

# SAVING ENERGY *On Campus*



## STUDENTS AND STAFF COLLABORATE FOR A MORE SUSTAINABLE WORKPLACE

This case study highlights how the myPower program can complement existing work to reduce energy on our campus. Many individuals and groups regularly contribute to permanently reducing the amount of energy we use—below is one example of how students have worked with staff to do so.

### *BUILDING SUSTAINABILITY AT PHYSICAL PLANT: SUMMER 2009-SPRING 2011*

Starting in the summer of 2009, Building Sustainability at Cal (BS@C) worked with Sara Shirazi and other members of the Physical Plant – Campus Services' (PPCS) GreenTeam to improve the operational sustainability of their main building (Carleton). Work of the BS@C students, interns, and GO! Team exemplified the typical range of projects that can easily be applied in nearly any department on campus. From conducting appliance audits to implementing educational campaigns and making specific recommendations for appliance consolidation, students were effective in supporting a Green Team in their work to reduce energy usage and bottled water use. Students were also able to learn from their experiences as staff took the time to meet and explain their building's challenges and to facilitate audits. Though all behavioral improvements are far from finished, BS@C students were able to support the Green Team in a few of their most time-intensive efforts and learn from their projects.

#### **Summer 2009**

Working closely with Sara Shirazi, student intern Taylor Zhou conducted a detailed inventory of all appliances found in the Carleton offices, kitchenettes, and shops. The appliance survey was intended to help direct the Green Team's efforts to modify behavior in the building to reduce energy use. Taylor found that kitchenettes were underused as a common eating space. Rather, building occupants preferred to use a variety of kitchen appliances in their individual offices. This

pattern meant that there were more personal kitchen appliances than expected – 450 appliances for 60 full time occupants (although there are many additional trades staff who return to the building for meals). There was even a deep fryer!



#### **Fall 2009**

In the subsequent semester, Sara Shirazi again contacted BS@C for assistance with an educational program for the Carleton building occupants. BS@C deployed their newly formed Greening Operations (GO!) Team to review the building's use of bottled water tower coolers and personal kitchen appliances. The students subsequently conducted a detailed walk-through of the site and made quick 30-minute presentations to building occupants and reported on



recent water safety tests conducted by EH&S on PPCS tap water and describing the number of appliances used by the occupants. The beginning of the presentation also included a trivia section

in which inhabitants were asked questions pertaining specifically to the building operations (e.g., the monthly PG&E bill amount and how many personal appliances were found in the building).

The students also came up with ways to provide incentives for building occupants to reduce their energy consumption. This was primarily implemented with a pledge to give up one or more of their kitchen appliances and use the communal kitchens instead for the month of January 2010. The unit with the most

appliances given up received an ice cream party at the beginning of the following month. The building's Green Team took over subsequent operations in the area of communal kitchen improvements. The GO! Team was instrumental in getting the attention of building occupants (since contact with students is more rare in PPCS than in some parts of campus) and providing engaging and educational presentations on specific building goals and areas of improvement.

## Spring 2011

As IT Services had long expressed an interest in consolidating its equipment, BS@C students agreed to complete a thorough audit of monitors, computer towers, printers, and copiers in Carleton (and in another Facilities Services building). Two students in the BS@C class, Jhonie Martinez and Ava Spindt collaborated with the head of IT for Facilities Services to plan and implement this audit. As the students inventoried equipment, they recorded computer monitor serial numbers and model numbers of all relevant equipment. To inform their recommendations to IT services, the students also sent out an online survey to gauge the personal habits of building occupants.

Over the course of a semester, the students compiled a detailed report of their findings for each appliance category, including its estimated energy use in various modes and potential for energy savings if certain appliances were turned off at night or power strips were properly used to reduce phantom load. Though not all recommendations were feasible to implement in the offices, others, such as the cooperative use of expensive and energy intensive copy machines, would be effective steps towards energy use reduction.

Visit [buildingsustainability.berkeley.edu](http://buildingsustainability.berkeley.edu) to learn more about Building Sustainability @ Cal.



*450 appliances for 50 full-time employees were identified during the survey.*



*Auditing of occupant equipment.*



*A BS@C student at the completion of the office space audit.*