



### Award Category

Overall Sustainable Design

### Green Features

Sustainable location on a developed site

Natural ventilation in office area

Displacement ventilation in auditorium

Showers and changing rooms for bicyclists

CO<sub>2</sub> monitoring and control system

25% of building is recycled material

34% reduction in water consumption

### Annual Energy Savings

32% greater energy efficiency than Title 24 standards

### Size

22,000 ft<sup>2</sup>

### Cost

\$7 million

### Completion Date

June 2005

# University of California, Los Angeles La Kretz Hall

UCLA's Institute of the Environment has found an ideal home in La Kretz Hall. The building is a model for sustainable resource use, and is the university's first project to receive certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) rating system.

With the second smallest campus area in the UC system, UCLA must consider innovative ways to expand within limited urban real estate. La Kretz Hall is built atop a five-million gallon chilled water reservoir, both to avoid the environmental impact of developing a new site, and out of necessity on the land-poor campus. Finding solutions that satisfy both sustainability criteria and the university's realities of space and budget has been a great success in the La Kretz project. The building was constructed at a cost comparable to a non-green building, and is the first project at UCLA to receive a LEED Silver rating from the U.S. Green Building Council.

The impetus for constructing a green building came when the Institute of the Environment was identified as the future occupant. Designing La Kretz Hall to reflect the values of the occupants who would be advocating for environmental change inside was welcomed as a fitting opportunity to set UCLA's long-range environmental planning in motion.

Sustainable design at La Kretz Hall begins with the site and the building exterior. Stacking the project above a chilled water tank sunken into a sloped hillside utilizes an otherwise difficult site to develop, saving valuable land resources. There is no landscaping installed on the building grounds to eliminate the use of potable water for irrigation. Reflective, tan-colored paving and an ENERGY STAR® roof combat the heat island effect, a problem in urban areas when heat absorption by buildings and pavement increases temperatures. The exterior lighting design minimizes light pollution, thereby preserving visibility of the night sky and reducing disruption of the nocturnal environment.

La Kretz Hall has exterior corridors and stairways to eliminate heating and cooling in these spaces, which can account for a significant portion of a building's energy consumption.

This design strategy paired with careful attention to energy use inside the building lowers its modeled energy consumption to 32 percent below Title 24, the most stringent energy code in the nation.

The 350-seat auditorium on the first floor uses an energy-efficient displacement ventilation system. Low-velocity air is supplied to the space through floor-level vents. As the air



La Kretz is designed with an exterior main stairway and corridors to save energy. Photo: Trista Little.

warms, it rises and carries pollutants upward and away from occupants. A carbon dioxide monitoring and control system helps ensure that the air quality in the auditorium remains high. The system measures CO<sub>2</sub> levels and adjusts the fan speed of air handling units to meet campus ventilation requirements.

On the third floor, 50 percent of the open office space occupied by the Institute of the Environment is naturally ventilated. Air entering through low windows is drawn up by ceiling fans, circulated within the space, and expelled through high windows. Energy efficient radiators with local controls introduce heat directly into the occupied zone. Heating the air only at the floor level uses less energy than a conventional overhead HVAC system that must generate and force enough warm air down to reach occupants.

# BEST PRACTICES

## Additional Awards

LEED-NC Silver

## Contacts

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## More Information

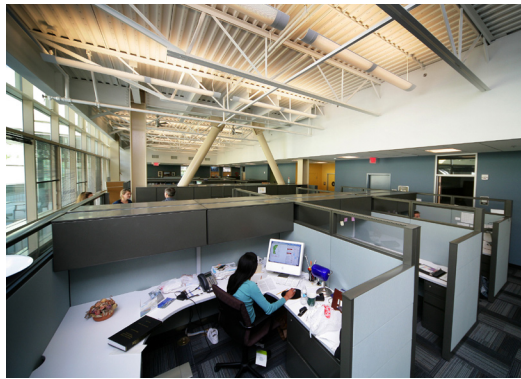
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[www.ucop.edu/facil/sustain/documents/ucregentgreenbldg.pdf](http://www.ucop.edu/facil/sustain/documents/ucregentgreenbldg.pdf)

[www.usgbc.org](http://www.usgbc.org)

The offices use a combination of natural and fluorescent light to reduce energy use and create a comfortable workspace. Large green-tinted, double-paned glass windows allow daylight to enter the building without excessive solar heat gain. Horizontal sunshades block oppressive afternoon glare. The shades also reflect light into the building where it is reflected again off the white ceiling and dispersed deeper into the space. The windows provide 92 percent of critical visual task areas with views to the outdoors. The lighting system is equipped with occupancy sensors that turn lights off when the offices are empty. An automated setback mode turns all lights off on nights and weekends as well.



*UCLA's Institute of the Environment occupies the most environmentally sensitive offices on campus. Photo: Reed Hutchinson.*

La Kretz Hall takes sustainability beyond energy efficiency. This is apparent in the building's bathrooms, which emphasize water conservation and green materials. Toilets with sensors and low-flow faucets and showerheads help La Kretz Hall achieve water savings of 34 percent per LEED guidelines. The toilet partitions are made of recycled plastic. Recycled glass tiles line the changing rooms and showers installed for bicycle commuters.

Sustainable materials are found throughout La Kretz Hall. Modular carpet tiles in the

offices contain recycled carpet fibers and post-consumer plastic bottles. Heavy foot-traffic areas that wear more quickly and soiled tiles can easily be removed for cleaning or replacement, extending the life of the carpet and reducing landfill waste. The cubicle partitions and refurbished Steelcase furniture contain up to 80 percent recycled materials. The ceiling tiles and steel structure contain over 65 percent recycled content. All together, 25 percent of La Kretz Hall is comprised of recycled materials.

**The acoustical ceiling panels installed in the auditorium do not emit volatile organic compounds and resist fungal growth. These traits will help safeguard indoor air quality and create a healthy learning environment.**

While there are no plans at this time to certify additional buildings with LEED, UCLA is following the Policy on Sustainable Practices, which applies to all UC campuses. This policy mandates that all new construction projects, except acute-care facilities, with budget approval after July 1, 2004 must be designed to a LEED v2.1 Certified rating at minimum, and exceed Title 24 by at least 20 percent.

## LESSONS LEARNED

In the first year of operation, occupants discovered that additional sensors are needed in the office area to adequately control the automated lighting system. In the current scheme the lights occasionally turn off when occupancy is low. This is a result of either installing too few sensors in the space or using sensors that are not sensitive enough to detect minor movements. Determining occupancy patterns is a key element in designing a suitable automated lighting system. Close coordination between the design team and the end user is important to establish the lighting design that will work best for building occupants.

*Best Practices* is written and produced by the Green Building Research Center, at the University of California, Berkeley.

The Best Practices Competition showcases successful projects on UC and CSU campuses to assist campuses in achieving energy efficiency and sustainability goals. Funding for *Best Practices* is provided by the UC/CSU/IOU Energy Efficiency Partnership.



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