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Going Green

Meet some of the forward-thinking organizations, in both private and public sectors, who are working their way through the learning curve of going green, and are reaping the rewards. Gail Borden Library in Elgin, The Arboretum of South Barrington, Other World Computing in Woodstock, Sho-Deen's Mill Creek in Geneva and Spring Creek Development Group in Rockford are among them.

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The Business of Going Green

By Randall G. Mielke

Contrary to Kermit the Frog's lament, nowadays it *is* easy being green, at least for some area businesses and public buildings.

The purpose of going green is to use products and methods that won't negatively impact the environment or deplete natural resources. The green benchmark for private and public buildings is set by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification program. The LEED certification provides independent, third-party verification that a building project meets the highest green building and performance measures.

Recent examples of local green building are plentiful. Gail Borden Public Library District, for example, has recently constructed a new 10,000-square-foot library branch, just west of the intersection of Bowes and Randall roads in Elgin, that incorporates many green aspects to gain LEED certification.

"How we impact the community is important," says Denise Raleigh, director of marketing, development and communications for Gail Borden Public Library District. "We want

to help in any way we can." The new building has geothermal heating and cooling; light sensors in rooms; overhang extensions, to create shaded areas; and windows placed to use the most natural light, among other green aspects.

Another example of a new building that uses green technology, this time in the private sector, is the headquarters of Other World Computing (OWC) in Woodstock, a company that provides Internet service, Web design and computer products.

According to Larry O'Connor, chief operating officer, the geothermal heating and cooling system is one of the best ways to incorporate green elements into a project.

Geothermal means "heat of the earth," and the geothermal



Denise Raleigh



Branch manager Margaret Peebles, along with assistant managers Susan Farnham and Angela Bouque, check out the new green-built branch of Gail Borden Library near Bowes and Randall roads in Elgin.

heating and cooling in the OWC building is similar to a home heating and/or air conditioning system. But unlike the standard system, which typically utilizes Freon or a similar refrigerant as a heat exchanger for heating and cooling an interior space, geothermal uses water for heat transfer.

The water is pumped into pipes set into the ground and continually runs from the building to the ground and back. If the water becomes warmer in the summer when passing through the building, it will give up that heat to the earth, 300 feet below the surface, where it is always 54 degrees Fahrenheit. If the water becomes colder after circulating through the heat exchangers, it is warmed when it passes through the earth, and brings that heat back to the building.

The process is continuous and is efficient because it doesn't need to compress refrigerants from gas to liquids.

"Geothermal not only saves energy, but also helps the air quality in the building," says O'Connor about the system in OWC's 37,000-square-foot headquarters.

Storm water management is another green aspect that OWC has incorporated into its building. The parking lot uses a system of interlocking porous pavers, resting on a multi-layer bed of crushed stones and gravel. Instead of forming puddles or running into sewer drains, water diffuses through the surface of the parking lot, slows the rush of water into the ground, and permits the surrounding landscaping to absorb the water as it's diverted toward the bioswales. Bioswales are gently sloped areas of the property designed to collect silt and other rainwater runoff. A combination of the parking lot's multi-layered bedding, which filters the water, and the design of the bioswale, eliminates the need for retention ponds.

In Loves Park, a new retail strip on East Riverside Boulevard may be the most energy-efficient, carbon-neutral



shopping center in Illinois. Spring Creek Development Group to rethink its approach to building the East Riverside Retail Center in Loves Park. Today, the center may be the most energy-efficient, carbon-neutral project of its kind in Illinois.

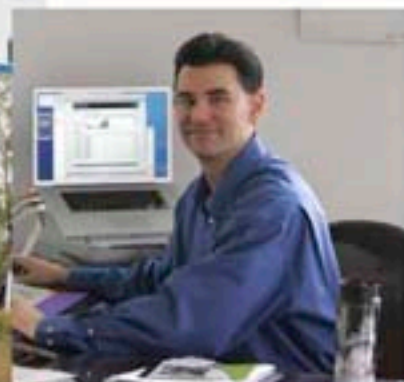
shopping center in Illinois. Spring Creek Development Group, Rockford, had planned a conventionally-built retail strip for the site, until global energy trends interrupted plans and sent it on a quest for green.

