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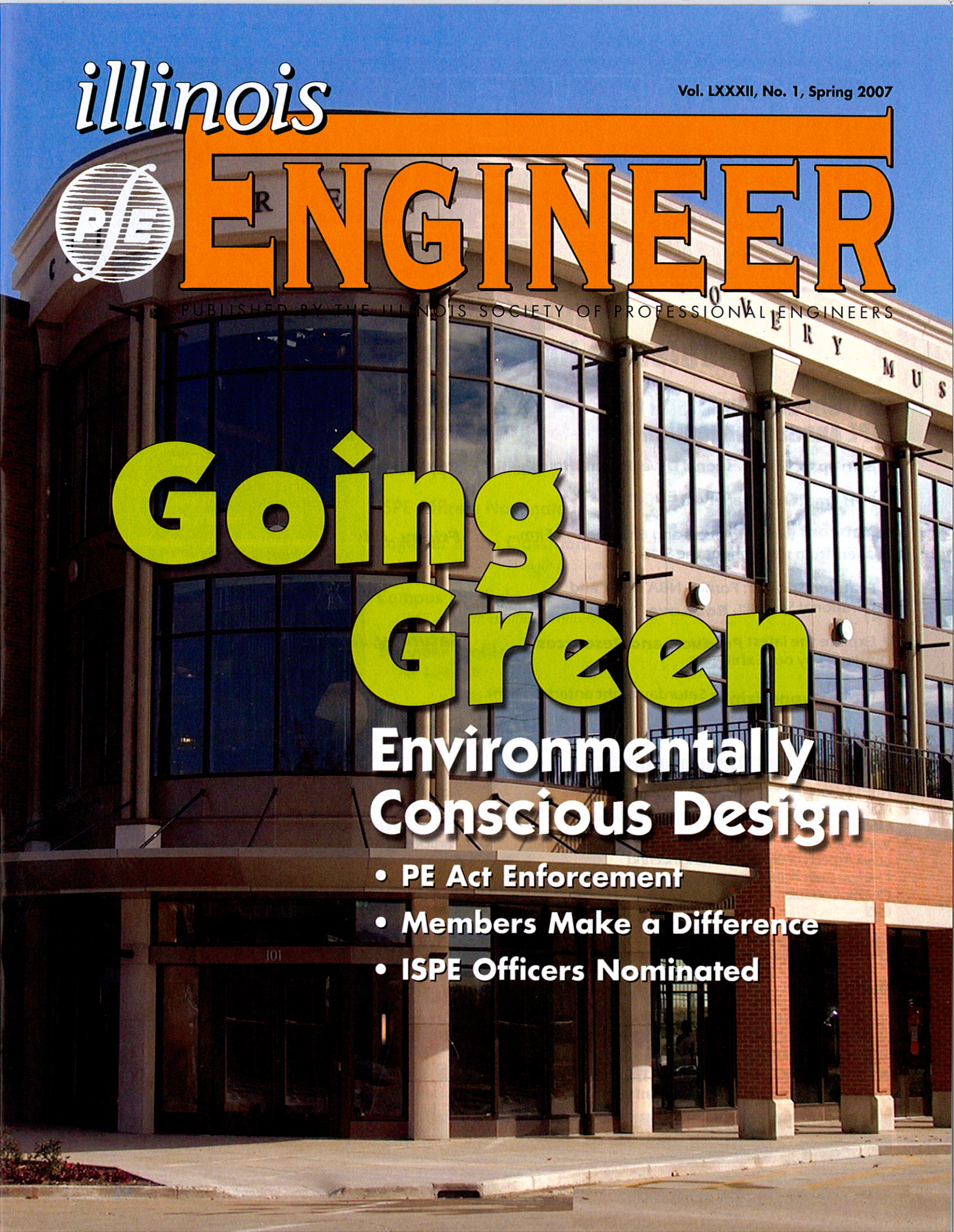
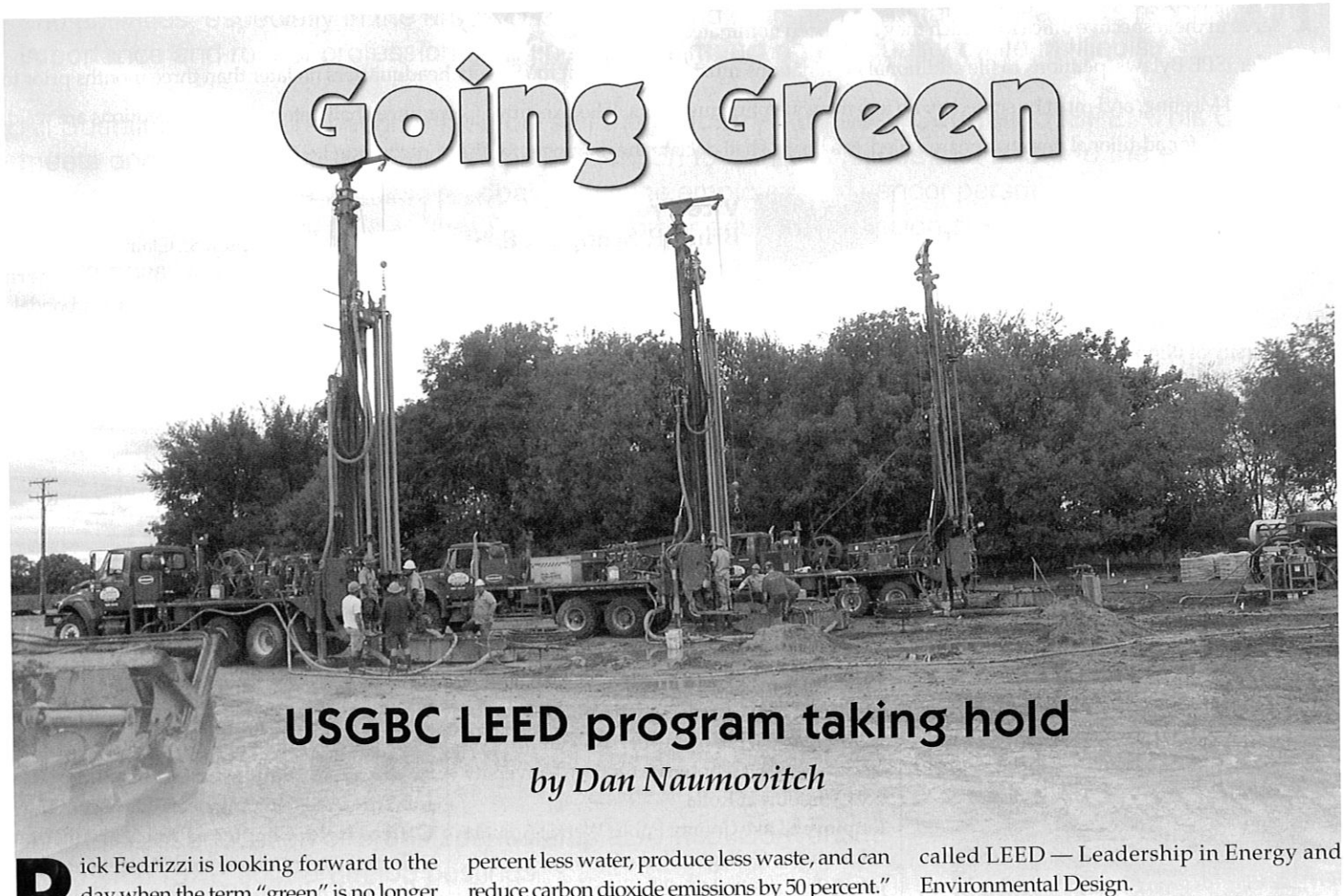


