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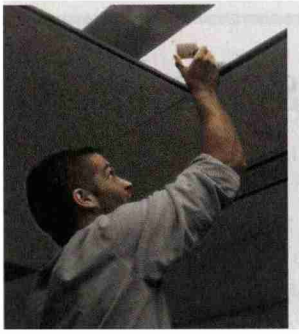
Faulty Occupancy Sensors Found With Data Loggers

Leaving classroom lights on while no one is using the rooms wastes significant energy. To overcome this problem, campuses across the county have installed occupancy sensors that automatically turn off lights after rooms are vacated for a certain period of time. However, these sensors can malfunction and are often difficult to identify as broken. As a result, lights are left on unintentionally for days at a time, wasting kilowatt-hours and costing universities money.

California State University Long Beach (CSULB) has been impacted by this problem. CSULB energy-efficiency interns became aware of this energy issue and set into motion a plan to identify default occupancy sensors. Interns Allie Bussjaeger and Felix Navarrete, to date, have tested approximately 25 percent of CSULB classroom sensors. By identifying default occupancy sensors, they have potentially saved 31,000 kWh, which translates to a $4,000 cost savings for their campus.

The average CSULB classroom contains 14 fixtures holding two 32-W light bulbs each. Energy inefficiency adds up fast when even one of these classrooms remains lit overnight. Bussjaeger and Navarrete, members of the Alliance to Save Energy Green Campus Program, learned other campuses used HOBO data loggers from *Onset* to identify faulty occupancy sensors. Bussjaeger and Navarrete continue to work under the supervision of Paul Wingco, campus Energy and Sustainability Manager, to install HOBO U9 Light On/Off data loggers in campus classrooms.



With only 25 percent of the campus completed, the interns estimate CSULB will save 125,000 kWh per year — potentially $16,000 as a result.

The time-of-use loggers are installed in classrooms for one week. Then are removed for download and data analysis. Using a light sensor and microprocessor, the loggers record minute by minute when lights are turned on. If the data indicates lights remained on the entire week, then the occupancy sensor is deemed not working. If the data shows lights were on for several hours after 10 P.M., then the sensor is likely dysfunctional.

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