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It's not easy being green, but it's getting easier

By Mickey Goodman
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Georgia Tech's new DuPree College of Management in Technology Square received LEED's™ Silver Certification for meeting criteria in six key areas: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design process. Photo courtesy of Air Quality Sciences Inc.

environmental quality, and innovation and design process.

A number of buildings in Atlanta have qualified, including Georgia Tech's new DuPree College of Management in Technology Square, which received LEED's Silver Certification. In addition, each of the five buildings in Atlanta that received LEED certification utilizes Indoor Air Quality elements. At Emory, the Whitehead Memorial Research Building is LEED-certified. Other projects: the Science 2000 Phase II, the Emory Candler Library renovation and Winship Cancer Center renovation. Other green buildings in Atlanta scheduled for completion in 2004 include the Atlanta-Fulton County Stadium renovation, the Community Food Bank, the Klaus Advanced Computing Building and the YMCA Vickery Creek in Cumming.

According to a report commissioned by the California Sustainable Building Task Force, these environmental projects can cost 2 percent more initially (an average of \$3 to \$5 more per square foot). However, factoring in energy, water and waste disposal, the savings over the lifetime of the building are more than 10 times the initial investment (or \$50 to \$75 per square foot).

"Discussions about high-performance sustainable buildings have become common during construction project planning should be the norm, not the exception." Michael Burnett, senior pre-construction manager at Holder Construction. "Because of the company's commitment to sustainable design and construction, Holder has focused on ensuring that its professional staff is knowledgeable. Twenty-two employees are LEED-accredited. By using LEED-qualified professionals, building owners can accrue an additional point toward LEED certification."

Based on Holder's experience over multiple projects, all LEED points are not created equal from a value perspective, Burnett said. Under the right project circumstances, 22 of the required 26 (or 85 percent) may be achieved at no cost over the traditional approach. These include site selection, reduced site disturbance, reduction in "heat islands" (urban areas that can be 6 degrees to 8 degrees hotter than surrounding areas) and alternative

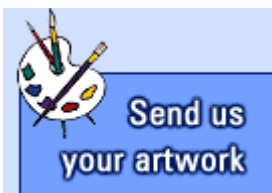
The simple task of using multiple dumpsters to transport waste materials from a building site to a recycling center is a positive environmental contribution by sending waste to recycling centers rather than landfills. Other criteria like water-efficient

Green is fast becoming the industry's favorite color. The U.S. General Services Administration now requires all federal buildings to be green, or environmentally sustainable. In California, the goal for all state construction is to "go green." In Atlanta, Georgia Tech's new DuPree College of Management in Technology Square is the first building to receive LEED Silver certification. And in Florida, the University of Florida has taken the concept of green construction to a new level by collecting rain water to irrigate landscaping, reducing energy use and using well water for air conditioning costs.

At the forefront of the green construction movement is the Building Council's Leadership in Energy and Environmental Design (LEED) certification. Using a point system, buildings can earn platinum certification measured in six areas: water efficiency, energy efficiency, materials and resources,



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optimum energy performance may have an initial cost impact but involve a short payback, Burnett says. Green (electric) power and grass roofs for semi-underground buildings, offers points with little or no net

For the seventh year, Southface, the regional affiliate of the U.S. Green Building Council, is hosting Green Building Conference for those involved in the residential and commercial building process. This year is devoted to commercial buildings. "The demand for commercial 'green' is now 50 percent of what we see," spokesperson Abigail Paine said. Scheduled for March 18 and 19 at the Westin Peachtree Plaza, the conference is sponsored by Georgia Environmental Facilities Authority, ULI Atlanta, EarthCraft House and the U.S. Green Building Council.

During the 2003 conference, architectural firms participated in an eco-charrette (a French word meaning a group) and jointly designed an eco-office for Southface in Midtown next to the Civic Center. "There has been a great deal of work on the building along with product donations," Paine said. "When it is completed in fall 2005, it will be a great example of an attainable goal for anyone who wants to do a green [office] building."

The exterior of a building is only part of the green equation, said Dr. Marilyn Black, CEO and chief scientist at Green Sciences Inc. "A lot of the elements of green building focus on energy conservation and traditional environmental health and safety," she said. "However, it makes no sense to go to all those efforts and poison the people in the building. The goal is the green concept." Many state legislatures apparently agree. In 2003, 27 state legislatures considered bills with 18 enacting laws.

The first woman to receive a Ph.D. in chemistry from Georgia Tech, Black did her post-graduate work at Georgia Tech and developed the GREENGUARD Environmental Institute, an independent non-profit organization that certifies products through a certification process for low-emitting products encompassing everything from wall coverings to office furniture. It remains the only resource for tested and certified low-emitting building materials and furnishings. As a result, many mainstream products now meet standards for low chemical emissions by using IAQ principles through their manufacturing process.

According to a 2002 report by William Fisk, head of the Indoor Environment Department at Lawrence Berkeley National Laboratory, improving air quality not only leads to significant reductions in illness but also has a direct impact on worker productivity. An important factor in that equation is the absence of mold and mildew and volatile organic compounds that are emitted by interior furnishings. The impact of green interiors is easily equated to the savings in health care benefits, reduced absenteeism and increased worker productivity.

Since air quality is a big part of the green equation, the U.S. Green Building Council requires 10 percent of the volume of air to be replaced with fresh air every hour. Ensuring that buildings are mold- and mildew-free is an important factor, and many state legislatures have either enacted or are considering bills that relate to either the importance of and/or the competency of those doing the work.

The IAQ factors that most influence occupant health and welfare are thermal conditions, lighting and indoor air quality. When these elements are lacking, "sick buildings" can cause physical symptoms in occupants, such as higher absenteeism and lower productivity. Innovative designs such as "light shelves" (devices on the wall that bounce light toward the ceiling and farther into space) add natural light to the workplace and also reduce energy costs.

Each year it becomes easier and easier — and more cost effective — to be green. There are now consistent standards for products and LEED guidelines to ease the transition. With federal and state governments leading the way, the private sector likely will follow creating a safer, healthier world for all.

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