Going Green

Environmentally Conscious Design

- PE Act Enforcement
- Members Make a Difference
- ISPE Officers Nominated

Going Green



USGBC LEED program taking hold

by Dan Naumovitch

Rick Fedrizzi is looking forward to the day when the term "green" is no longer associated with the architecture, engineering, and construction industries. This might seem a strange wish given his position as the founding chairman and CEO of the U.S. Green Building Council (USGBC). But Fedrizzi doesn't want to see environmental-friendly building practices vanish into obscurity; he wants them to become so commonplace that green is just implied.

"USGBC's mission is market transformation," Fedrizzi stated recently. "Our goal is for green building practices and principles to become standard, mainstream practice."

While the green movement is often associated with uncompromising environmentalists, Fedrizzi says that green buildings provide real benefits to owners. "Green buildings consume 50 percent less energy, use 30 percent less water, produce less waste, and can reduce carbon dioxide emissions by 50 percent."

To achieve these goals, the USGBC, a non-profit organization, developed a building standard called LEED — Leadership in Energy and Environmental Design.

The USGBC describes the LEED system as a nationally accepted benchmark for the design, construction, and operation of high performance green buildings. The system is based on prerequisites and points that are awarded in five environmental categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental policy. Projects, which are registered online, are awarded a certified, silver, gold, or platinum rating depending on the number of points totaled out of a possible 69.

While the public is fascinated with such things as carpeting made with recycled plastic bottles and shingles made with old newspapers, engineers are doing the behind-the-scenes work that can take a project from silver to platinum. Stormwater management, erosion and sedimentation control, innova-

tive wastewater technologies, and site selection are among the areas where engineers figure prominently in the LEED standards. And of course electrical engineers are responsible for many of the energy-saving technologies such as the use of smart lighting systems.

In addition to certifying projects, the USGBC also offers professional accreditation to promote green building expertise in the industry. Alan Chalifoux, president of Eta Engineers and chair of the USGBC's Central Illinois chapter, says that the accreditation exam is challenging, but "if you've been to engineering school, then you're already used to taking tough tests."

More than 36,000 individuals have earned accreditation. In addition to promoting knowledge of sustainable design methods, the LEED designation is being used as a valuable marketing tool for professionals wanting to attract the growing segment of clients who want green buildings.

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Since the program was launched in 2001, 5,000 projects nationwide have registered to earn LEED certification, while 720 have earned certification. In Illinois, there are almost 90 projects currently underway that are registered with the LEED system, and 20 projects in the state have already been certified.

"Chicago is Illinois' leading municipality when it comes to LEED," says Rick Kerhlikar, PE, SE, chief structural engineer for Crawford, Murphy & Tilly,

continued on page 12...

Green Friendly Government *by Dan Naumovitch*

While Chicago is gaining fame for its rooftop gardens, the State of Illinois is taking steps to ensure that the state as a whole remains at the leading edge of sustainable design and construction. "The state, at all levels, is committed to green practices," says Lisa Mattingly, the Capital Development Board's (CDB) deputy director of professional services.

In January of last year, a law went into effect that charged the CDB, which oversees construction and renovation of state facilities, with incorporating green standards into their requirements.

The CDB has formed a Green Building Advisory Committee, chaired by Mattingly, made up of individuals from the engineering, architecture, and construction industry, along with representatives from the ISPE, ACEC, the City of Chicago, and various state agencies. The committee is responsible for developing and implementing within three years, guidelines and standards for green buildings built by the state.

In developing the guidelines, the committee must report to the legislature what the long-term savings will be by constructing more energy efficient buildings, along with any expected increases in initial costs. The committe will also determine which projects will be covered by the guidelines and whether any variances will be granted.

In accordance with the law, three pilot projects were selected to be constructed in conformance with green guidelines. Although language specifying LEED as the state standard was removed from an earlier version of the bill, Mattingly said the CDB decided it is currently the best option for the pilot projects. "What we found looking at other states and municipalities is that this (LEED) is the most widely recognized standard and so right now, this is what we are going with," says Mattingly, a LEED-accredited professional engineer.

The three pilot projects that were selected are the Integrated Post-Harvest Processing Center at the University of Illinois at Urbana-Champaign, the Transportation Education Center at Southern Illinois University at Carbondale, and the replacement of the Stratton Building, a state office building in Springfield, a project that is still in its early stages.

The CDB has already conducted a series of nine workshops targeted at state agencies and other interested parties throughout the state to increase awareness of green building techniques and green rating systems. They will next conduct an education and advocacy campaign that will target the users of the state's guidelines, including engineers and architects.

