**Haas School of Business**
2220 Piedmont Ave  Berkeley, CA 94720

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The building's real-time energy use can be seen on the Pulse Dashboard at **bit.ly/haasbiz**

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## *Background*

Built in 1995, the Haas School is a mini-campus of three connected buildings set around a central courtyard. The complex includes Classrooms, lecture halls, and seminar rooms along with a computer lab, career center, Andersen Auditorium, Cheit Hall, and a business library.

During the spring of 2008, Building Sustainability @ Cal performed a lighting audit in the Student, Faculty and Cheit buildings in Haas. Education campaigns reminding occupants to turn off the lights and equipment were proven to be useful in the building in the past.  Lighting retrofits were completed through Strategic Energy Plan work in 2009-10.

The Haas Energy Challenge was conducted in 2009 by Green Campus.  Read the full study at: ***http://bit.ly/HaasEnergy***

Constant Friday messaging proved to be effective in reducing energy use. Arline Wyler, retired Assistant to Dean Richard Lyon, was in charge of this messaging that went out to the building.

Hass School of Business building manager, Gerardo Campos, along with the building's Green Team are already making great strides towards energy-efficiency. Evin Guy, Program Coordinator, is an active Power Agent in her area and, with the help of Gerardo and others, has placed light switch shut-off reminder stickers throughout. This month Hass received Green Department Certification from the Berkeley Office of Sustainability.

Campos brought up some concerns regarding energy use in two areas. One is the lighting schedule in the 20,000 sq/ft library. He has noted that there are times when the lights come on hours before occupants arrive. He does not have control of the lighting settings in this area. Secondly, he is working with PP-CS on a bank of 5 offices that are over-heated, currently around 80°F.

The building houses around 2,800 people on average and operates from 7 am to 10 pm Sunday – Friday and 7 - 6 on Saturdays. Haas does participate in Energy Curtailment during Winter break to the extent they are able. Campos is interested in possibly purchasing smart strips to further reduce energy consumption through motion sensors. Other resources that could be useful for this area are vending machine miser devices. They have been reported to reduce energy use and cost by 46% per year.

### *Lighting*

Most areas of the building have access to natural lighting and task lamps were noted throughout. Many task lamps are equipped with CFLs, although some have less effiecient incandescent bulbs.  Some offices were observed to have overhead lights on even though they were unoccupied. Occupancy sensors could be a possible solution in offices to reduce energy consumption.

As previously mentioned, Campos is concerned about the lighting schedule in the library. This schedule is controlled by PP-CS.

***Recommendations***

- ☐ Utilize natural light as much as possible.
- ☐ ensure that task lamps are equipped with LED or compact fluorescent bulbs.
- ☐ Work with PP-CS to adjust Library lighting schedule.

## *Thermal Comfort*

The temperature in the building is reported to be generally comfortable, except for the bank of offices mentioned in the introduction of this report.

Occupants do not have control over thermostats, but are able to open and close most windows throughout. While there are only a few space heaters in use, there are many personal fans throughout.

***Recommendations***

- ☐ Dress for the appropriate temperature.
- ☐ Unplug personal fans and heaters when not in use.
- ☐ Find more tips at: mypower.berkeley.edu/office-thermal-comfort

## *Computers/Printers*

During the survey we noted that a large majority of staff have personal printers at their desks. Campos estimated the number at 75% of staff. Consolidation of these printers into networked or shared devices could lead to a great deal of savings. Many printers and multi-functional devices (combining copying, printing, and scanning functions) are easy to network together so many people can use them.

Last fall Phil Mahoney, in the Haas Computer Lab, explored various redesign options for the S300 lab. The focus was on making the space more flexible for student instructional collaboration. Based on direct Haas student input they took a conservative approach and removed desktop computers from one of the two main lab islands. That translated to 12 desktop computers being removed in late November 2012. Since all Haas graduate students are required to have a laptop, they saw little risk in decreasing lab desktop computers. All of the computers removed were late model Dell OptiPlex's - less than 18 months old so they were relatively energy efficient. Four LCD monitors were placed back into this space for use with laptops.

The latest Dell Bios power saving tools are utilized to power down computers when idle. They also use global domain policy settings to shut down all lab computers in the evening and have them auto start as close to our morning opening time (i.e. 7:15am) as possible.

***Recommendations***

- ☐ **Consolidate personal printers into shared network devices.**
- ☐ Avoid screensavers, they do not save screens or energy on LCD monitors.
- ☐ Clean vents & fans regularly.
- ☐ Use power strips and turn them off when you are done using the devices plugged into them.
- ☐ Shut off monitors when not in use for more than 15 minutes.
- ☐ Turn off Individual printers at night and on weekends.
- ☐ Lowering the brightness and increasing the contrast of your monitor can use up to 50% less energy in some models.

## *Kitchenette*

Appliances were not observed to be manually unplugged after use. Power strips are not used on appliances with phantom loads, such as the microwave. The large refrigerator was clean of frost and had some items on top of it. It is not unplugged for long holiday vacations and the coils and fans are not cleaned regularly.

Consider consolidating any refrigerators that aren't being used to capacity such as the smaller fridge under the counter.

***Recommendations***

- ☐ Consolidate refrigerators where possible.
- ☐ Clear items from top of fridge (prevents higher energy use to generate cold temperatures).
- ☐ Clean coils & fans regularly.
- ☐ Unplug appliances after use, or put them on a power strip and turn off the entire strip when done.
- ☐ Continue defrosting freezer regularly.
- ☐ Place reminder stickers conspicuously to remind occupants to unplug appliances when not in use.

***Further Resources***

- ☐ Keep stocked with posters and stickers to prompt energy conservation. Visit the myPower Resource Center in 192 Barrows.
- ☐ Become a Power Agent: bit.ly/PowerAgents
- ☐ Physical Plant Campus Services (PPCS) (510) 642-1032
- ☐ myPower office tips available at: mypower.berkeley.edu/takeaction/office.html
- ☐ Get rid of old or underutilized electronics at Berkeley Overstock and Surplus: businessservices.berkeley.edu/overstock