

Building Dashboard[®]

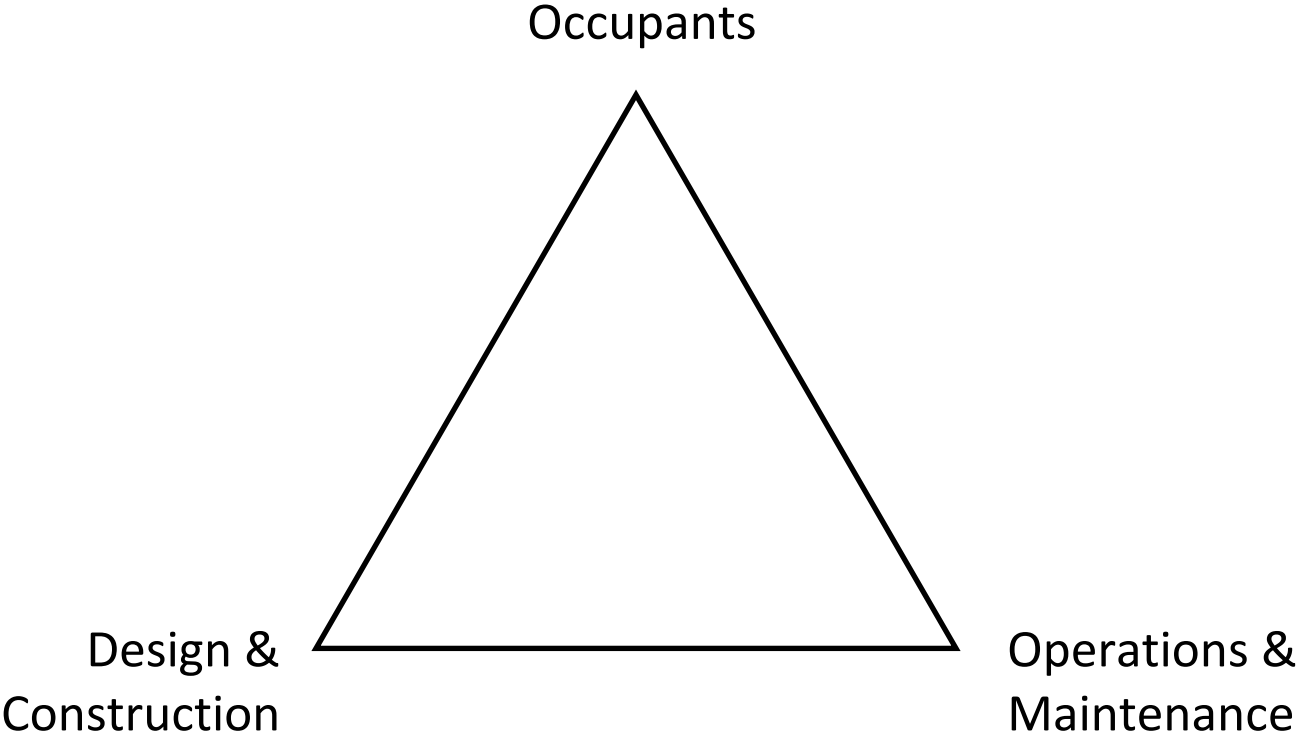
Building Occupant Feedback Systems
and Plug Loads:

Opportunities and Results



Michael E. Murray, LEED AP
CEO, Co-Founder





What are plug loads?