A steel shortage, blamed on consumption of goods by increasing affluence among consumers in the overheating economies of China and India, had caused steel prices to double, in a matter of weeks. That was, *if you could find steel to purchase.*

Then came the global oil crisis, which pushed gasoline prices to more than \$4 a gallon and left everyone at Spring Creek stunned.

"That was a shocking wake-up call for all of us," says Phillip G. Dean, a manager of the development company.

With steel and gas out of control, there were plenty of meetings at Spring Creek's offices, overlooking Anderson Japanese Gardens, Dean says, about how to interpret the messages the economy was delivering.



Larry O'Connor

The consensus: Go green. The development team decided to focus on two areas: energy conservation and renewable energy.

"The more we looked, the more we thought this made perfect sense," Dean says.

Architects were called in for a re-design. Wood replaced steel. Company employees went deep into their Rolodexes to find out about energy efficiency and geothermal systems, the alternative energy source they had decided to pursue.

Today, nearly three miles of pipe run up and down a series of 64 wells on the strip mall site, each more than 200 feet deep. They were drilled beneath what is now the building's parking lot. The pipes are connected to heat pumps inside the building. The heat pumps transform the earth's ability to store energy into winter heating and summer cooling for tenants. The geothermal component costs about \$725,000 more than a conventional rooftop HVAC system, but developers are betting it will pay off over the long haul.



Michael Jaffe



Green Without LEED

Some other area companies are utilizing green components, but are not necessarily seeking LEED certification. The Arboretum of South Barrington, a 600,000-square-foot lifestyle/retail center with an upscale mix of shops, restaurants and entertainment venues, integrates a storm water management system that's similar to OWC's. The center is a joint venture between The Jaffe Companies in Northbrook, Ill., and RREEF Alternative Investments, based in New York.

Three years ago, owner/developer Michael Jaffe and his team set aside 22 percent of the lifestyle center's 86 acres for a stormwater management/wetlands mitigation basin. Last summer, as contractors began planting 2,700 trees and 30,000 shrubs, perennial plants and grasses in and around the center, crews also began excavating the large 19-acre parcel on the northwest side of the property that now holds a 12-acre pond for stormwater management and wetlands mitigation. The pond

Bioswales at The Arboretum of South Barrington catch run-off water from the retail center and filter it before it flows into a pond.



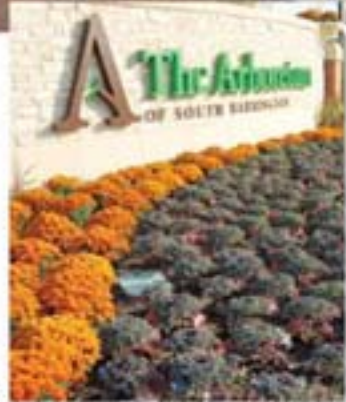
is fronted by two bioswale areas that catch run-off water from the retail center and filter it before it gets to the pond.

"We created a storm water management system with man-made filters, which filter out 99.7 percent of suspended solids prior to going back into the sewer system," says Aaron Gadiel, director of marketing and leasing for The Arboretum of South Barrington. "So we take the water, and before we send it back to you, we clean it."

The project in part illustrates Jaffe's sensitivity to the 4,000-acre forest preserve downstream from The Arboretum. The wetland mitigation basin "will almost become part of the preserve," says Lee Keenan of Wauconda-based Countryside Industries, the Arboretum's landscape contractor. Keenan notes that five or 10 years ago, new shopping centers generally didn't concern themselves with what was around them and how they affected the environment.

"And villages got so excited about the new revenue the centers would generate, that they didn't stop and think about the impact on the environment around the project. To me, it's being done very well here. The Arboretum is doing it the right way."

Another development utilizing a water management plan is Mill Creek, a community of 2,000 single-family and multi-family residences in Geneva. Developed by Sho-Deen Inc., a construction, management and land development firm in Geneva, the community spans more than 1,400 acres and is set





This aerial view of The Arboretum at South Barrington shows the large percentage of acreage devoted to responsible stormwater management.

amid an 18-hole golf course, a nine-hole golf course, numerous lakes, hiking trails and more than 45 percent open space. The original Mill Creek flows through the community.

