



The Renaissance Tower, completed in 1989, is one of only two multitenant buildings in the world to have a Platinum LEED rating.

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# Facility engineers gear up to manage green buildings

## Job for property managers goes high-tech to increase efficiencies

MICHAEL SHAW | STAFF WRITER

While giving a tour of the climate control system in the belly of the 28-story Renaissance Tower in Sacramento, building engineer Rich Williams noted pencil marks scrawled on a set of dials of the massive chiller system.

That's how the cooling level used to be set. If the outside temperature hit a certain mark, say 90 degrees, the pencil mark told workers where to set the dial.

The marks are still there, but the control system is far more advanced after the office tower became the second multitenant building in the world to achieve a Platinum rating for energy efficiency last year. A computer now decides when to start up and is constantly fine-tuning the results.

"This new system can learn," Williams said, extolling the virtues of energy management hardware installed by Johnson Controls Inc., which adjusts for optimal performance according to inside and outside temperature. Williams also must be prepared to take control of the system, according to tenant requests or when things aren't running as they should.

The job for property managers and building engineers is changing with the new emphasis on efficiency and conservation — including the need for familiarity with new software and control systems and the ability to perform routine energy audits. It's like going from a typewriter to a laptop, experts say.

"Most buildings are trending this way," said Jennifer Lauritzen, senior project manager at HMM Builders in Sacramento. The company built the highly energy efficient Natomas Gateway Tower, a 12-story office building near Interstate 5. "If you're meeting California code, you are already taking a step toward LEED." That's the Leadership in Energy and Environmental

Design program — the generally accepted "green" rating system for buildings, along with another rating system called Energy Star.

The LEED program is administered by the U.S. Green Building Council, which also hands out the LEED Accredited Professional credential, which is becoming increasingly important in the construction industry. That program has a credential specifically meant for people who run buildings.

Lauritzen, an accredited professional herself, said that HMM trains the managers and engineers when they turn buildings over to the new owners, which can be a month-long process.

And for professionals who want to get LEED certified, it's a major commitment.

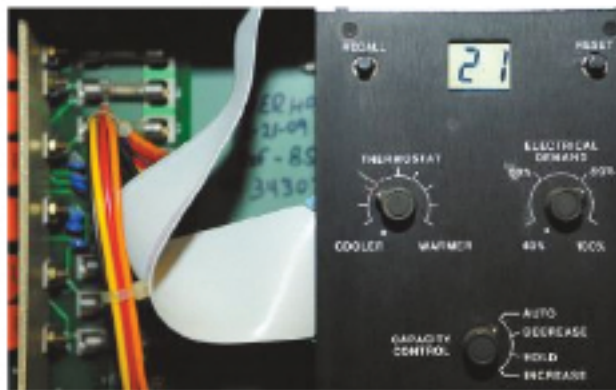
"It's not a fun program," said Nancy Cook, property manager for Jones Lang LaSalle at the 925 L office building in Sacramento. "It's a lot of studying. But it makes you understand better why you do these things." She's now a LEED accredited professional and the building last year attained the gold level under LEED following extensive upgrades.

Cook and building engineer Mike Ryder researched available technologies for a plan to improve energy consumption, getting help from the Sacramento Municipal Utility District.

"If you're changing the chiller system, you don't want to put in something that's five- or 10-year-old technology," Ryder said. They discovered they could cut their air-intake fan speed to 70 percent without any ill effects; a water meter system gives them more accurate picture of usage and where to conserve. The building now has a 97 Energy Star rating, which rates efficiency on a scale of 1 to 100.

Advanced control systems don't necessarily make life easier as the new controls are anything but set-and-forget. Ryder said running it on "auto" isn't as efficient as having workers fine-tune it daily.

In February, about 700 people gathered



The climate control system at the Renaissance Tower in downtown Sacramento helps the building engineer by automatically adjusting to inside and outside temperatures.

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at the top floor of the Natomas Gateway for a charity event and broadcast of the Oscars. Normally a crowd that size, with the addition of a live band, will cause the air conditioning system to kick on.

Ted Kennedy, vice president of operations at the Sacramento office of Colliers International, which manages the building, said the building crew was able to regulate the temperature inside by manipulating supply air fans, using cool outside air only. His chief engineer walked the floor at the party to make sure the temperature was just right. The result was essentially free cooling.

The new building also has advanced lighting, energy and water recycling systems — but no tenants. It opened two years ago, just as the office market

crashed, so the systems have yet to be put through their full paces. That's because facility managers have to account for heat produced by people, computers and equipment and know when to throttle back the heating system in the winter and rely on "thermal momentum" — or lingering heat — to carry a comfortable climate through the latter part of the working day.

"The technical systems in building are very sophisticated," said Brady Smith, project manager for the Gateway Tower and principal at design firm LPAS. "Everything is software controlled and there is an incredible amount of customization."

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