

T E X ★ S Hospitals

Published by the Texas Hospital Association • March | April 2006

Del Children's Medical Center

Taking Green Building to Highest Level BY SUE DURIO

In a city like Austin, known for protecting the environment, it might come as little surprise that a major hospital project would invest in green building.

But for its new Dell Children's Medical Center, underway at Austin's former airport site, the SETON Family of Hospitals is taking green building concepts to an entirely new level in health care construction. When completed in spring 2007, the 470,000 square-foot facility is likely to become the first LEED Platinum health care project in the United States, and one of only a handful worldwide.

WHAT IS LEED?

The United States Green Building Council developed the Leadership in Energy and Environmental Design or LEED rating system as a national standard for green building design. Under the voluntary LEED rating system, building projects earn credits for satisfying specified green building criteria. Projects are evaluated within five environmental categories:

- sustainable sites,
- water efficiency,
- energy and atmosphere,
- materials and resources, and
- indoor environmental quality.

Certified, Silver, Gold and Platinum levels of green building certification are awarded based on the total credits earned.

GETTING STARTED

Dell Children's spans 32 acres of a total 750-acre tract formerly home to Robert Mueller Airport. "These kinds of properties don't come along very often in an urban environment," said Alan R. Bell, AIA, director of design and construction with SETON Network facilities.

The City of Austin and area neighborhoods wanted green building incorporated into the site's redevelopment – and set a minimum standard. "You don't just jump into the LEED program lightly," he said. "From the beginning, you have to make a decision that this will be a goal, because every decision has to abide by the LEED standards. It is critical to get buy in from the executive team and administration that this is a good thing to do."

The planning process began in 2002, about a year before putting any designs on paper, recalled Steve Zilles, project architect with Ohio-based Karlsberger Architecture. Early on, the SETON project team recognized the need for green building education and brought in consultants and USGBC staff to conduct seminars. "Prior to this, none of us had been involved with green building projects to this extent, so it was a challenge at first," said Phillip Risner, P.E., network engineer/senior project manager for SETON Network facilities. As the primary point person for LEED, Risner himself became a LEED Accredited Professional joining some 23,100 other building industry professionals to have earned the accreditation.

INCORPORATING GREEN ELEMENTS

To achieve the coveted LEED Platinum rating would mean seeking out LEED points in every facet of the project. However, Bell said, the team wanted to make decisions that made sense economically as well as environmentally. "While LEED has certain guidelines for achieving points in the various categories, we decided that every selection had to have at least an eight-year payback," he added.

Some of those smart environmental/economic selections were:

Natural Light – A hub and spoke design incorporates seven interior courtyards that bring natural light throughout the building. The courtyards represent the ecosystems found in the hospital's 40-county service area, and place natural light sources within 64 feet throughout the facility. "In addition, the courtyards are a great way-finding tool for young patients who can't read signs yet, and provide a place for families to relax and preoccupy themselves," said architect Zilles.

Less Cement – One of the team’s goals was to reduce cement use, which creates carbon dioxide and contributes to the greenhouse effect. Instead, they substituted fly ash [a coal combustion product] for a portion of the cement, pouring 41,000 cubic yards of the fly-ash concrete on the foundation and walls.

Reuse – Instead of removing and dumping asphalt from the old airport runways, general contractor White Construction opted to grind up 35,000 tons of asphalt and reuse it on the muddy job site as stabilized base for parking areas. Reusing the asphalt generated LEED points for recycled materials.

Healthy Interior – The hospital gained LEED points for healthy interior selections, such as paints and adhesives with low or no volatile organic content. For example, most of the flooring is natural linoleum applied with green label adhesives. In carpeted areas, flooring contractor Intertech Flooring chose carpet with recycled content and backing made of recycled soda bottles.

Energy Onsite – Austin Energy is completing an onsite 4.6 megawatt heating/cooling plant that will produce steam and chilled water efficiently, as well as generate seven to eight LEED energy points. “It would take a catastrophe to lose power at this facility,” said Bell.

Water and Energy Conservation – Bell concedes it is difficult for a hospital to achieve much water conservation because of cleanliness requirements. But dual flush toilet valves and motion sensors that automatically control water flow will reduce water usage by 30 percent.



In the administrative areas, under-floor air ducts run below 18-inch raised-access flooring for more efficient air circulation. Exhaust heat recovery, high performance glazing, daylighting and occupancy controls should reduce energy consumption by more than 10 percent.

Job Site Recycling – Approximately 70 percent of construction waste is being recycled through the project's aggressive recycling program, which designates different types of dumpsters for dry-wall, stone, wood/paper, general trash and so on. "This is something that's gaining momentum, but is still relatively new in the building trades," said White Construction Senior Project Manager Alan Harbert. "There are some additional costs that you don't traditionally have, but there also are some rebates for recycling."

CHOOSING SUBCONTRACTORS

White met with bidders during the bid phase to outline the aspects of LEED and what would be expected of them. The green building requirements were part of the bid document, and subcontractors were evaluated on their green building experience. "It's important to choose a team with experience, and an innovative attitude, a passion about what they are doing," said Risner. Some, like Intertech Flooring, even participated in the LEED Accredited Professional training.

A required safety and green building orientation for all contractors is followed by weekly safety meetings incorporating recycling and green building. "We've had great buy-in from the trades. I'm amazed as you walk around the site at how workers use the recycling bins," said architect Ziller.

THE COST OF GREEN

Before embarking on a green building project, Bell advised to prepare financially. "This is not necessarily the cheapest way to build," he admitted. He recommended planning for an additional two to five percent in construction costs – up to six percent for LEED Platinum certification.

"If you do it right, though, you'll pay back those additional costs through lower water usage and less electricity," he said. "And, the fact is, people want to be in healthy buildings. It's easier to recruit medical staff. It's easier to retain staff. And, it makes your facility more competitive in a competitive health care market." ★

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For more information or to monitor construction progress, visit the Dell Children's Web site at childrenshospital.com/buildingforthefuture.



GREEN BUILDING RESOURCES

City of Austin Green Builder Program

<http://www.ci.austin.tx.us/greenbuilder/> – even if you're not in Austin, this site is a fantastic source of green building tips and advice.

U.S. Green Building Council

www.usgbc.org

Green Guide for Healthcare

www.gghc.org – the health care sector's first quantifiable sustainable design toolkit for green building

ASHE Green Healthcare Construction Guidance Statement

www.healthybuilding.net/healthcare/ASHE_Green_Healthcare_2002.pdf – comprehensive checklist of green design and construction goals and strategies developed by the American Society for Healthcare Engineering.

Green and Healthy Buildings for the Healthcare Industry

www.healthybuilding.net/healthcare/Vittori_Green_and_Healthy_Buildings.pdf – article by Gail Vittori of the Center for Maximum Potential Building Systems on planning for a green health care facility.

The Healthy Building Network (HBN)

www.healthybuilding.net – national network of green building professionals and others interested in promoting healthier building materials as a means of improving public health and preserving the global environment.