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## Going Green

By Cynthia Barnett - 2/1/2007

### Green Building

**What:** Building practices that conserve energy and resources, involving building materials, landscaping, appliances, lighting, plumbing and approaches to site selection, heating and cooling.

**Why:** Buildings are the biggest drain on energy and natural resources. Using solar power, trees to the east and west to shade houses, energy-efficient appliances, landscaping with drought-tolerant plants and rainwater to flush toilets can help save natural resources and money. Green buildings also can be healthier for the people who work or live in them.

**How:** The U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) program ([Usgbc.Org](#)) is the national standard for commercial structures. The Florida Green Building Coalition ([Floridagreenbuilding.Org](#)) also offers green-building designations, including one for homes, which are not yet covered by LEED. Audubon International's sustainable development program ([Auduboninternational.Org](#)) is considered the most rigorous for community developments. Developers win certification by racking up minimum numbers of points in key categories, including energy, water, site selection and design, health and materials.

In the wake of Florida's last drought, Miami-Dade County officials asked the South Florida

Water Management District for permission to increase ground-water withdrawals by 100 million gallons a day to keep pace with population growth. The district's answer was a short, shocking "no."

The water managers based their decision on the region's depleted groundwater resources and the fact that Miami-Dade recycled only 5% of the water it used. For Miami-Dade County, the inability to pump more water helped put major proposed developments on hold and sent officials and developers scrambling.

Part of the county's response has been an effort to promote a more environmentally sustainable approach to growth, including "green building" practices -- ways to build homes, offices and other developments that use less water and energy and are healthier for the people who live and work in them. Today, Miami-Dade offers fast-track permitting for developers with green-building plans, tax incentives for companies that build green and a mandate that all future county government buildings be built green.

Whether Miami-Dade can sustain growth and live within its environmental means is yet to be seen. But the green-building policy is not some "warm and fuzzy" tactic calculated to appease environmentalists and get growth back on track, says Pierce Jones, director of the University of Florida's Program for Resource Efficient Communities. "When you consider Florida's population growth and the water and energy it would take to meet that growth if nothing changes, you can see that it's just not going to be possible in many parts of the state. That's what makes this a serious business issue."

Until recently, Florida has lagged a burgeoning national green-building trend. Many states have dozens of buildings certified under the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) program, a national standard for commercial buildings. By contrast, there are only 10 LEED-certified buildings in Florida.

But now, green building is poised to go mainstream. Since December 2004, the number of Florida commercial projects seeking LEED certification rose from 30 to 133. Last year, the Florida Home Builders Association agreed to adopt the standards set forth by the Florida Green Building Coalition, a non-profit organization that has worked for years to create rigorous practices, including for houses.

Green-building pioneers are working on projects all over Florida -- in both residential and commercial building sectors. WCI is building the Venetian Golf & River Club in Venice, where all homes -- eventually 1,100 -- will be certified green. The homes include passive design features, including sun-exposure orientation, cross-ventilation, solar lighting and native landscaping rather than mechanical irrigation systems; use of renewable materials; energy-efficient appliances; and water-conserving plumbing. WCI also is working on plans -- along with the Florida Solar Energy Center -- to build a zero-energy model home in its planned Artesia community in Collier County.

Sarasota County pioneered green-building concepts in Florida in 1994, when it built the Florida House Learning Center, a

prototype home that draws visitors from around the world who want to check out the latest energy- and water-saving products. Today, the county has developed the most aggressive green-building incentive program in the state, including measures that have shown how Floridians can make dramatic cutbacks in water use and still enjoy beautiful landscapes. The county's residents use a little more than half the statewide average of 174 gallons per person per day, responding to landscaping requirements standard in green building.

Meanwhile, at the University of Florida, President Bernie Machen has mandated all future buildings be LEED-certified; three LEED buildings constructed so far use about half the energy and less than half the water of traditional structures. UF's first green building, Rinker Hall, part of the College of Design & Construction, serves some 1,000 students, faculty and staff each day yet uses less potable water than the average house. An 8,000-gallon cistern captures rainwater for irrigation and toilet-flushing. The traditional-looking urinals are waterless.

