A Building With a Message: Part III

Fashioning a health sciences center that represents the best that sustainable design can be—in a place and at a scale to make the community take notice.

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The transformation to sustainability is continuing at the University of Texas (UT) campus in Houston. This third in a series of articles picks up a little more than a year later on the progress of the School of Nursing and Student Community Center, a 190,000-square-foot addition to the Health Science Center complex. As previously reported, an ambitious initiative is underway at UT to include environmental strategies in its core business and establish a model health sciences university for the 21st century with sustainability as one of its priorities.

The project is well underway with occupancy scheduled for late 2003. The obstacles to success, though seemingly overwhelming at times, have been largely overcome, beginning with an initial struggle to convince a skeptical board of regents in oil-friendly Texas that environmental initiatives were a worthy goal. That battle won, in large part through the persistent tenacity of UT vice president John Porretto, efforts next centered on building community and user support. A town hall meeting, structured to carefully listen to the concerns of each constituency, garnered broad acceptance. Additionally, escalating costs in the Houston area and the inability to adjust the budget upward necessitated finding smarter ways to accomplish the project's goals. However, solutions were found to bridge the gap between the program and the budget through innovative design and trimming the fluff. For example, administrative areas that were encumbering the budget were eliminated, resulting in a first-class academic facility that benefits the students and the faculty rather than the bureaucracy.

Sustainability has been a top priority for BNIM Architects in designing and constructing the School of Nursing and Student Community Center for the University of Texas, a project that is aiming for the gold LEED™ rating.

The next setback occurred in June 2001 when Houston suffered 25 inches of rain in a very brief period of time. The city had about $4 billion worth of flood loss as a result of the storm, and the university experienced losses in excess of $100 million. This prompted a re-evaluation of the design to insure that the elevations were at or above the 500-year FEMA flood plain designation. Brian Yeoman, assistant vice president for facility planning and campus development for the university, remembers the tremendous devastation that this storm wreaked on the Texas Medical Center. "We were well above the 100-year flood point, which we thought was ample protection, but what this flood told us was that we needed to elevate even farther."

Yeoman credits his design team—Berkebile, Nelson, Immenschuh, McDowell Architects (BNIM) of Kansas City—with keeping the delays this setback might have caused to a minimum. "It cost us about $200,000 and three weeks in the schedule to make the changes, but we had a design team who got even more clever in solving the problems and further refined what we understood to be some good responses to the sheeting of water and the natural systems' abilities to deal with water on this scale."

The design team faced other challenges during the design development phase in trying to meet the performance goals set by the university—issues related to such things as site development, natural ventilation, daylighting and user-controlled thermal comfort. BNIM's Jason McLennan

The architects describe this building as a 100-year facility, one that is flexible and adaptable over time so that there's minimal waste and minimal churn expense as the building progresses and ages gracefully to the century mark and beyond.

remembers doing a lot of modeling and analysis in order to help hone the envelope, glazing and the fenestration design and seriously looking at material selection to assure they were meeting their targets for the gold LEED™ rating the project is aiming for. Similarly, they strove to far exceed common green building standards in water use, energy reductions and recycled content. (LEED or Leadership in Energy and Environmental Design is a product of the U.S. Green Building Council and is a widely accepted rating system for the design and construction of environmentally responsible buildings.)

The team would actually like to be going for a higher platinum rating, and Yeoman laments the few million dollars they are short for accomplishing that goal. "Going into the design development process we were very fearful about what would hold up through the costing and were gratified that so many of our ambitions held," he says. "However, if we had a spare couple million bucks we'd get some renewable energy grants and we'd get LEED platinum." Also on his wish list is a living machine, a water purification system that uses plants and sunlight to treat wastewater to be reused for non-potable uses. While its inclusion isn't possible at this time, the architects have taken a long-range vision of what this building needs to be throughout its entire lifetime and have designed systems capable of accommodating pioneering technologies if grant monies become available. The architects describe this building as a 100-year facility, one that is flexible and adaptable over time so that there's minimal waste and minimal churn expense as the building progresses and ages gracefully to the century mark and beyond.

This longevity pledge is part of a larger set of principles established by the client that are, in their words, non-negotiable. Another that has guided much of the design development is the phrase "light belongs to the people," coined by Brian Yeoman. "It is," he says, "a statement of our commitment to the idea of fairness. It doesn't matter where you are in the organization, you have certain inalienable rights to a quality work experience and a quality interior environment that includes access to views and to daylight. We're trying to give people the things that not only make them productive but help to maintain their health and well being and help them have a good time while they're working here."

Naturally following on the heels of such an egalitarian approach is the concept that the occupants who are actually going to be using the building be intimately involved in its planning. First, contrary to common practice, the building was designed from the inside out, with user needs trumping all other considerations. A meeting was held where people were given a "toolkit" of sorts with some preliminary ideas, concepts, some materials and furnishing suggestions to consider and do their own planning. The result is a much more informed occupant who understands the process, the issues and the consequences of the decisions that were eventually made.

The progress of the building is having an impact on people in the design and engineering communities who look at

Houston, in essence, as a sin city second only to Las Vegas, NV, in poor air quality and high building operating expense, etc. *On Earth*, an NRDC publication, featured an article recently called "The Silent Treatment" about the very close relationship between the petrochemical industry and the medical industry and the rate of cancer that exists in the Houston area. UT believes that its initiatives are changing some minds as well as fostering interest in sustainable, integrated design in the region. The School of Nursing and Student Community Center has as its central theme a deep commitment to the notion that there is an inextricable link between the built environment and health. There's also an RFQ out right now to build an Institute for Molecular Medicine, a $120- to $200-million project. The university has received 17 proposals—at least 15 of which are from the world's leading sustainable design firms—and many of them have partnered with either Houston or Texas-based architects and engineers who want to gain knowledge and experience.

Promoting environmental education is more than just a casual offshoot of the project. It's deliberate and well planned enough to be one of the innovation credits that the team will submit as they go for their LEED rating. Yeoman and all those involved are justly proud of their accomplishments and are eager to share their story. They are fashioning a building that does represent the best that sustainable design can be, and they're doing it in a place and in a style at a scale that is sufficient to make the design community take notice. The real story is about a team of individuals who share common principles, values and objectives and who insist on a building that is a unique response to a university's needs and to environmental responsibility. @

SEVEN GUIDING PRINCIPLES

The University of Texas-Houston uses Seven Guiding Principles that incorporate The Natural Step thinking as well as LEED™ and other sustainable design strategies. These will shape all aspects of design and construction on the campus. Design teams are required to integrate these principles.

- Conserve natural resources.
- Strive for a climate neutral building.
- Create places of health and well being, while promoting the "inalienable rights" of people.
- Design with flexibility for 100 years of occupancy.
- Pursue integrated design solutions.
- Promote beauty and pedagogy.
- Promote fairness and efficiency in meeting programmatic and human needs.