

# IT'S NOT HARD BEING GREEN

Two Buildings, Two Paths to Energy Savings

BY CARLOS MACIAS

**T**he Solaire, which stands 27 stories high in Battery Park City, is a 3-year-old luxury rental building with sweeping views of the Hudson River that caters almost exclusively to young professionals working in the financial district. A few miles away, on East Third Street stands the seven-story Diversity Houses, developed by the Lower East Side People's Mutual Housing Association to provide housing to low-income families from diverse ethnic backgrounds.

Despite the obvious differences, both buildings are part of the current real estate trend to develop more environmentally friendly residential buildings. But while both Solaire and Diversity Houses claim to be “green,” or environmentally friendly, each has pursued very different strategies for the label. Just as the two buildings cater to tenants at opposite ends of the economic spectrum, they also represent conflicting views on how best to achieve energy savings.

The Solaire, which cost \$114.5 million to build and claims to be the nation’s first green residential tower, has received a gold LEED certification, the highest-level environmental certification of the U. S. Green Building Council (LEED stands for Leadership in Energy and Environmental Design). The council was established by the real estate industry to set standards for environmental certification.

“We provide the Good Housekeeping Seal of Approval,” says Michael Deane, chairman of the New York chapter of the Green Building Council and East Coast manager of sustainable construction at the Turner Construction Company. “LEED sets environmental standards for design and construction projects that are ‘quantifiable and measurable.’”

At the Diversity Houses, Mary Spink, the developer, asserts that a green building can be had through good engineering and a few practical ideas, without the costly LEED certification process.

“What do I need it for?” says Spink of LEED certification. “We will gladly show anyone our energy and gas bills to show you that we only use 22 percent of the energy an average New York City apartment house uses for making heat and hot water.”

Some environmentalists, builders and architects say the cost of filing for LEED certification—which can go as high as \$150,000 for administration and paperwork—excludes all but the largest developers and buildings. And the LEED rating system gives the same

number of points for minor environmental amenities, such as installing a \$350 bicycle rack, as it does for installing more efficient heating and air conditioning, which can cost tens of thousands of dollars and has a greater environmental impact, a recent article in *The Wall Street Journal* pointed out.

Yet some environmental organizations, including the Natural Resources Defense Council, embrace LEED certification. The Council’s Web site, for example, provides detailed information on how builders can achieve energy-consumption reductions while earning points toward LEED certification. The council’s own buildings in San Francisco and Santa Monica, Calif., are LEED-certified.

City and state governments have also endorsed the LEED standards. Legislation requiring most city-owned and city-funded construction projects totaling \$2 million or more to fulfill at least basic LEED standards was passed by the New York City Council in October and signed into law by Mayor Michael Bloomberg. The legislation, which will take effect next January, also calls for construction projects totaling at least \$12 million to achieve energy cost savings of 20 to 25 percent.

Five years ago, Gov. George Pataki issued an executive order that compels state agencies to use green construction techniques. The order provides tax credits to developers if they use eco-friendly materials and meet certain energy standards that comply with LEED standards. Between 2000 and 2004, tax credits worth a total of \$25 million were provided for nine projects; legislation for another \$25 million in tax credits for buildings constructed between 2005 and 2009 is currently being drafted.

Arizona, California and Washington have also endorsed the Green Building Council standards for new state buildings, and so have major corporations including Toyota, General Motors, Ford and Goldman Sachs, whose new tower in New Jersey is LEED-certified.

The certification was developed in 2000 to serve as a building design guideline for

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developers and architects, but LEED is an evolving process. For example, the current standard provides a one-time certification that considers only the energy efficiency of a building at the time of its completion or certification. The Green Building Council also offers a certification process for retrofitting existing buildings for energy efficiency.

However, a new standard expected to go into effect next year will stipulate a review process that ensures buildings maintain their energy efficiency and continue to meet LEED standards over time. The new standard will also include a process for certifying new residential homes and communities.

The LEED process is controlled by the construction and design industries, and there is no doubt that it serves as a marketing tool for developers. Just as vitamin water and soy milk are being marketed to health-conscious consumers, green certification is being marketed to tenants and buyers. How potent a force it will be in buying and renting decisions remains to be seen.