For run-off and flood control, water is diverted to the wetland areas, through grass swales and natural waterways, which filter out silt and sediment before it re-enters the creek. Waste treatment and water reclamation are done on-site, and the recycled water is sent to aerated treatment cells for purification. The water is stored in reservoirs and used to water public areas and the golf courses.

Green Takes More Green

The down side of going green is that adding sustainable elements can be costly, at least initially.

"An older-style, 'non-green' building would have been cheaper in the short-term," says Raleigh about the Gail Borden branch. "It cost about 14 percent more to have all the green components, but we anticipate savings, depending on the energy prices, of 30 percent a year [at current prices] and water usage reduced by 30 percent."

Gadiel agrees.

"You are building at a premium, but the benefits are long-term," he says. "Developers are sometimes in and out of properties so quickly that they don't see the benefits."

The cost for OWC to go green was even more expensive, but O'Connor, the COO, plans to be around to see the benefits.

"It was probably a 30- to 35-percent increase in cost beyond a conventional building," he says. "It will be a 15- to 17-year return on investment. We're in our 21st year, with the intention of being here longer. This building should last 50 years."

Although the development wasn't seeking LEED certification, one of the stores of The Arboretum of South Barrington had a LEED-certified interior.

"One of our tenants, L.L. Bean, used recycled materials for its fixtures, and installed a white roof to reduce heat costs [and keep the store cooler]," Gadiel says. "The center of the store has glass at the top so there's more natural light coming in. They helped drive the idea for the entire center. It cost about 20 percent more to build that store."

Gadiel also acknowledges that the development probably cost about 20 percent more to incorporate the storm water management system and other green items like trees and native plants.

Spring Creek Development Group in Rockford knows the payback on its Riverside Retail Center in Rockford will be slow in coming. But it also knows it has cut heating and cooling costs by 60 percent and can offer tenants fixed, cheap, predictable energy costs.

"What we're attempting to do is create a little utility, where we provide heating and cooling that tenants purchase right here," says Dean. "It's a tiny energy company. We've created it to try to recapture some of the expense. When tenants take occupancy, we can guarantee what heating and cooling costs will be over the next 10 years. They're not at the mercy of other utilities."



The L.L. Bean store at The Arboretum of South Barrington incorporates windows near the top for natural lighting and a white roof that reflects heat. The store also used recycled materials to build its fixtures.



Incentives and Challenges

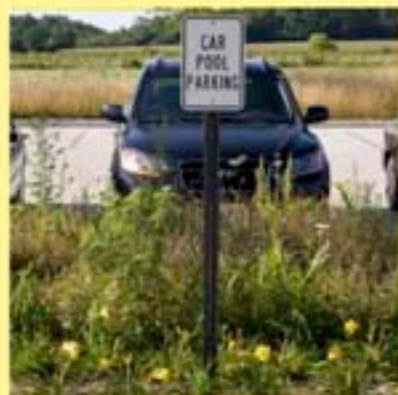
Some organizations try to offset the added cost of going green by obtaining grants.

"We received a \$60,000 grant from Illinois Clean Energy," says Raleigh of the Gail Borden project. "We used it for the geothermal system."

Nonprofit organizations and local government agencies may apply for grants from the Illinois Clean Energy Community Foundation. The Foundation, however, does not make grants to individuals or for-profit businesses.

OWC used its own money to finance the green aspects of the structure.

"We got local support in terms of exceptions and allow-



At Other World Computing, sunlight-filtering UV glass and sun shades (far left) shave heating costs by reducing the amount of direct sunlight that penetrates the building. The company offers car pool and fuel-efficient car preferred parking. Bike racks for those who wish to bike to work are available and native grasses are planted on the site to reduce run-off and conserve water. Ample recycling bins placed around the property make it easy to recycle. A permeable paver system allows rainwater to drain rapidly through a 36-inch crushed rock filtering system, reducing the amount of surface pollutants that enter the water table.

ances to do those things," O'Connor says. "For example, we got support in approving the use of pavers versus a retention pond. But we didn't have any grants.

"The No. 1 roadblock to going green is that it's tougher to get financing than for a conventional building," he continues. "When you go for a loan, the banks compare your building to other buildings in the area. So if a building of the same space as yours is \$1 million, your loan is \$1 million. But green details add cost. Our building had a standard commercial appraisal. Our bank was flexible with us, so we got financing for the building, but the cost of the green was out-of-pocket for us."

