



## Coming Soon

### “Getting to Green” Seminar

This is an introductory seminar on green building certification programs. Spend just two hours at “Getting to Green” and learn how you can use green building rating programs to create better performing and more environmentally sound buildings.

#### Tuesday, Nov. 28

Doubletree Hotel  
10740 Wilshire Blvd., Los Angeles  
7:30 a.m. continental breakfast  
8:00 – 10:00 a.m. seminar  
Fee: \$35 (includes breakfast and handouts)  
Free valet parking

#### Wednesday, Nov. 29

Omni Hotel  
215 S. Olive St., Los Angeles  
7:30 a.m. continental breakfast  
8:00 – 10:00 a.m. seminar  
Fee: \$35 (includes breakfast and handouts)  
Free valet parking

Registration for both events: Call Sonja Fife, (562) 594-03214 or e-mail [Greenbuilding@pgn.com](mailto:Greenbuilding@pgn.com) to reserve your space.

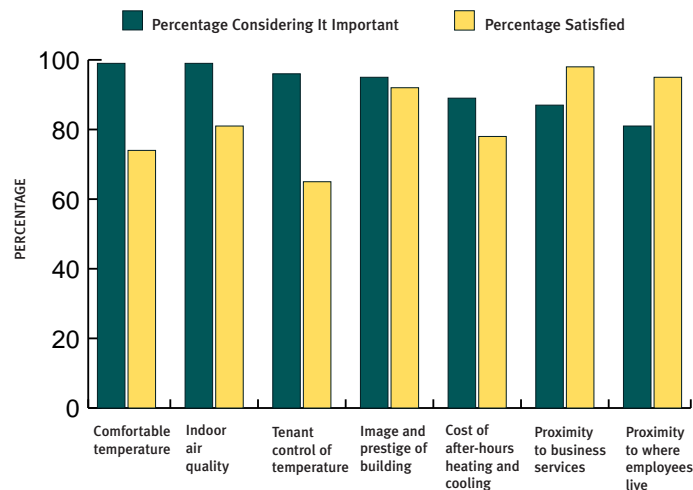
Presented by Green Building Services

## THE VOTES ARE IN: THE INTEGRATED ENERGY DESIGN APPROACH IS A CLEAR WINNER

During 2000 we’ve been reminding you about the advantages of using an integrated approach to building design rather than the traditional “Pony Express” method. That’s where the architect puts the design together and hands it off to the engineers, who order up the mechanical and electrical systems and pass the project off to the contractor. And in this booming economy everyone’s in a hurry to finish fast, spend as little as possible, and start earning money on investments. Buildings get built, but often sacrificed in the process are occupant comfort and operating costs. In other words, the performance gets lost in the translation.

### DO BUILDING OCCUPANTS CARE ABOUT COMFORT?

The Building Owners and Managers Association (BOMA) took a survey recently that investigated the preferences of office tenants. The biggest disparity between what people find important and whether they are satisfied with their buildings is in the performance of HVAC systems.



Source: BOMA

By contrast, integrated building design happens when a multidisciplinary team of architects, engineers, energy experts, and other consultants work together from the start to optimize the design of all the building components and systems. Using this approach,

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## NEW RELEASE OF VISUALDOE AVAILABLE

Eley Associates has released VisualDOE 3.0, a state-of-the-art building energy simulation software package. The new program builds on VisualDOE 2.5 and adds many new features that increase the value and ease of use of the software.

- The new custom block editor allows users to create complicated building plans by drawing polygons, entering coordinates, or importing data from CADD files. Shapes can be rotated, standard blocks can be converted to custom blocks and modified, rooms can be combined, vertices can be dragged to change block shapes, and daylight reference points can be repositioned with the mouse.
- Custom facades can be created with numerous windows of any size at any position on the facade. This is achieved through an easy-to-use drag-and-drop user interface. Skylights are a new feature of the program and these are placed on roof surfaces in a similar manner.
- A new 3-D viewer displays the building and its components in a realistic perspective view.

VisualDOE 3.0 is a complete building energy simulation package suitable for users of any ability level. Beginners will appreciate the drag-and-drop ease of creating building models, built-in templates for standard building types and appropriate default values for HVAC systems. Advanced users can now schedule central plant operations, define custom load ranges for central plant equipment management, and edit DOE-2 input files to include macros and functions. DOE-2 input, BDL, and output files can be edited from within the program interface. Standard DOE-2 output reports are conveniently displayed in the DOE-2 file interface after the simulation is completed.

