



Going Green

Environmentally friendly building is good for workers, too

by Jason Sweet

Reliable sewer maintenance, abandoned landfill monitoring, or construction inspection aren't the kind of features that get first billing when Madison, Wisconsin – the quintessential college town – appears on those annual “best places” lists. But for City of Madison engineering staff, it's these and a range of other less-than-glamorous tasks that not only keep city infrastructure going, but also keep those who live and work in Wisconsin's capital safer and healthier.

Four years ago, the City of Madison released “Building a Green Capital City,” a report that laid out sustainability goals for future municipal projects. Around this time, the go-ahead had been given to design and construct a new facility to house City engineering staff. City engineer Larry Nelson saw the new Engineering Services Building (ESB) as an ideal opportunity to put green building concepts into practice. He and his staff wanted a facility that could be certifiable under the standards of the green building rating system known as LEED (Leadership in Energy and Environmental Design). These standards were established by the U.S. Green Building Council, a nationally recognized non-profit organization dedicated to sustainable building practices.





City engineering staff work on the south side of Madison at the end of a short dead-end street. With more of an industrial edge to it than other areas of the city, the street seems a long way from the majestic Capitol building downtown or the lakeside vistas along the University of Wisconsin campus. Before the renovation and construction of the ESB in 2006, the office space for engineering staff was also ... less than glamorous. Kathy Cryan, engineering operations manager, recalled the faint taste of diesel fuel in the air on winter mornings in the old facility, which was a sheet metal addition to a vehicle storage building. The facility was not energy efficient. Work space was crowded. Cryan put it bluntly: "It wasn't a good work environment for any of us."

The memory of those times is now as far away as the former facility's ceiling tiles, which, because of the building project's green goals, were sent to the new ceiling tile's manufacturer for recycling. That's just one of dozens of environmentally conscious steps that went into the planning, design, and construction of the new ESB. Local business owners are pleased with the city's decision to implement such an ambitious – and ultimately beautiful – project in their neighborhood. City staff now work in an energy-efficient, spacious work environment. And City officials can stand behind a project that makes a bold statement: Madison is committed to being a steward of the environment.

City staff and officials first learned more about green buildings and office spaces. They attended training sessions on sustainability, traveled to cities such as Chicago to see examples of green design, and visited local office buildings that had adopted LEED techniques. One of these buildings was Ayres Associates' Madison office, which was designed by Ayres Associates architects.

"That building had a big influence on us," Nelson said. "They obviously weren't just talking about sustainability. They were practicing it themselves." Nelson and other City staff were impressed with the building's open spaces and windows. "We were really taken with how they addressed the lighting issue, incorporating as much natural light into the building as possible," he said. The City ultimately chose Ayres Associates to design the ESB.

Ayres Associates' Bob Brown, the ESB project architect, explained that the site itself was quite restrictive. "Parking and the vehicle storage garage occupy a large part of the site, so we had just a sliver of land to build an addition on," he said. The design included remodeling the existing space of the original building for locker rooms, restrooms, and a





lunch room. Ayres Associates also designed the 12,000-square-foot two-story steel-frame structure addition. Through a space needs analysis and the subsequent application of space-saving techniques, the design roughly tripled the work space.

The City takes particular pride in the site's stormwater management plan. Protecting area lakes from harmful stormwater runoff is a priority. Given the progressive Dane County Erosion Control and Storm Water Management ordinance adopted in 2002, City engineering staff looked to the ESB as a chance, as Cryan put it, "to be leaders in the community in terms of innovative approaches to stormwater management." Nelson added, "We've actually treated this building as a demonstration project for stormwater management."

Stormwater quality structures remove 80 percent of post-construction total suspended solids, a result achieved through a series of clever designs, including a rain-absorbing green roof system, an on-site rain garden, a storm sceptor (which traps debris and separates it from runoff water), and an underground cistern able to hold roughly 12,000 gallons. The treated stormwater collected in the cistern is pumped into trucks and used to clean City sewers, reducing the amount of potable water needed for this work.

Ayres Associates municipal engineer Jason Lietha provided design consulting on the stormwater portion of the project. "This is a great example of a site plan that's more than a site plan. The City and Ayres Associates got creative and put their heads together to come up with a design that's not only economical but also environmentally conscious," Lietha said.

A major misconception the City confronted during project planning was related to cost. "When we initiated this project there was this belief that you couldn't do green without spending a lot more money," Cryan said. By the project's end, however, "we proved you could build a very green building economically, if you planned appropriately," she said.

The experience of the ESB project has led Nelson to conclude, "If you don't have a green building, it's my belief you have an obsolete building" – an attitude reflected in the evolving City position on LEED standards. The City Council recently adopted a resolution that will now require the City to pursue LEED Silver certification for all new building and major remodeling projects – another step forward on the road to making Madison a green capital city. ■