Although the state will mandate green standards on at least some their building projects, Mattingly believes that the move is being driven more by the marketplace. "People are concerned with rising energy costs and they want healthier work environments and that's what will keep the green movement moving forward.

Continued from page 11

Inc., "and the state of Illinois is among the top 10 states in gross square footage of green buildings."

In 2004, the City of Chicago passed a resolution requiring LEED certification for all new city-funded construction and major renovation projects. This followed a similar initiative in Cook County two years earlier.

Chicago is home to Illinois' only two LEED platinum-certified buildings. The Chicago Center for Green Technology and the renovation of the Center for Neighborhood Technology have both earned the coveted status.

The green movement has made its way south as well. The Town of Normal passed an ordinance in 2002 requiring LEED certification on specific new projects, both public and private, that are constructed in the town's Central Business District.

The town currently has one LEED-certified building that has been completed. The Children's Discovery Museum earned a Silver rating from the USGBC.

Mercy Davison, the town planner, says that one of the major benefits of going green with the museum is the recognition the community is receiving for "doing the right thing" in regard to the environment.

For many, doing the right thing for the environment is one of the best ways to do the right thing for our children. "It's also fantastic for parents to know that their kids are playing in a facility that isn't off-gassing toxic chemicals," Davison adds.

The green movement isn't being propelled exclusively through government initiatives. The private sector is getting onboard as well, for reasons that are both environmentally conscious and economically sound.

"With energy, water, and people costs at an all-time high, we can sell to people's bottom line," Fedrizzi says. "When environmental factors start dipping into people's pocketbooks, that can be a huge motivator for change."

Wal-Mart, an organization not often associated with progressive environmental practices, but certainly one concerned with the bottom line, spelled out some aggressive environmental goals for their company in 2004.

The world's largest retailer committed to reduce energy consumption in stores by 30 percent in four years, reduce solid waste by 25 percent in three years, and align 20 percent of their supply base with eco-friendly product lines in three years. A performance measuring report is expected in the spring of this year, and early indications are that Wal-Mart is making significant progress toward their goals.

Last year, Wal-Mart experimented with green-friendly technologies in two stores, testing the efficiencies of such things as wind power, pervious pavements, waterless urinals, and LED lighting. On January 18, of this year, Wal-Mart opened its first High-Efficiency Supercenter in Kansas City, Missouri. The store will use 20 percent less energy than a typical store. A similar high efficiency store will open in Rockford in March.

Although Wal-Mart did not seek LEED certification, they did acknowledge that the USGBC's guidelines were embodied in their testing efforts. Some involved in green construction, however, have less amicable reasons for bypassing LEED. Among other concerns, critics charge that because all points are weighted equally, the system invites design teams to go for the easy, inexpensive points while foregoing the more complex measures that would yield a more significant environmental benefit.

One practical rather than philosophical area where engineers have found LEED standards to be lacking is airside facilities at airports. While airport buildings such as terminals and hangars are covered by existing standards, airports aren't able to earn certification points for sustainable elements incorporated into the design of runways or access roads.

Tim Kiefer, who has worked on many LEED projects as director of commissioning for Farnsworth Group, believes that critics should take into account how the system has evolved since its inception in 2001, and give the USGBC credit for kick-starting the green construction movement in the United States.

"I applaud them (USGBC) for putting something out there and getting this going," Kiefer said. "And I applaud them for continuing to revise the system based on the experiences of designers and builders."

Chalifoux agrees that LEED isn't a passing fad, "More and more clients are asking for it. It's here to stay."

Soon those clients won't be exclusively from the commercial sector. In July, the USGBC plans to release a rating system for the residential market. They are predicting that by 2020, LEED for Homes will have certified 10 million homes.

Whether LEED remains the standard for leading the green building movement remains to be seen. What does seem certain is that the type of sustainable design that LEED promotes is becoming more and more accepted, and expected.

Last month, President Bush released an executive order that includes green building strategies for new construction and major renovations of federal agency buildings. Last summer, Brad Pitt took time out from his schedule to chair a jury for a sustainable design competition for affordable green housing in New Orleans. This combination of government mandate and appeal for popular support is a good sign that green construction is about to hit the mainstream. ■