

Turning Green into Gold

June 16, 2010

As our corner of the world faces its share of environmental threats, among them the tragic oil spill in the Gulf of Mexico, we wonder what we can possibly do. You only have to glimpse the video footage of millions of gallons of oil gushing forth daily and images of seabirds struggling in the marshes to feel that some circumstances are simply out of our control. It's true we can't just rush out and magically fix the riser pipe to stop the flow. But we can make sure we don't lose sight of the impact we make on our surroundings closer to home, here on our health-care campuses.

Consider our recent building boom, and our plans to grow our infrastructure over the next few years. We are working hard to make our buildings environmentally responsible. We want our labs, our hospitals and our classrooms to have a minimal effect on the land, the air, the water. We want to save money by operating facilities more efficiently. And the good thing about all this? When you consider these factors you actually build a better building for the patients we treat and for the people who work here.

At UF and Shands, our commitment to building sustainable facilities was wonderfully and appropriately recognized this past week, with the news that the Shands Cancer Hospital, which opened Nov. 1 last year, was the first hospital in the Southeast to be awarded Leadership in Energy and Environmental Design (LEED) Gold Certification from the U.S. Green Building Council for its environmental and energy-efficient features. Only four hospitals in the entire nation are currently Gold LEED-certified and fewer than 100 nationwide have any kind of LEED certification. On the heels of this announcement, on June 10th the Biomedical Sciences Building, which we dedicated last month, also received the good news that it, too, is Gold LEED-certified, the first biomedical laboratory in Florida to achieve this designation.

What is LEED certification? It's a four-tier system that rates response to environmental challenges such as responsible use of resources, pollution reduction and making indoor spaces conducive to good health and well-being. Buildings earn Certified, Silver, Gold or Platinum ratings based on sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Certification criteria for health-care facilities also include increased sensitivity to chemicals and pollutants, traveling distances from parking areas and access to natural spaces.

Efforts to build green are rapidly expanding on campuses across the country, and the University of Florida is the national leader in this effort. Last week, it was reported that based on 2009 data from the Council, UF leads in the number of LEED registrations, edging out Harvard University, the University of California at Santa Barbara and the University of Washington. The university adopted LEED criteria for design and construction for all major new construction and renovation projects in 2001, and the campus boasts the first LEED Platinum- and Gold-certified buildings in the state. Eighteen are certified in one of the LEED categories, four have been submitted for certification, two affiliated facilities are listed and 21 are registered.

In addition to the Cancer Hospital and the Biomedical Sciences Building, our health campuses have a number of other certified facilities, including the Cancer & Genetics Research Complex, the Orthopaedics and Sports Medicine Institute, the Veterinary Medicine Food Animal Facility and the UF Dental Clinic in Naples. Meanwhile, the Veterinary Education and Clinical Research Center and the Emerging Pathogens Institute are pursuing certification, and the planned Sun Terrace Expansion, the International Parkinson's Disease and Movement Disorders Center and the Institute on Aging/Clinical and Translational Research Building were registered this year. See <http://www.facilities.ufl.edu/sustain/> for project stats.

Now let's return to the Cancer Hospital. When Flad Architects set out to design it and Skanska embarked on building it, the goal was to create a highly efficient facility that provides a soothing healing environment. Sustainability-focused features of the project included a demolition waste-management process that recycled 96 percent (by weight) of the materials from an existing hotel and parking structure cleared from the site. The team focused on minimizing the use of volatile organic compounds. We used low VOC-emitting adhesives, sealants, paints, wood products and carpet systems throughout the interior to maintain a high-quality indoor air environment. We also incorporated specific building orientation, solar shading, high-performance glass, and energy transfer wheels, sensors and controls to optimize energy performance. In a number of areas the hospital's design actually exceeds LEED requirements.

The project's most significant sustainability feature is Gainesville Regional Utility's South Energy Center, an onsite, stand-alone, 4.3-megawatt facility that supplies all of the hospital's energy needs independent of the city's energy grid. Designed and built by Burns and McDonnell under contract with GRU, the South Energy Center is one of a very few combined heat and power plants in the Southeast. It efficiently converts fuel into electricity, providing 46 percent savings compared with traditional fossil fuel-burning generation. The level of efficiency is achieved, in part, by capturing the hot exhaust from the turbine and using it to produce steam that is then used to run the hospital's heating and cooling systems. Officials estimate this will save 27 million kilowatts per year, enough to power about 3,000 homes. The onsite power plant will ensure uninterrupted power regardless of a prolonged outage elsewhere in the community.

In addition, insulated windows are treated to reduce solar glare and white rooftops reflect heat. The facility's air-conditioning heat wheels help recover lost energy and irrigation and drainage systems use reclaimed water. Employees who bike to work can shower on-site and those who drive hybrid cars can park in specially designated spots.

Design decisions also factored in patient comfort. Nursing and medical staff provided input to incorporate features such as nurse stations that improve sight lines to patients and monitoring systems and details that give patients control of their environment, allowing them to adjust lighting and window shades with the click of a remote. There is abundant natural light on each floor and hallway lights are wall-mounted or recessed so patients aren't subjected to blinding glare as they are wheeled from place to place. Some studies have even indicated that design improvements can improve patient outcomes, although more research still needs to be done.

Then there is the 163,000-square-foot Biomedical Sciences Building, which houses researchers from the colleges of Medicine, Engineering, and Public Health and Health Professions. This

brand-new building also features numerous environmentally friendly components. The project included a standby power plant that can provide power equivalent to that needed for 600 average American homes; 34,000 gallons of environmentally friendly wall paint and 920 gallons of low-emission flooring adhesive were used; 50,000 square feet of "green" carpet tile were installed; and 3,265 tons of material was diverted from landfills — the equivalent of 204 fully loaded garbage trucks. Researchers and students say the new building's pleasing indoor environment lit by large windows helps them work and learn better. The facility was designed and constructed by HuntonBrady Architects, Ellenzweig Consultants, Affiliated Engineers, Walter P. Moore Engineers and Whiting-Turner Construction Management.

Finally, the pièce de résistance is the Clinical and Translational Research Building, which includes the Institute on Aging. This 120,000-square-foot building, to be constructed on the site across from Wilmot Gardens on Mowry Road, is being designed to exceed Platinum LEED certification. When we applied to the NIH for a construction grant to build the Institute on Aging (Marco Pahor, M.D., principal investigator), our plans to seek LEED platinum certification complemented the strong programmatic objectives of the project and were met with great enthusiasm by the reviewers. This project was scored in the 2nd percentile among 973 applications, resulting in a \$15 million award from the National Center for Research Resources for a 40,000-square-foot building. Subsequently, to create an academic home for clinical and translational science, a plan evolved to add 80,000 square feet to encompass the CTSI headquarters, the Clinical Research Center, faculty members working in biostatistics, epidemiology, health policy, and health services research, and clinical research programs such as those focused on type 1 diabetes and muscular dystrophy. The steam discharged from the adjacent cogeneration plant, most of which now escapes into the environment, will be captured to power the Clinical and Translational Research Building. In addition, innovations such as green roofs for stormwater management, rainwater harvesting, occupancy sensors throughout the building, an accessible roof garden, energy-efficient materials and equipment, and solar hot water generation will create the first "carbon neutral" building in the region.

When it comes down to it, sustainability simply makes good sense. We are part of something bigger. We must live and work in a way today that improves our ability to live and work successfully tomorrow. Let's all take responsibility for doing our part to build a better tomorrow right here.

Forward Together,

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