JEA, Jacksonville's public utility that supplies both electricity and water, has sought to preclude the need for a new power plant by creating incentives for conservation. Last year, JEA launched Green Built Homes of Florida, an incentive-based program that gives builders rebates for every home that meets Energy Star standards -- an EPA measure of energy efficiency calculated to reduce energy demand and air pollution. Over time, JEA executives hope the program will generate the kind of savings realized by Austin Energy in Texas, where aggressive efficiency programs over two decades offset the need for a 680-megawatt plant.

#### Healthier

In addition to saving natural resources and money, some companies have realized that green buildings can be healthier for the people who work or live in them. In Pensacola, managers at the Virginia-based Navy Federal Credit Union built a new call center with both human and natural resources in mind. In addition to energy savings, the company was concerned about worker productivity and satisfaction at the old call center, which had a 60% turnover rate.

At the new building, workers enjoy natural lighting and look out of large windows into a live oak grove as they work. The center floor was designed so that "even the person farthest from the window and sitting down can appreciate those views," says Preben Ebbesen, senior vice president for construction for Navy Federal. All employees have a unit under their desks -- workers call them "salad spinners" -- that lets them control their own heat, air and circulation.

Turnover has dropped to 20%, Ebbesen says. Employees "have such a good attitude that when anyone from headquarters comes down from Virginia, within 10 minutes they're shaking their heads in disbelief," he says. "We wanted a healthy building where the people feel good working, where they feel good when they come in the morning and when they go home at night. LEED turned out to be a very good template for that."

#### Costs and barriers

In a tiny, rural town called Lee in Madison County below the Florida-Georgia border sits one of the most state-of-the-art manufacturing plants in North America. Nestlé Waters North America cranks out 26 million cases of Zephyrhills, Deer Park and Nestle Pure Life products each year at the 646,000-sq.-ft. plant, which is also the Southeastern U.S. distribution center for all Nestlé water products, from Perrier to Pellegrino.

Last year, the Nestlé plant became the first manufacturing facility in Florida awarded LEED certification. The cost was considerable: Each of Nestlé's green factories cost the company between \$350,000 and \$500,000 more than a traditional plant, says Nghia Tran, Nestlé's senior design manager for facilities. The company hires an independent consultant to make sure the project adheres to Green Building Council guidelines, and it uses a unique but expensive natural wetlands system to treat wastewater.

If the costs are considerable, so are the savings: Nestlé's five LEED factories in Florida, California, Michigan, Texas and Tennessee have saved 1,500 megawatt hours of energy and 9 million gallons of water; kept 2 million pounds of carbon dioxide out of the atmosphere; and kept 108,000 tons of solid waste out of landfills.

The steep initial price tag may make many green factories unrealistic, at least for now. But the once-prohibitive cost of building homes, office buildings and retail stores is falling as green-building practices become more widespread and green materials more available. For example, UF's Rinker Hall, which earned LEED Gold certification in 2004, cost 10% more to build than a traditional building. However, the only additional cost for the dozen new or planned LEED buildings on UF's campus is the LEED certification fee -- about \$450, says Bahar Armaghani, assistant director of facilities planning and construction. "Even when you look at Rinker, the payback will take only seven years," says Armaghani. "We keep our buildings 100 years, so that's a good deal."

In Clearwater Beach, JMC Communities' newest project, the Sandpearl Resort, is on track to become the first LEED-certified resort in Florida. Features include preferred parking spaces for hybrid electric cars; geothermal heating for the pool and spas; an AC system that cuts off any time a guest leaves a room or opens a sliding-glass door. JMC CEO J. Michael Cheezem says making the Sandpearl green will cost approximately 5% more, "but when you look at the energy savings, water savings and resource savings, it's remarkable how it adds up."

"It's going to be the status quo much quicker than anyone realizes because it's beginning to make economic sense to do it," Cheezem says. "And the more consumers see, the more they will demand energy-efficient, respectful buildings -- especially homes."

Lakewood Ranch, a 33,000-acre, mixed-use community straddling Sarasota and Manatee counties, requires all-green construction. Director of builder programs Bob Sisum says the per-home cost of building green has dropped from \$2,000 to less than \$500. In commercial construction, he says, green building increases costs by about 1.4% to 2%.