The Solaire boasts both improved energy efficiency and premium rental rates. On its western facade, the building is covered by solar panels that generate 5 percent of the building's electricity supply. Its hallways are equipped with automatic-dimming fluorescent lights. The developers installed 33 percent more sheetrock between apartments than is found in comparable buildings to improve insulation. And a rooftop garden improves the building's insulation, also lowering energy costs.

Water-treatment equipment recycles wastewater for use in toilets and central air conditioning systems, and 60 percent of the construction materials were made from recycled materials. The heating- and air-conditioning system reduces the building's electricity usage by 35 percent, according to the developer. The "greening" costs for the Solaire totaled \$17 million.

All this, taken together, sharply reduces the amount of carbon dioxide, sulfur dioxide and nitrogen oxides that the building emits, according to a case study by the Natural Resources Defense Council.

The building, whose rents range from \$1,800 for a small studio to \$8,000 for a top-of-the-line two-bedroom unit, has a plaque near the entranceway that boasts "America's First Environmentally Responsible Residential Tower."

No such plaque hangs outside the Diversity Houses, where rents range from \$430 for a one-bedroom apartment to \$764 for a three-bedroom apartment. Residents for the 44 apartments were chosen in a lottery from a waiting list or more than 4,000 applicants, and all of them have family incomes of no more than \$31,400 a year.

Spink, the developer, is proud to point to many energy savings achieved at a fraction of the costs incurred by Solaire.

Like the residents of the Solaire, the tenants at Diversity Houses can enjoy a rooftop garden that lowers the building's energy costs by providing insulation. A new wall design using mineral wool insulation helps retain heat better than typical glass-fiber insulation.

## “BUILDINGS 50 YEARS AGO WERE GREENER THAN SOME RECENT DEVELOPMENTS.”

Thermostats in every room can be set no higher than 73 degrees Fahrenheit. By placing the energy-efficient boiler on the roof rather than the basement, Diversity Houses claims it has cut its fuel bill by 30 to 40 percent from that of a comparably sized building.

Motion sensors are placed in stairwells to activate only upon tenant movement, much more efficient than traditional, constant illumination. The building's outdoor lights are operated by an inexpensive solar cell that turns the lights on only as darkness falls. And a low-voltage, low-speed elevator further reduced energy costs.

“I would never get certified, because I didn't put a vestibule in the building; some of the lighting fixtures and circulation fans we use are not 'Energy Star' certified,” says Spink, referring to energy-efficiency guidelines set by the Environmental Protection Agency. “But that doesn't mean that the building is not efficient. They fit our necessities and budget.”

Unfortunately, some experts caution that all the new environmental standards will do, at least in the short term, is little more than make up for the inefficiencies built into most construction projects in recent decades.

“Buildings 50 years ago were greener than some recent developments,” says Gregory Kiss, a founder of the architectural firm Kiss+Cathcart, which specializes in environmentally innovative architecture. The firm is responsible for the widely-acclaimed Stillwell Avenue subway station in Coney Island, the first green station in New York. “For example,

the Empire State Building has good daylight utilization; you can actually open some windows to get fresh air in the summer, lowering A/C costs.”

By contrast, says Kiss, most modern office buildings rely on powerful, inefficient climate-control systems that consume a lot of electricity and provide low indoor air quality. Indeed, indoor air pollution can be as harmful to people's health as outdoor air pollution, according to the Environmental Protection Agency. Studies suggest that indoor air pollutants are two to five times outdoor levels, and sometimes much more.

Kiss notes that the ultimate goal for the green building movement is the so-called Zero Impact Building. The green building of the future will cause “no harm to the environment,” says Kiss. “Instead it must be an active benefit, it must generate all energy needed by itself, minimum or no water usage from municipal sources, minimum or no disposal of organic materials and when demolished at least 80 percent of the materials must be recyclable.”

Kiss had those features in mind when he designed the 2020 Tower, a 150-story building with solar panels and wind turbines designed to provide 100 percent of the building's energy needs. This project is still on the drawing board.

Such fully green buildings may be a concept for the future, but the Solaire and Diversity Houses demonstrate that environmental innovation is available at all price levels. D&S