

ENERGY EFFICIENCY:

Experts say green construction will 'change the face of commercial real estate'

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When Akridge was asked to build one of the most sustainable office buildings in Washington, D.C., the local commercial real estate developer had never worked on a green property before. The year was 1992, and few companies were experienced in "green construction."

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Today's popular certifications for environmentally friendly buildings -- Energy Star and LEED (Leadership in Energy and Environmental Design) -- wouldn't be developed for at least seven more years.

AAAS building

The headquarters of the American Association for the Advancement of Science in downtown Washington. Photo courtesy of AAAS.

Nevertheless, the American Association for the Advancement of Science, one of the world's largest scientific societies, wanted a cutting-edge building for its new headquarters, and Akridge agreed to take on the project.

With the help of an architecture firm, the 12-story building began to take shape on the corner of 12th Street and New York Avenue in Washington's business district.

Workers installed an air-conditioning system with natural-gas-powered chillers and ventilated the building using variable-speed drive fans -- unusual features that significantly lowered energy consumption. A "gray water" system was added to recycle excess rainwater from the roof, so it could be filtered and reused in the building's toilets and plants.

When construction was completed in 1996, the overall design didn't look especially innovative from the street. However, a close inspection revealed deep cuts and hollow spaces carved through the building's exterior, which allowed sunlight to reach the structure's core and reduced the need for artificial lighting.

"Stuff that has basically become standard in the green market is stuff that we were doing back then," said Greg Tomasso, Akridge's vice president of leasing. "There were budget overruns at the end, but everyone was satisfied and happy to spend the extra money."

Pioneering a green niche

They were so satisfied that the company's founder, John Akridge, decided to keep pushing for green innovation in more of his commercial buildings. Nearly two decades later, Akridge has become a leading developer in Washington, with 21 of its 28 properties recognized by Energy Star and 13 certified by LEED.

In 2009, the American Association for the Advancement of Science headquarters became the first existing building in the city to receive a LEED Gold certification from the U.S. Green Building Council. And, despite being built in the mid-'90s, the structure consumes nearly 50 percent less energy than a typical commercial building of the same size.

Over the past 10 years, hundreds of real estate developers have followed the same path as Akridge, which has led to more than 26,000 buildings' earning a LEED or Energy Star certification since 1999. According to the experts, this move toward green design is beginning to make sense for more companies, and it's expected to keep growing.

"This is going to change the face of commercial real estate," said Cliff Majersik, an energy efficiency advocate and executive director of the Institute for Market Transformation. "We're not there yet, but you can extrapolate from the current trends and see we're headed there pretty fast, because that's what the tenants want."

Utility bills are not only lower in these buildings, but studies have shown that occupants are also more comfortable. Working in a well-designed office that is evenly climate-controlled increases employee productivity, which leads to huge financial gains for a large company, Majersik said.

"Even a very small increase in productivity is far more valuable than the money they spend on rent. When those benefits are so much bigger ... it's an easy decision to choose a high-performance building."

Banks want in

A 2010 survey, conducted by CoreNet Global and Jones Lang LaSalle, found that half of corporate real estate executives were willing to pay more to lease space in a green building, compared with only 37 percent just one year earlier. According to Majersik, companies nowadays can't get financing to construct a new building if it's not going to be green certified.

"Banks don't want to finance it," he said.

John Akridge

John Akridge. Photo courtesy of Akridge.

With federal and state legislators pushing for increasingly stringent building codes -- the latest model code requires buildings to be 30 percent more efficient than 2006 standards, though most states have yet to adopt it -- the decision to go green from the beginning can prevent potential headaches down the road ([ClimateWire](#), Jan. 12).

Considering the commercial building sector is responsible for nearly 20 percent of the country's greenhouse gas emissions, it also makes for good publicity when companies lower the carbon footprint of their properties.

"What better way to market than by doing the right thing?" asked Tomasso of Akridge. "It's not only being responsible but providing a positive marketing punch."

Some state and local governments have taken the additional step of requiring commercial buildings to disclose their energy use online, so people can compare properties' efficiency before deciding whether to buy or rent a particular building or office space. These new laws have been adopted in New York City; California; Washington, D.C.; Austin, Texas; and Washington state.

With an additional 10 states considering similar legislation, commercial developers are feeling increased pressure to build toward maximum efficiency. In some cities, up to 75 percent of new commercial construction is now green, according to Chris Pyke, vice president for research at the U.S. Green Building Council.

"We're nowhere near where we want to be with new buildings, but the consciousness has really gotten out there in the last decade," Pyke said. "Sustainability and green buildings are becoming synonymous with high-quality assets. It's expected to be well-run."

Pyke added that he has also seen a "critical shift" into greening existing properties in the past three years. Considering these outdated buildings are responsible for nearly one-fifth of the country's energy use, upgrading them will be essential for cutting greenhouse gas emissions.

Traditionally, upfront costs have been a huge barrier for owners seeking to retrofit a building for better efficiency, but a growing number of people are deciding it's an investment worth making; others are finding that, after energy savings, the improvements weren't so expensive after all.

Getting to payback quickly

The software company Adobe Systems spent \$1.4 million to implement more than 60 energy-related upgrades at its headquarters, Adobe Towers, in San Jose, Calif. Some of the buildings' improvements included motion sensors to turn off lights and air conditioning in unoccupied areas, and every urinal was replaced with a waterless model. When the renovations were completed in 2006, each employee consumed an average of 35 percent less electricity, and more than 3.5 million gallons of water was conserved per year. In the end, the upgrades saved Adobe \$1.2 million annually, according to U.S. EPA.

In other words, the renovations paid for themselves in a little over a year.

Energy upgrades under way on the Empire State Building in New York City are predicted to have similar results, cutting electricity use by 38 percent and providing a return on investment in about three years, thanks to \$4.4 million in annual electricity savings.

Majersik calls buildings like these "untapped gold mines of energy savings," and owners are gradually starting to understand the business case for investing in costly renovations.

There are still significant obstacles that stop some building owners from doing retrofits, such as leases in which tenants pay all the utilities -- and therefore reap all the monetary savings from upgrades -- leaving landlords with no incentive to invest in energy efficiency. It would take other buildings nearly a decade to see a return from retrofits because of the way they were initially built.

Still, Majersik says the commercial real estate industry is already coming up with solutions. And he expects it won't be long before green building becomes business as usual.