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City Takes LEED in Green Buildings

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San Diego officials want to save some green by making the city's new buildings green.

The San Diego City Council decided earlier this year that municipal buildings should meet the silver level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.

The LEED system provides a common standard of measurement for how green, or environmentally sustainable, a building is. The U.S. Green Building Council promotes sustainable building design and construction.

The silver level of LEED is the second of four certification levels. To earn the designation, buildings must earn at least 33 points out of 69 in the categories of sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental air quality, and innovation and design sign process.

The city's new main library branch, planned for Downtown, as well as various library branches and fire stations, will be among the first buildings in the county to meet this green standard.

The city will apply the standard to all new municipal buildings and all remodeling projects larger than 5,000 square feet.

After Phoenix-based CCBG Architects Inc. completed plans for a new fire station in San Ysidro's historic district, designers were asked to revise their ideas to meet LEED requirements.

“We scrambled a little bit, but it should have the silver level,” said Darrold Davis, managing architect for CCBG's San Diego office.

The station went from masonry and wood construction to steel, because wood is generally not a renewable resource, Davis said.

When wood is used, LEED requires a percentage of it must be from renewable sources, such as bamboo and cork, which grow back in just seven years. CCBG incorporated some of those materials into the interior of the San Ysidro fire station.

The project now has windows that allow for more daylight, so electric lights aren't needed as much. Efficient electrical and heating ventilation and air conditioning systems were also included, along with heavier insulation.

“I think we're putting in better products that cost the owners more money,” Davis said.

The revisions probably increased construction costs by about 10 percent. However, the city stands to save money over the life of the building, Davis said.

The city estimates LEED-certified buildings will probably cost 10 to 13 percent more to build, but the difference is expected to be earned back over a three- to five-year period because of the buildings' efficiencies. Buildings certified at the silver level typically use 20 percent less electricity and water annually.

New city buildings will use about 35 percent recycled products. Items that can be recycled, such as doors and ceiling panels, will be reused whenever possible. Water use will be cut by landscaping with less-thirsty plants.

Nontoxic construction materials should improve indoor air quality.

New Standard

Before LEED, there was no way of measuring how green a building was, according to Alison Whitelaw, president of San Diego-based **Platt/Whitelaw Architects Inc.**

Whitelaw said LEED is still a new concept in San Diego County. There are not many buildings in the county with LEED ratings yet, but several have applied for certification, she said.

"The U.S. Green Building Council has really made this a market commodity," Whitelaw said. "Clients now have a way of expressing that they want a green building."

Also, she said, with the residential construction industry booming nationwide, developers are realizing they can integrate LEED principals into their homes as a marketing angle. However, a rating system hasn't yet been developed for houses.

Research into LEED principles is important for making the program work. Whitelaw said research has shown that using daylight increases retail sales by 40 percent in shopping centers and test scores by 20 percent in schools.

Energy efficiency is only one benefit. Productivity increases in LEED-certified buildings and people don't get sick as often, Whitelaw said.

During a Nov. 12 meeting of the Urban Land Institute's local chapter, Whitelaw said out of a building's total cost, 2 percent is for design and construction, 6 percent is the operating cost and 96 percent is for maintenance.

Whitelaw was the lead architect for the renovation of Ridgehaven, the city's Environmental Services Department building in Kearny Mesa, which the city purchased for $3 million in 1994. The three-story, 73,000square-foot building's $3 million renovation was completed in 1996. It was an experiment in green design, before LEED's rating system was developed.

After the renovation, Ridgehaven's monthly utility bill was $3,750 compared to $10,750 at a similar building next door. Changes included the addition of anti-solar window film and highly efficient water pumps and heating, ventilation and air conditioning systems.

The building's new lighting system amounted to a 52 percent reduction in energy use for lights.

San Diego Gas & Electric Co. has a program called Savings by Design that rewards building owners and designers for the type of energy efficiency addressed by LEED.

Chuck Angyal, chief architect of new construction energy efficiency programs for SDG&E parent company **Sempra Energy Utilities,** said Savings by Design looks at three systems - the building's envelope (doors, windows, walls), lighting, and heating, ventilation and air conditioning systems.

"We try to get them to look at all three things simultaneously," Angyal said.

Representatives from Savings by Design try to get involved in projects as they are being created.

"We don't try to come in when they're under construction or (creating) construction documents," Angyal said.

For building owners to earn incentives from Savings by Design, a particular building system has to be at least 10 percent better than state buildings codes require. Or, the entire building must be at least 10 percent more efficient. The owner can receive between 6 and 10 cents per kilowatt hour saved per year.

For the design team to receive an incentive, the entire building has to be 15 percent more efficient than building codes require. Designers receive 3 to 6 cents per kilowatt hour saved.

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