ISHE ISSUES 10.17.08

Hospital addition seeks to preserve natural setting, achieve LEED certification

Also inside: Dashboard Technology Simplifies Reporting & Improves Efficiency

Indiana Society for Healthcare Engineering

Hospital addition seeks to preserve natural setting, achieve LEED certification

The designers of a 42,100-square-foot addition to Woodlawn Hospital will seek Leadership in Energy and Environmental Design (LEED) certification from the U.S. Green Building Council by preserving and integrating natural wildlife surrounding the hospital, following energy-saving building practices, and focusing on indoor air quality and sustainable design concepts to create a healthy environment for patients and staff.

The addition complements the aesthetics of the existing hospital. The combination of an energy efficient envelope with high-performing glass allowed designers to maximize natural daylight while also reducing energy costs.

Architecture and engineering design firm BSA LifeStructures was careful to preserve the natural beauty of the site and expand upon it to create a truly comfortable environment for healing and care giving to take place. All patient rooms in the 25-bed critical access hospital overlook a 33-acre wooded lot, which includes an existing winding nature path that offers patients, their families and staff a place for quiet respite. A rooftop staff retreat also offers an enjoyable place for a short respite.

The addition creates a new entrance for patients; a new registration area and a concourse connects the addition to the existing building, giving patients, staff and family easier access to the hospital's various departments. The addition will house a new emergency department, laboratory and imaging expansions, cardiopulmonary and rehabilitation space, a pediatrics department, and family practice offices, all of which are currently located off-campus.

"Many hospitals have to recreate nature to provide a 'healing environment,'" said BSA LifeStructures' project architect Jeremy Welu. "At Woodlawn Hospital, we have focused our design efforts on preserving a site that was already naturally beautiful and create new ways to encourage patients and staff to interact with it."

"The building's systems will run more efficiently, which creates a more cost-effective facility," said Sam Reed, president of BSA LifeStructures. "The energy savings and reduced impact on the environment will be communicated to patients and staff through various design elements throughout the hospital."

The Woodlawn Hospital addition is expected to be completed in the fall of 2009. In addition, 9,540 square feet of the existing hospital will be renovated. That portion of the project is expected to be complete by early 2010. BSA LifeStructures is providing architecture and engineering services, and Maregatti Interiors is providing interior design services.

For more information on green building design and LEED certification, go to www.usgbc.org.

BSA LifeStructures' architects, engineers, designers and planners work throughout the United States to create solutions for healing, learning and discovery facilities. For more information on BSA LifeStructures, visit its Web site at www.bsalifestructures.com.

BSA LifeStructures™

Quick Facts:

- Currently, Woodlawn Hospital is 66,650 square feet. The addition will add 42,100 square feet, and an additional 9,540 square feet of the existing building will be renovated. The total building after construction will be 108,760 square feet.
- The total projected construction cost of the addition and renovation is $10.6 million.
- The project will expand surgery, emergency, cardio-pulmonary, rehabilitation, laboratory and diagnostic imaging departments. New medical office space will also be added.

Dashboard Technology Simplifies Reporting & Improves Efficiency

Imagine pressing a single button to gather historical data that can guide future healthcare engineering decision-making … or getting instant notification when a system goes down … or monitoring all mechanical systems in your hospital from a single screen.

New "dashboard" technology — available today — can make these scenarios a reality in your healthcare facility. Similar to the at-a-glance look at vehicle performance delivered by a car's dashboard, this technology allows engineers to track and create reports on a variety of environmental conditions — including temperature, humidity, energy, and relative pressure — from a single location.

The costs of compliance — and noncompliance

The U.S. Joint Commission's Environment of Care standards (EC.9.10) require healthcare organizations to track and report on a range of conditions from fire alarms to HVAC systems. The standards were created to help hospitals provide the healthiest, safest environment for patients and staff.

Unfortunately, according to a recent benchmark survey, many hospital engineers feel overwhelmed by the sheer volume of information they're collecting, and unsure how to best address regulatory requirements. One Wisconsin hospital estimates it has up to 10 full-time employees reporting to 32 organizations, including monthly Joint Commission submissions. Tracking care environment conditions manually can also actually increase the potential for human error. And even small reporting errors can have large financial implications.

Although the Joint Commission has no authority to levy direct fines, failure to meet its standards during a survey can result in loss of accreditation — which can mean losing millions of dollars in Medicare and Medicaid payments.

The cure for compliance headaches

Dashboard technology painlessly automates the process of gathering a credible body of environmental data. Healthcare engineers can ensure accuracy while reducing reporting staff. The dashboard approach also accommodates multiple audits, and allows for quick and easy data retrieval and formatting.

The system was created by a major supplier of heating, ventilation, and air conditioning (HVAC) equipment. It responds to the need for simpler ways to monitor and report critical hospital utility systems such as emergency generators; heating, ventilating and air conditioning; and medical gas.

Systems are monitored in all critical areas, such as emergency rooms, intensive care units, and surgical suites. And hospitals of all sizes can take advantage of the dashboard system; it's customizable to meet varied reporting and tracking needs.

The dashboard itself is an intuitively organized screen that requires minimal training for easy interfacing. It displays data from wireless sensors on each critical building system component, monitored via a building automation system.

This efficient, convenient technology helps the user collect, analyze, and report on utility systems performance and environmental conditions data required for the Joint Commission audit and for other regulators. These data include

- Management of temperature and humidity
- Air exchange rate
- Air balance
- Energy management

Supporting business goals

Today's healthcare engineer is responsible for much more than simply making sure that building equipment stays up and running. You're a valuable business partner, with the power to boost your organization's bottom line by improving energy efficiency and optimizing system performance. Dashboard technology can make those tasks easier and more transparent to your management, while helping you provide added value to your organization.

In our cost-conscious healthcare environment, you've got to link the healthcare facility's function to the healthcare organization's core business goals. For example, when one target is to minimize waste, you need validated data showing how improving HVAC system efficiency helps support this aim.

The dashboard amasses information that translates easily into the financial language that management understands. For instance, collect and analyze historical humidity control data in the surgical suite. Then use that information to make informed decisions on system upgrades, based on quantifiable metrics. After the upgrades, you'll be able to trace and demonstrate the improvements and cost savings afforded by the new system.

Enabling healing environments

The dashboard eases compliance reporting and makes your job less difficult. And the advantages don't end there.

Automatically gathering utility system data can help improve system efficiency and healing environments. You know when pressure changes in an isolation room. You gain the ability to track temperature and humidity in the surgical suite. You maintain a firmer grasp of conditions throughout the hospital. You're better able to provide a truly optimal environment of care.

Everyone from the healthcare engineer to the technician to the infection control nurse can benefit. Advanced dashboard technology can track and trace systems information to support decisions throughout your organization. In the process, you minimize time and money spent on accreditation reporting, while staff members stay focused on their number one priority — patient care.

For more information, contact: Dave Sommer, Vice President, Trane in Indiana, phone: 317-255-8777 or email: DASommer@trane.com.

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