CalPERS Headquarters

CUSTOMER BENEFITS

- "Green" building features
- Increased energy efficiency
- Systems interoperability
- Web-based monitoring and control

PROJECT AT A GLANCE

Project Type:
Facilities expansion with systems upgrade/integration

Location:
Sacramento, California, USA

Facilities:
- 2 new, multistory wings
- 1.1 million sq. ft. (including new buildings, terraces, plaza, garage, tunnel)

Energy Conservation Measures:
- Raised flooring with heating and air conditioning from below
- Waste heat recovery system
- Use of renewable/recycled materials
- Environmental landscaping and high-efficiency irrigation system
- Solar panels and solar radiation monitoring

LEED® Rating:
LEED for New Construction Gold certification in December 2006

The nation's largest public pension fund opted to go "green" when the time came to expand its urban Sacramento headquarters.

The Challenge

California Public Employees Retirement System (CalPERS) provides retirement and health benefits to more than 1.5 million public employees, retirees and their families. Its headquarters are located in an area of downtown Sacramento known as Lincoln Plaza.

When the original 6-story headquarters in Lincoln Plaza North ran out of room, CalPERS unveiled a five-year, $265 million expansion plan. CalPERS chose to remain in an urban setting because it was close to public transportation options and encouraged carpooling and bicycling.

The plan called for adding two U-shaped wings. Lincoln Plaza West would have six stories, and Lincoln Plaza East would have four.

The two towers would provide space for a fitness center, parking garage, offices, daycare, restaurant and retail stores. A walkway would connect the two wings on the third and fourth floors. Both wings would connect to Lincoln Plaza North via an underground passage, which would accommodate pedestrian and auto traffic.

"We invest heavily in environmental initiatives, including ventures promising more efficiency and less pollution than existing products, services, and technologies."
Gloria Moore Andrews
Deputy Executive Officer
CalPERS Operations

The expansion project would require systems for the new sites to integrate with the existing facility management system. Moreover, the plan included incorporating many "green" building features.

That translated into everything from incorporating tiered shading devices, trellises and connections to the outdoors – to providing alternative energy sources, such as solar panels on the roof, a waste heat recovery system, and the use of recycled and renewable materials.

A project of this magnitude presented numerous challenges, among them adhering to a "green" approach, coordinating multiple crews at the construction site, and creating adequate space to stage materials and equipment in a bustling urban area. CalPERS tackled all challenges head on.

The Solution

The facilities management system in the original facility had been installed in 1986. In 2002, CalPERS commissioned a major control renovation and web-enabled upgrade to this system, integrating air, lighting and security systems.

Schneider Electric began construction on the expansion project in 2003. Energy and building automation components were installed to provide a completely integrated facilities management and building automation system for all the buildings.

Intelligent siting, envelope design and building orientation helped capture the benefits of "free" natural cooling and shade. Installation of light shelves and double-glazed energy-efficient windows further enhanced available daylight while providing protection from sun and heat gain.

CalPERS approved installation of solar radiation monitoring on each corner of the roof to measure the sun's intensity and work in conjunction with the 200+ window and shade control devices. These controls assist in maintaining comfort levels and air temperature control while minimizing the need for air conditioning.

Heating and air conditioning systems were designed to control energy usage and costs by leveraging outside air, energy-efficient systems and cooling towers. Raised flooring was installed to help reduce energy consumption and lower costs of future relocations involving electrical connections and cabling ventilation. Landscaping incorporated trees to provide shade, minimize water use and reduce heat gain.

The Bottom Line

The expansion project was completed on time and on budget. Moreover, it successfully integrated systems ranging from window and shade control to solar radiation monitoring, underfloor air distribution control, variable chilled water control, HVAC fiber Ethernet communication infrastructure and the legacy facility management system.

The air conditioners' waste heat recovery system generates hot water and combines with passive systems and other innovations to save as much as an estimated 38 percent more energy than conventional building systems.

Landscaping leverages trees for shade along with a high-efficiency irrigation system to minimize water consumption by almost 50 percent while reducing heat gain.

Solar panels on the roof yield energy savings of approximately 38 percent beyond ASHRAE requirements. A comprehensive metering system measures, monitors and verifies the efficiency of building systems.

In December 2006 CalPERS received the U.S. Green Building Council LEED Gold Award for energy and environmental conservation measures implementedin the expansion.

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