

THE LIST

ADVANCED ENGINEERING CONSULTANTS

LEED renovation project more costly, but boost to firm's image incalculable

BY JEFF BELL

It was a given that Advanced Engineering Consultants Ltd. would pursue LEED certification when it undertook renovations of the 13,000-square-foot office building off Dublin Road that it has called home since November.

Such was the case, said Advanced Engineering founder and President Lisa Huang, because the sustainable building design principles promoted by LEED - Leadership in Energy and Environmental Design - are at the core of her engineering firm's practice. It became just a matter of what level of certification to pursue - not whether to do it at all - when Huang and her team of engineers and designers began working on plans for the firm's new headquarters building at 1405 Dublin Road in 2012.

"We apply sustainable design to whatever project we do," she said, pointing to a long list of public- and private-sector projects that have driven the 49-employee firm's steady growth since Huang founded it in the basement of her home in 1998.

Following their own advice

Many of those projects, including ones for the city of Columbus, Central Ohio Transit Authority and state and federal agencies, have received LEED certification. Advanced Engineering's headquarters project joined the list in March when it achieved LEED Gold status from the U.S. Green Building Council, a nonprofit organization based in Washington, D.C.

"We wanted to use this opportunity to demonstrate we are fully committed to sustainable design," Huang said. "We wanted to show our clients that our own office is a LEED Gold design."

Advanced Engineering had about 15 employees when it moved into 7,000 square feet of office space at 1310 Dublin Road six years ago. It outgrew that space because of double-digit sales gains and an expanding list of projects for government, education and health-care clients, prompting the move across Dublin Road to the larger, two-



JANET ADAMS

Advanced Engineering President Lisa Huang is proud of her office's LEED Gold renovation. Above, light tubes in the ceiling focus sunlight that travels into the building, making it brighter. Above right, LED lights and recycled flooring in the lobby.

story building along the Scioto River.

LEED Gold is the second most stringent standard of the four certification levels in the green building program. Advanced Engineering had to amass at least 60 points for design features such as site sustainability, water and energy efficiency, recycled and reused materials, indoor environment quality and innovative design. It takes 80 points to achieve Platinum

certification, the council's top designation.

Doors as drafting tables

Huang was like a proud parent when she recently led a tour of her firm's new home office. She was quick to point out that doors once used to subdivide the building into offices for its three previous tenants were recycled and now serve as drafting tables used by her firm. It was one part of a process in which 90 percent



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ADVANCED ENGINEERING CONSULTANTS' OFFICE

1405 Dublin Road,
Columbus

System: LEED-NC v2009

Points: 61

Level: Gold

Square feet: 13,000

Project: Renovation

of the materials in the renovation were reused or recycled.

Huang also was enthusiastic about the building's lighting features. Chief among them are solar light tubes installed throughout the second floor to provide natural light in the building and energy-saving LED lights in the parking lot.

Advanced Engineering also took the extra step of putting an energy-saving thermal film on the inside of windows that were in good enough condition to be saved. Most of the building's plumbing was replaced with the new fixtures incorporating water-conserving features such as low-flush volumes in toilets and urinals.

The building's heating and cooling system was revamped with energy savings in mind, Huang said. The replacement system uses variable-refrigerant-flow, advanced air-to-air heat pumps in a network of

interconnected units throughout the building. Each unit serves a relatively small area and provides independent temperature control. The interconnected system allows excess heat removed from one part of the building to be reused in another area.

Cost vs. savings

Advanced Engineering has calculated the LEED Gold design will result in a 32 percent energy savings, lowering the firm's heating, cooling and electricity bills for years to come. But the LEED certification process has its challenges, starting with the cost. Achieving Gold status added about a 20 percent premium to a renovation project that ended up coming in around at \$650,000, Huang said.

The extra costs include certification fees paid to the U.S. Green Building Council and added expense of materials such as the thermal window films, solar light tubes and LED lighting.

There is also extra staff time needed for the LEED application process, energy modeling, selection of building materials and other tasks.

"The staff time is a considerable expense," Huang said. "We spent a lot of time figuring out which (LEED) points are worth pursuing. ... Our goal is a design that minimizes cost but still produces a maximum-performing building. That's the challenge."

Advanced Engineering has estimated the green building features at its home office will pay for themselves within eight to 15 years. It is also pursuing energy-saving rebates offered to businesses by American Electric Power Company Inc. and federal tax credits for energy-saving building improvements.

Huang cited the benefits of what the building design will do for worker productivity and the firm's image in the eyes of its clients and business prospects.

"We wanted our building to look good," she said, "and we wanted to create a pleasant place for our employees so they can work efficiently. Some of them have said this is the best place they've ever worked in."

Jeff Bell is a freelance writer.