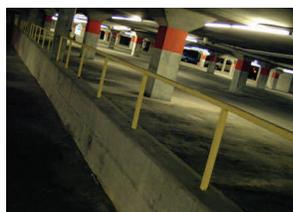


## A Greener, and Quieter, Parking Garage

Parking and Transportation, working with Facilities Services, have recently installed a new carbon monoxide (CO) monitoring system in the Recreational Sports Center parking garage – which will save money and operate more quietly.



when needed. The sixth fan is still required to run to ventilate the mechanical spaces.

Fourteen CO sensors located throughout the garage ensure that all five fans are on during busy times when a lot of cars are moving in and out – like in the mornings, evenings, and after sporting events. Because of the natural airflow across the garage from Bancroft, this location was a good fit for the technology. As a safety precaution, all fans will turn back on in the case of a system malfunction.



To verify system operation, electrical current monitors were put on the fans to record their operation over a month. The data shows that

the fans now only come on every few days. The new system reduces greenhouse gas emissions by about 100 metric tons and saves about \$35,000 per year – with the \$50,000 rebate from

Pacific, Gas & Electric, the installation has paid for itself in less than six months.

This new system is part of the Strategic Energy Plan which includes over 100 energy efficiency projects on campus.

Until recently, six large exhaust fans used to ventilate the Rec Sports garage were running continuously. This was the case even at night and in the middle of the day when no exhaust fumes were being generated in the garage. By installing a fan control system that monitors CO levels, five of these fans now only turn on

## Bright, Efficient Lighting for Artists and Athletes

The University recently completed a lighting retrofit project that included two unique buildings on the University Campus, Hearst Memorial Gymnasium and Zellerbach Hall and Playhouse. These projects included the standard upgrade of lamps and ballast to the latest more efficient models, but also made some changes that are significantly reducing electricity consumption and have also improved lighting and controls.



In the dance studio and other areas with indirect (upward-facing) fixtures, the existing inefficient high intensity discharge lamps were replaced with modern efficient T5 fluorescent system, maintaining the appearance of the fixture while producing more light with less energy. In the gymnasiums the high intensity discharge fixtures were replaced with high efficiency fluorescent fixtures and wireless controls with occupancy sensors have been installed to turn off the fixtures when the rooms are not being used.



In Zellerbach Hall and Playhouse, campus lighting engineers worked with theater staff to upgrade backstage lighting to more efficient fixtures, which provide higher light levels for backstage workers while consuming less energy than the older fixtures. The new fixtures are also lighter and easier to reconfigure for the many diverse productions that are presented on the two Zellerbach stages.

The project was undertaken as part of the Campus Strategic Energy plan. A rebate from the local utility, Pacific, Gas & Electric, covered more than 40% of the project cost. This project is reducing energy use and greenhouse gas emissions, while saving the campus about \$36,000 annually and paying for itself in less than 3 years.

## Campus Exterior Lighting Goes LED



As part of the **Strategic Energy Plan** to reduce electricity use, almost 800 of the iconic campus exterior light fixtures were recently retrofitted to LED arrays, replacing the existing metal halide lamps. The LED arrays draw 40 W each compared to 175 W for the metal halide lamps. They should also last about 50,000 hours each, as opposed to

20,000 hours, reducing maintenance costs and increasing campus nighttime safety. Furthermore, the LED arrays reduce light pollution because all the light is directed below the fixture. The project is saving the campus about \$55,000 annually and reduces annual greenhouse gas emissions by about 160 metric tons CO<sub>2</sub>e.