O'Connor hopes to get LEED-certification for the OWC building by the end of the year.

New Training, Old Ideas

Contractors and developers also face the added cost of educating employees and addressing other issues related to green construction.

"To go green, we had to push in that direction," O'Connor says. "Even our builder wasn't well-versed in it."

Bill Wilson, senior project manager for Shales McNutt Construction in Elgin, agrees that building green requires more from his workers.

"The biggest expense for us right now is to get key

“The No. 1 roadblock to going green is that it’s tougher to get financing than for a conventional building.”

– Larry O’Connor

employees LEED certified,” says Wilson. “For a building to be LEED certified, they usually want a LEED-accredited professional on site. We also have to look at areas like site management. We maintain the sites and we see to it that there is erosion control on the site. We also make sure that regional materials are used and that the recycled materials are in place. We do retrain employees a little, but after a couple of projects are under your belt, you’re used to it.”

Shales McNutt Construction has seen an increase in green work over the years. The company is currently constructing the Gail Borden branch.

“In the past year we’ve had five green projects that are either in progress or just wrapping up,” Wilson says. “Over the past two or three years we’ve had six or seven that were ongoing. Right now, I’d say 20 to 30 percent of our projects are LEED projects. Part of the reason for the increase in projects,



This new eco-friendly building at Judson University in Elgin was built by Shales McNutt Construction Co.

in the past year, is that costs are coming down. Manufacturers are providing products more economically.”

Spring Creek Development Group in Rockford found that its request for a geothermal-powered development caused a

back-to-the-books flurry for contractors.

Area Mechanical, which did the plumbing work on the retail strip, had never before worked with closed loop geothermal systems. Plumbers needed to learn special techniques to weld plastic pipes together. Architects and engineers had to learn the science and technology behind geothermal and energy recovery systems.

“Everybody who touched this project had to go back and learn a few things,” says Dean. “These are all green jobs and we had to learn things that we couldn’t do before.”

Although companies and employees have to adjust or retrain for green developments, the technology isn’t new.

“The technology has been around for 30 years,” O’Connor says. “It just hasn’t been utilized. Fifty years ago, when you were building something, you didn’t bring in things from a foreign country. You used a local supplier. That’s a requirement for LEED certification, to use local suppliers.”

Eco-friendly construction is growing. McGraw Hill Construction, publisher of *Green Outlook 2009: Trends Driving Change*, reports that between 2005 and 2008, green building

starts grew from \$10 billion to nearly \$50 billion. By 2013, the value could reach \$140 billion.

The Green Building Market Barometer by Turner Construction Co., one of the nation’s largest green buildings firms, says that green buildings have lower energy costs, lower operating costs and lower total costs over a 10-year span.

They cost more to build but are good investments due to:

- higher building values
- higher rents
- greater return on investment
- higher occupancy rates

More Benefits, Recommendations

The LEED certification also suggests that organizations offer an ongoing educational effort.

“It all goes to meeting LEED standards,” Raleigh says. “We’re a public body, so we weigh the cost versus the benefits. We’ve been here more than 100 years, and we want to be here another 100 years. We take our educational role seriously. We’ll have a wonderfully working branch of green concepts, and we want to help others to understand those ideas.”

When completed, the library branch will offer tours of the facility, to educate people on the green aspects of the building.

The best place to find out more about green developments is the U.S. Green Building Council Web site, www.usgbc.org, where a link provides information about LEED certification.

Despite the added expense, O’Connor recommends developing green structures. “Beyond being a part of conservation, there are also benefits to the work staff,” he says. “A lot of people like working for a company that uses conservation. But there’s also more natural light, and better air quality. People are happy to be here. Happy people are more productive, and they enjoy where they work.”

The Future

Although more companies are going green, Wilson doesn’t see the movement as a universal one.

“I think there will always be normal construction,” he says. “I don’t think going green will ever hit 100 percent, but in the future, 70 to 80 percent of buildings will incorporate green elements, in one form or fashion.”

Gadiel believes it’s just the right thing to do.

“It’s incredibly important that developers continue to look in this direction,” he says of green buildings and other green ideas. “Everyone must take a more global and long-term view of the world.” ■