Aside from cost, the greatest barrier to green building in Florida has been fear of change. Jennifer Languell is a Naples consultant who has a doctorate in civil engineering with a specialty in sustainable construction. Twice, she says, clients with green-development plans, including wildlife corridors, gave up and built traditional gated communities because county governments resisted the increased density called for in the green plans.

In nearby Charlotte County, the health department won't let Waterford Cos., which is building a green development called Mariner's Landing, capture gray water, such as that drained from the bath or clothes washer, and then filter it for use in irrigation. "I was just down in the Turks and Caicos, and water is so precious that you would not be allowed to build anything without using gray water," says Rob Struckman, who oversees green building for Waterford. "There are still a lot of uneducated officials out there as far as gray water is concerned."

Developers seeking to solar-power communities face similar barriers. Pinellas County commercial real estate developer Grady Pridgen, who has turned to mixed-use residential communities, has pledged that all of his company's projects will be built green. Pridgen controls large swaths in St. Petersburg's Gateway area, which has one of the largest concentrations of employers in the state, with some 150,000 jobs, but little housing. He has ambitious goals to build communities where "you don't need a car and you don't get a utility bill." But he says state rules stand in the way of developing solar energy, including his plans for a 4-megawatt solar-cell panel system in a high-rise project. Florida caps the amount of alternative energy any one development can generate to 10 kilowatts, about enough to power a 1,500-sq.-ft. energy-efficient home.

State Sen. Mike Bennett, a Bradenton Republican who has criticized Florida's investor-owned utilities for not doing more to develop alternative energy sources, plans a bill in this year's legislative session that would make it easier for developers to do large-scale solar.

Some advocates say the state needs a green-building champion -- ideally, the new governor -- to inspire change in all state government functions where rules and regulations haven't caught up with sustainable-building and low-impact development trends.

Greenwashing?

In a historic Sarasota neighborhood called Poinsettia Park, business partners Steve Ellis and Grant Castilow are tearing out walls and installing gray-water plumbing in a bungalow built in 1946. The Mediterranean-inspired home, once dark inside but soon to open into a courtyard of native plants, will be certified green. Ellis and Castilow are using as many original materials as possible while adding Energy Star appliances and materials such as soy-based insulation.

Their company, MyGreenBuildings, is trying "to prove that historic renovation can be done green," Castilow says. "What is green about knocking down an entire block of trees and building a brand new house?" Ellis and Castilow plan to do all their renovations within four miles of downtown Sarasota. Upgrading close-in neighborhoods with an eye toward goals like reducing car trips, Castilow says, is the difference "between real sustainability and green marketing."

That's the point raised by those who see some developers' shift to green building as "greenwashing" -- just another marketing ploy to sell more homes. At a sustainability conference held recently at UF, a longtime advocate named Ken Fonorow pointed out that a true green home would never have a pool, for example.

Lakewood Ranch, in Sarasota and Manatee counties, is full of pools, of course. So is it really green? Languell, the Naples civil engineer, says she considers green building most urgent for high-volume builders because they are responsible for some 95% of new homes in the U.S. Consider that one green-qualified home can keep 4,500 pounds of harmful gases out of the air each year. Now multiply that by the 15,000 green-qualified homes planned at Lakewood Ranch -- all of which were going to be built one way or another.

Whether Lakewood Ranch qualifies as green by the strictest standards, Sisum says, every little bit helps. "Just imagine if everyone in Florida made small changes," he says.

"It would be a different world."

#### **WEB EXCLUSIVE CONTENT**

As Trend launches its new website this month, look for new interactive features, including experts who will answer reader questions about stories in our print edition. This month, one of the national leaders in the green field, **Charles Kibert**, answers questions about green building. Kibert, a building-construction professor at the University of Florida, is the author of "**Sustainable Construction: Green Building Design and Delivery.**"

Send questions for Dr. Kibert to [Feedback@FloridaTrend.Com](mailto:Feedback@FloridaTrend.Com).  
Trend will post his answers at FloridaTrend.com.

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