director of the Institute for Sustainable Energy at Eastern Connecticut State University, can be reached at leahyw@easternct.edu.

Welcome New Members

Bartholomew Company

CME Associates, Inc

Camp Dresser & McKee Inc. (CDM)

Connecticut Housing Finance Authority

Fairfield Public Schools/ Construction Office

Harrington Engineering, Inc.

Honeywell Automation & Control Solutions

Langan Engineering & Environmental Services

Learned1 LLC

Management Strategies, Inc.

The Metropolitan District

Moser Pilon Nelson Architects, LLC

Tri-Con Construction Managers, LLC

Trinity College

Topper & Griggs Group, LLC

Wank Adams Slavin Associates LLP (WASA)

WeRecycle!, Inc.

Sustainability

(continued from page 1)

adds cost to a renewable project, the benefit of security goes beyond the cost of kilowatt-hours.

Other actions that can be taken to incorporate energy security principals are:

- Design and renovate schools with solar capacity so they can double as shelters
- Target state funds for towns to build sustainable systems for first responders
- Institute government procurement for a sustained orderly development strategy to lower the price of distributed renewable energy systems in order to provide for resilience of government operations
- Avoid construction of questionable new transmission lines or LNG facilities that import foreign-sourced fuels
- End our reliance on foreign sources of oil in a well-planned transition over several decades

If we are to build truly sustainable buildings then they should support inhabitants at least at minimum levels. We can best accomplish this by providing resilient energy systems within sustainable buildings that provide security in times of emergencies. ▲

F O C U S

31st Annual Membership Meeting & Awards Dinner

Distinguished Achievement Award recipient, Bruce Bockstael, FAIA, Chief Architect, Department of Public Works (State's Building Program), State of Connecticut

Distinguished Service Award recipient, John J. Reid, Esq., senior partner of the law firm Gordon Muir & Foley

Special Lifetime Recognition Recipient, David LaBau, FAIA, Founder and past chairman of The S/L/A/M Collaborative and founding member of the Construction Institute

Outgoing Chairman of the Institute's Board of Directors, David Jepson, suggests a flourescent orange sledge hammer as an alternative to the traditional gavel to incoming Chairman, Chuck Pinckney

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High Performance (continued from page 2)

The group identified barriers to raising building standards. These included:

- General lack of understanding of HP building standards
- Potential conflicts with typical competitive bid and contract procedures
- Fear of or resistance to change
- Perception that the initial cost would be prohibitively high

While nationwide data suggests that the first costs of high-performance construction can be between 0 and 2 percent more than conventional construction, high-performance buildings typically use 20 to 40 percent less energy than conventional buildings built to code. Thus, the utility savings alone (electricity, heating, water and sewage) result in a payback in 3 to 5 years for facilities which are typically used for 40 years. The stakeholder group endorsed adopting the new standards and promoting the integrated design process, which would result in energy-efficient and healthier buildings. Over the span of the buildings' useful life, high-performance schools are less expensive to operate than conventional schools. In the spring of 2006, the CT General Assembly passed a bill requiring high-performance standards for all state projects. In 2007, they will consider a bill to require high-performance standards for all municipal projects including public schools. For more information, please contact members of the Connecticut Green Building Council at www.ctgbc.org or the Institute for Sustainable Energy at www.sustainenergy.org ▲