

LEED-EB for the Public Affairs Building

Executive Summary

Report prepared by:

Sharon Cech, Haan-Fawn Chau, Laura Henne,
Christine Lee, Mike Sandler

June 2, 2008

UCLA's Public Affairs Building will be undergoing a LEED-EB retrofit in 2008. Our student group assisted Facilities Management with this process.



Part I: Occupancy Survey

Understanding how the Public Affairs Building (PAB) is used is an important step in the process of improving its operating efficiency. An occupancy survey was conducted by nine UCLA students from 2:00 to 4:00 on Wednesday, May 14, 2008.

Occupancy Survey Results

Data was collected for 240 rooms and one hallway, while 115 rooms were noted as being inaccessible (Figure 1). During the survey period, **the Public Affairs Building contained 897 people and 664 computers.** More results can be found in the full report.



Students prepare for the PAB occupancy survey.

Recommendations: Building Recycling

Surveyors also noticed a lack of recycling bins. While data was not collected for all rooms, some classrooms and offices surveyed did not have any or had too few white paper recycling bins. Many building users asked about recycling and expressed their desire for more recycling bins and for mixed paper recycling in particular. **We recommend placing mixed paper recycling bins in every room and placing centralized beverage container recycling bins in the hallways.**

Part II: Waste Stream Audit

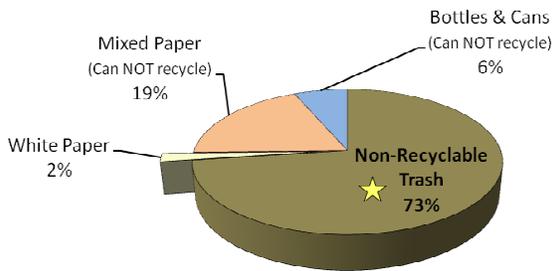
On the evening of Wednesday, May 14, 2008 the LEED-EB group conducted a waste stream audit for the Public Affairs Building. The amount of unsorted waste found in trash cans (204.3 lbs) far outweighed that of the recycle bins (22.5 lbs). However, after all the garbage was sorted, we found that **only 4% of the PAB waste stream (from trash & recycle bins) would have been properly diverted into the recycling system.**



Students and Facilities Management staff pose for a photo during the waste stream audit.

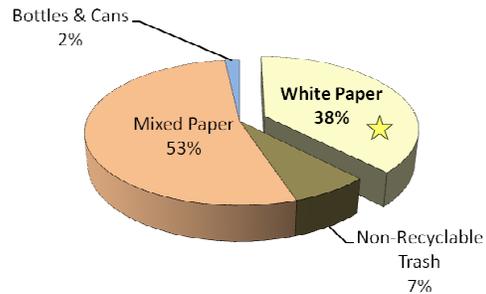
The full spreadsheet can be found in the full report.

Contents of Trash Cans
Total = 204.3 lbs



The current PAB recycling system only handles white paper, so just 2% of the items from trash cans could have been recycled.

Contents of White Paper Recycling Bins
Total = 22.5 lbs



Part III: Recommendations:

Mixed Recycling & Waste Stream Management

At the current recycling rate, the Public Affairs Building will not reach its LEED-EB certification goal of reducing or recycling 50% (MR Credit 7.1) or 70% (MR Credit 7.2) of the building's waste stream. **If UCLA instituted a comprehensive mixed recycling system at the Public Affairs Building and all occupants recycled correctly, the building's recycling rate would greatly improve from 4% to 28%.**

In order to make this website more effective, we suggest that “e-waste recycling!” appear as its own heading on Facilities Management’s main recycling page. Under that heading, the types of electronic waste that can be recycled should be listed clearly, for example: “batteries,” “cell phones,” “ink cartridges,” “computers,” and “CDs.” **To make the program more convenient and accessible, we suggest that Facilities Management schedule a campus-wide “e-waste pick-up day” once per quarter.**

Waterless Urinals

The Public Affairs Building currently has 49 urinals that consume 3.5 gallons of water per flush. Typical modern urinals use 1 gallon per flush. UCLA Facilities Management is planning to replace those, plus an additional 213 older urinals at 21 other buildings on campus, with high efficiency flush urinals that consume 0.8 gallons per flush. **According to a study of water efficiency by the RAND Corporation, waterless urinals have the potential for significant water savings.**¹ Facilities Management have expressed concerns regarding hygiene, plumbing, and maintenance. We have been in contact with representatives from waterless urinals vendors to compose a response to the concerns of Facilities Management. We plan to continue this dialogue with Facilities Management into the summer.

Continuous Monitoring with SensorKit Technology

SensorKit is a technology that is being developed by the Center for Embedded Networked Sensing, a research center at UCLA. SensorKit can count the number of bodies that passing through infrared beams whenever the beam paths are broken. **This innovative sensor could be used to measure real-time occupancy rates in the Public Affairs Building, allowing Facilities Management to better control building efficiency.** SensorKit, equipped with infrared sensors, was deployed at the southwest entrance of the Public Affairs Building on Wednesday, May 21, 2008 from 12:45-3:00 pm. SensorKit seems to capture human traffic with relatively high accuracy, however, it is not an infallible system. Keeping a “human in the loop” allows us to observe under what circumstances SensorKit may foul. **The case study presented in this report demonstrates that SensorKit can be successfully used to monitor occupancy flux in a passageway.**

Conclusion

Facilities Management is hoping to achieve up to 48 points in the LEED-EB rating system, which would make the Public Affairs Building LEED Silver. We hope this project has assisted them. More information is in the full report.

¹ Groves, David G., Jordan Fischbach, Scot Hickey. “Evaluating the Benefits and Costs of Increased Water-Use Efficiency in Commercial Buildings” RAND Corporation: Environment, Energy and Economic Development Program. 2007. http://www.rand.org/pubs/technical_reports/TR461/