

A Sustainable Center

A \$3 million renovation earns LEED Gold status for a landmark Indiana Tech building.

By David Wellman

There are a lot of LEED-certified buildings around these days. According to the U.S. Green Building Council, which created the Leadership in Energy and Environmental Design program back in 2000, the total floor area worldwide that was LEED-registered and -certified as of 2009 topped seven billion square feet. And even in the midst of one of the worst construction downturns in memory that year, registrations and certifications continued to rise versus 2008. So if you wanted to find a LEED-certified building, chances are that you wouldn't have to travel very far.

Now, pre-Civil War-era LEED-certified buildings, those are just a bit more rare. But one can be found in Indiana on the campus of Indiana Tech in Fort Wayne. Last December, the USGBC awarded LEED Gold Certification to the college's Wilfred Uytensu, Sr. Center. Built in 1857, the Uytensu Center is the oldest building on campus and in fact predates the university's occupation of the site. It was originally built as an administration building for Concordia Seminary.

Not only is it the oldest building on campus, "but it's the only building left



from before about 1990," says Director of Marketing Janet Schutte. "It's a very recognizable symbol for older alumni." So, rather than demolish the deteriorating landmark, the university embarked on a \$3.1 million renovation to preserve and modernize the building.

The school tapped hometown firm



Viridian Architectural Design, Inc., to plan out the challenging renovation. Viridian President Terry Thornsby says the university was interested in making the building more energy-efficient and thus less expensive to operate from the start, but the involvement of Indiana Tech President Arthur Snyder took things to a new level.

"Dr. Snyder isn't the type to start something without understanding it, so he went and did his own research," Thornsby, a

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LEED Accredited Professional himself, recalls. "By our third meeting, he was telling me things about sustainability. So before I did the proposal I said we are going all out."

To help fund the renovation, the university approached Wilfred Uytengsu, Sr., a 1951 graduate of Indiana Tech who had gone

*In the end, the new Center earned **65 points** in six different categories under the USGBC's LEED 2009 version 3 Building Design and Construction Green Building Rating System, including:*

Sustainable Sites: 13 points by minimizing the impact on the site and minimizing the heat island effect of the roof

Water Efficiency: four points by reducing water usage by 23 percent compared to American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards

Energy and Atmosphere: 27 points with a high performance building envelope insulation system enhanced commissioning, a closed-loop geothermal system, and high efficiency LED lighting; over 43 percent more efficient than the ASHRAE 90.1-2007 standard.

Materials and Resources: five points by diverting more than 80 percent of the construction waste from the landfill, using recycled content material, and reusing hardwood and brick from the original building.

Indoor Environmental Quality: 12 points through the use of low VOC products and materials, MERV 13 filtration systems, and user friendly HVAC and lighting controls systems.

Innovation in Design: four points through exemplary performance throughout the rating system, a highly-effective building envelope design and verification system, and employing a LEED Accredited Professional in the project.

on to a long a successful business career in the Philippines. In March of 2010, Uytengsu donated \$2 million toward the project, marking the second-largest gift ever made to the university. An additional \$1.34 million was secured from the U.S. Department of Energy. That grant allowed the university to partner with Fort Wayne-based WaterFurnace International on the installation of an innovative geothermal heating and cooling system for the Center.

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The building is **99 percent electric** and has an operating cost of \$385 a month for 11,500 square feet. The Uytengsu Center costs just **41 cents per square foot** to operate.

Another local company, Michael Kinder & Sons, Inc., was brought in as general contractor to orchestrate what boiled down to a complete gutting and rebuilding project inside four original walls. The project "absolutely required an integrated design approach," Thornsbury says. "We had 10 people and the owner had six at every meeting. We had


to make sure that we and the contractor had it all figured out."

Work began in September, 2009. "We took it down to the brick walls and dirt – no roof, no floors – and put in an all concrete and steel interior," Thornsbury says. The four-foot crawlspace beneath the Center was excavated to nine feet to accommodate the new mechanical

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system, while heat pumps for the geothermal system were hidden in the ceiling. The third floor of the building, which hadn't been used since the Sixties, was opened back up to recoup office space that would be lost to a new Campus Welcome Center on the first floor. Ceiling height was increased to expose the top two feet of the nine-foot windows on one side of the building, which had been cut off in a previous remodel. Existing walls were better insulated through the use of foam to fill cracks in the brick, and in some spots old, bricked-up entrances were reopened.

A priority was placed on reusing materials from the site, including wood and brick from load-bearing walls that were removed. Some of this was reused in the building, while some was used for other purposes. For instance, pieces of the Center's pine trusses were made into duck decoys that the school subsequently gave away. Materials that were still usable but weren't going to be reused were donated to Habitat for Humanity. In the end, 81 percent of the material removed from the Center was diverted from landfills.

As the project went on, the plan to apply for Silver LEED status started to change color. "We ended up getting into gold," Thornsburry says. "We had not planned for that."

Based on an ROI analysis of the project, the savings from a more efficient use of energy in the building will pay for the cost of the renovation in just under 10 years.

"The building is 99 percent electric and has an operating cost of \$385 a month for 11,500 square feet," Thornsburry says. "According to the Commercial Buildings Energy Consumption Survey, the typical office building costs about \$1.25 to \$1.50 per square foot to operate and a vacant building will still cost about 29 cents per square foot. The Uytengsu Center is at 41 cents per square foot to operate."


HANDS-ON LEARNING

Not only has the renovation given Indiana Tech a leading-edge green administration building, it's also provided a hands-on learning opportunity for students. "We have an energy engineering degree, so it gives our students a living project to work

on," Schutte says. Sensors in the building provide continuous feedback on energy usage, which Viridian is tracking as well. "We get to play with this for five years, so both we and the students can figure out how to make buildings even better," Thornsburry says.

Sadly, the one person who won't get to see the fruits of the project is Wilfred Uytengsu, who passed away unexpectedly just a month after giving the university the \$2 million gift that made the renovation possible. "It saddens me that Mr. Fred was taken from his family too soon, that he did not live to accompany them here to see what his philanthropy has brought to Indiana Tech," President Arthur E. Snyder said in addressing about 300 people gathered for the dedication.

Uytengsu's wife, Bonnie; his children Candace, Michael, and Fred Jr.; and grandson Christian attended the dedication ceremony. In his remarks at the dedication, Fred Uytengsu, Jr. said he was certain his father would have been happy with the renovation and that the scope of the project had exceeded their expectations. ♦



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