



California State University Teams With Enlighted to Significantly Reduce Energy Consumption

California State University, Dominguez Hills (CSUDH), a public university in Los Angeles, is a major consumer of energy and natural resources. The university has made it their responsibility to be a wise steward of scarce resources by reducing the use of non-renewable resources and increasing energy efficiency. As part of the large CSU system, this responsibility also includes promoting continued economic and ecological viability in California.

Keeping with the university's charter, central plant and energy manager Kenny Seeton lead a cost and energy saving lighting retrofit project for CSUDH. The retrofit came after Seeton and the Physical Plant team made an evaluation of the existing lighting system, conducted a two-month pilot project and received the help of environmental science students from the university who researched several product options.



CSUDH Conducts an Extensive Energy Savings Pilot with Enlighted Advanced Sensors

In the initial pilot, four sensors were integrated with each of four existing fluorescent fixtures (replacing existing fluorescent ballasts) outside of the IT suite, and the energy monitoring results were shared with an Earth Sciences class. A group of students studied the performance data from the sensors, which supported the case to expand the pilot to include all corridors in Welch Hall, as well as in its IT offices and the server room.

The project team was not timid in testing the limits of energy savings with the system. Corridor lights in the Welch Hall facility were set at 10 to 35 percent of full brightness. In the IT office spaces, most of the lights were set at 30 to 50 percent.

"There's power to fixtures in Welch Hall corridors from 7 a.m. to 7 p.m., but with the advanced sensors instead of those lights being on at 100 percent, the highest they ever go is 35 percent. And you don't notice it. That's how much we were over lit there," Seeton said. "We couldn't do that with just an occupancy sensor."

The Results

Seeton states that the 276 hallway sensors in Welch Hall and the South Academic Complex (SAC), and 188 sensors in Natural Sciences and Mathematics (NSM) and La Corte Hall (LCH) together save the university 201,436 kWh annually. The Enlighted lighting projects in these buildings are saving the university \$26,289 in electricity costs over that same time period. Additionally, Southern California Edison issued a rebate of \$51,565 for the campus energy savings brought about by the Enlighted Advanced Sensor.

The successful outcome at Welch Hall and SAC, NSM and LCH has led to further installations on campus. Additional installation of 576 sensors at SAC and NSM along with a new installation at Social and Behavior Sciences (SBS) are underway. Seeton estimates the installations will save the university 245,496 kWh and \$30,483 in energy cost annually. He further expects Southern California Edison to issue a combined rebate of \$58,919 for the energy savings on this project.



“From the people I’ve talked to, nobody has this extensive of a control system,” Seeton said. And he has only begun to tap into what Enlighted can do. “After I get it installed and adjust the light level and task-tune to individuals’ needs, then I’ll tie [Enlighted] into the heating and cooling system to save energy when nobody is in a space, especially for extended periods of time like semester breaks or vacation,” Seeton said. “With this technology, I can adjust the light levels from my computer.”

Seeton considers a campus-wide lighting retrofit to be a “no-brainer.” And he’s not alone. Through discussions held with directors and energy managers from the 23 CSU campuses during monthly online meetings, Seeton has discovered that while the UC Santa Barbara, CSU Fullerton, CSU Northridge, CSU Sacramento and CSU Channel Islands are following suit, CSU Dominguez Hills leads the way as an early adopter.

“Enlighted is a no-compromise solution. We reduced our energy spend where the system was installed by 65-80%, while increasing the comfort of building users.”

Kenny Seeton, Manager Central Plant/Energy Manager



Enlighted Selected as the Go-forward Partner of Choice

The team chose to move forward with Enlighted’s platform because its advanced sensors provided several unique benefits to the university. The capabilities that were particularly interesting to the project team included:

- **Ease of implementation:** Sensors communicate over a wireless network, enabling a relatively simple upgrade of CSUDH’s existing fixtures.
- **Cost effective solution:** The sensor units could be easily installed, commissioned and serviced by the facilities management team at the University, making the solution affordable to implement and maintain going forward.
- **Highly intelligent sensors:** Advanced sensors make control decisions locally at each fixture, adjusting light levels by sending information to the driver of the host fixture. Lighting level decisions are made by:
 - Daylight Harvesting - The sensors adjust light levels as natural light changes the need for overhead light based on weather and time of day
 - Motion sensing - During work hours when spaces are unoccupied, lamps in fixtures equipped with the advanced sensors idle from zero to 10 percent luminosity until “human-specific” motion is detected
 - Digital PIR sensing - The sensors are designed to ignore other heat producing items, such as Fax, printers and computers or changes in the environment produced by HVAC systems

“This product can adjust the light level based on the task. Before, if anyone wanted less light in their office they took bulbs out of their fixtures,” Seeton said. “Instead of taking out bulbs and getting an uneven light, we can tune it down.”

And the Awards go to CSUDH and Enlighted

Environmental Leader Product & Project Awards

In its second year, the Environmental Leader Product & Project Awards recognize excellence in products and services that fall into two categories:

- Products that provide organizations with energy and environmental benefits
- Projects that improve environmental or energy management and conserve resources

Enlighted's advanced sensor lighting installation within CSUDH has qualified it to receive a Top Project of the Year Award by the Environmental Leader – because of the impressive annual energy savings being recognized by the University.

California Higher Education Energy Efficiency and Sustainability (CHESC) Best Practice Awards

The annual CHESC Best Practice Awards competition is made possible by the Higher Education Energy Efficiency Partnership. The competition is meant to:

- Highlight the achievements that California campuses have made through innovative and effective energy efficiency projects and sustainable operations.
- Showcase specific projects as models to be used by other campuses to achieve energy efficiency and sustainability goals.
- Provide campus staff with a compendium of Best Practice projects that could be transferable to their campus.

CSUDH's use of Enlighted's technology garnered the university the Best Practice award at CHESC 2014 and 2015 for Lighting Design/Retrofit.



For more information,
visit www.enlightedinc.com.