A single user Green Design Tools license is priced at \$800. This includes all US TMY-2 weather files, unlimited technical support and program updates and bug fixes. Upgrade from any previous version of VisualDOE costs \$400. A special discount is available for educational institutions.

For more information, send an e-mail to [VisualDOE@eley.com](mailto:VisualDOE@eley.com) or call Eley Associates at (415) 957-1977.

the team can design a building whose operating costs are as low as possible and still satisfy occupants' comfort and temperature control needs.

## SIX STEPS FOR SUCCESS AND SAVINGS

The Energy Design Resources Design Brief on Integrated Energy Design describes the following steps for success in using this approach:

- *Make a commitment to the integrated design process* – and back up that commitment by giving the project team the time and resources needed to see the process through.
- *Identify integrated design strategies* that will reduce lifetime costs while also improving occupant comfort.
- *Conduct a whole-system analysis* that treats the building holistically, taking into account interactions among all of the building's systems.
- *Base design decisions on lifecycle economics*, emphasizing the full lifetime value of proposed building improvements.
- *Follow through*, so that the integrity of planned improvements is maintained throughout the construction process.
- *Check your work* – by verifying that the building lives up to expectations once the project is completed.

## THE LATEST AND GREATEST

Another recent study by E-SOURCE investigated several building projects to determine if integrated design is cost-effective. The study found that the cost-effectiveness varied widely. However, projects that incurred no incremental costs for integrated energy design were clearly cost-effective because they cost no more to build than a standard design, and they produce lifetime savings.

Those projects that were evaluated using simple payback as an economic evaluator varied from several months to several years and the results were not conclusive. However, where lifecycle costing was used, all the projects studied were cost-effective, depending on the time horizon the building owner felt was acceptable. By designing for efficiency from the start, added expenses incurred for energy efficiency measures (and related extra design effort) can often be offset by reduced outlays for reduced equipment size and components. For example, the use of energy efficient lighting fixtures and high-performance glazing can reduce the building's air conditioning loads and enable designers to specify a smaller cooling plant. The small plant allows the design to cut supply-air flow rates, leading to

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less pressure drop in the air distribution system so that smaller fans can be installed.<sup>1</sup>

## MAXIMIZING PERFORMANCE AND FIRST COST INVESTMENT

*Environmental Building News* recommends the following strategies that can help you maximize the energy performance of your building design while saving on the cost of the project:

- *Perform energy analyses.* During design, model the energy performance of a building so that mechanical systems can be optimized. Conventional practice may oversize HVAC equipment, which wastes a lot of money, (See the Energy Design Resources Web site to access some expert software tools to help you in this process [www.energydesignresources.com](http://www.energydesignresources.com).)
- *Tune glazings to orientation.* There is usually little if any additional cost in specifying different glazings for different orientations. Low SHGC glazings may be appropriate for south-facing glazings, because cooling loads can be high even in the winter, when the sun is low in the south sky and heat gain from the south is significant.
- *Consider underfloor air distribution systems.* This configuration offers opportunities for energy savings, improved indoor air quality, and more flexibility for floor plans. (See EDR E-News Issue 18, Oct. 27, 2000.) It also lowers costs by eliminating dropped ceilings and reducing floor-to-floor height in multi-story buildings.
- *Expand the comfort envelope and downsize cooling equipment.* By providing operable windows for natural ventilation to increase air flow in buildings, you can increase occupant comfort with less cooling. This means you can downsize mechanical cooling equipment, which reduces equipment costs.
- *Provide task lighting.* By minimizing ambient lighting in commercial spaces and providing task lighting, you can reduce first costs and achieve significant energy savings for lighting and cooling.

For more information on integrated energy design, please see: Energy Design Resources Design Brief on Integrated Energy Design at [http://www.energydesignresources.com/publications/design\\_briefs/db\\_integrated.html](http://www.energydesignresources.com/publications/design_briefs/db_integrated.html)

"Building Green on a Budget" by Alex Wilson, *Environmental Building News*, Volume 8, Number 5, May, 1999.

[http://www.buildinggreen.com/features/lc/low\\_cost.html](http://www.buildinggreen.com/features/lc/low_cost.html) 

<sup>1</sup>Krepchin, I. (Sept. 2000) Integrated Building Design, Publication ER-00-15 Financial Times Energy, Inc. [www.esource.com](http://www.esource.com)