Behavioral



Institutional

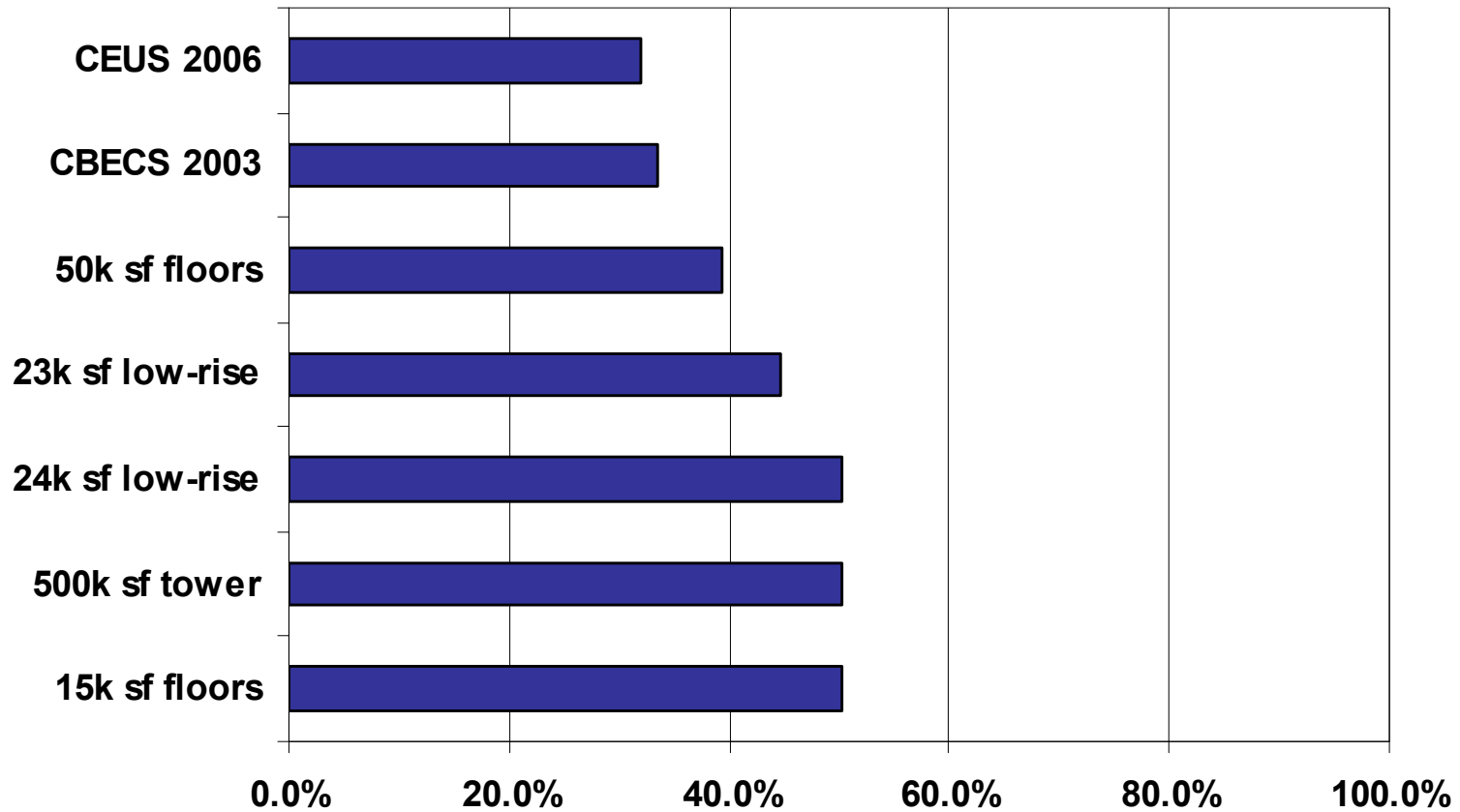


Plug load research: overview

- ⚡ 8 offices buildings, 2 K-12 schools
- ⚡ 3 are LEED-certified
- ⚡ 5,000 sf - 500,000 sf
- ⚡ Locations: SF Bay Area, San Diego, Atlanta, Honolulu, New Jersey, Colorado, Virginia

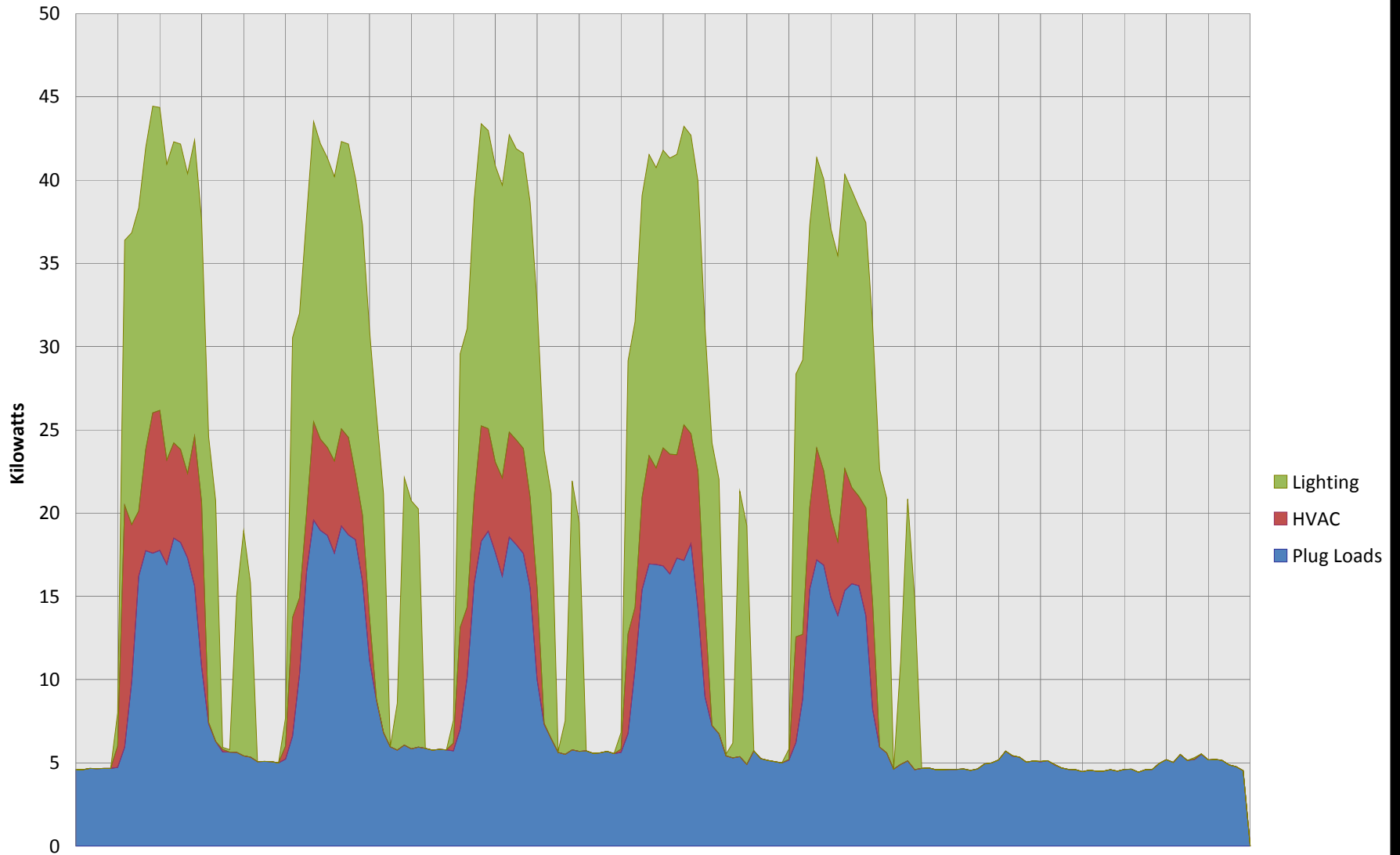


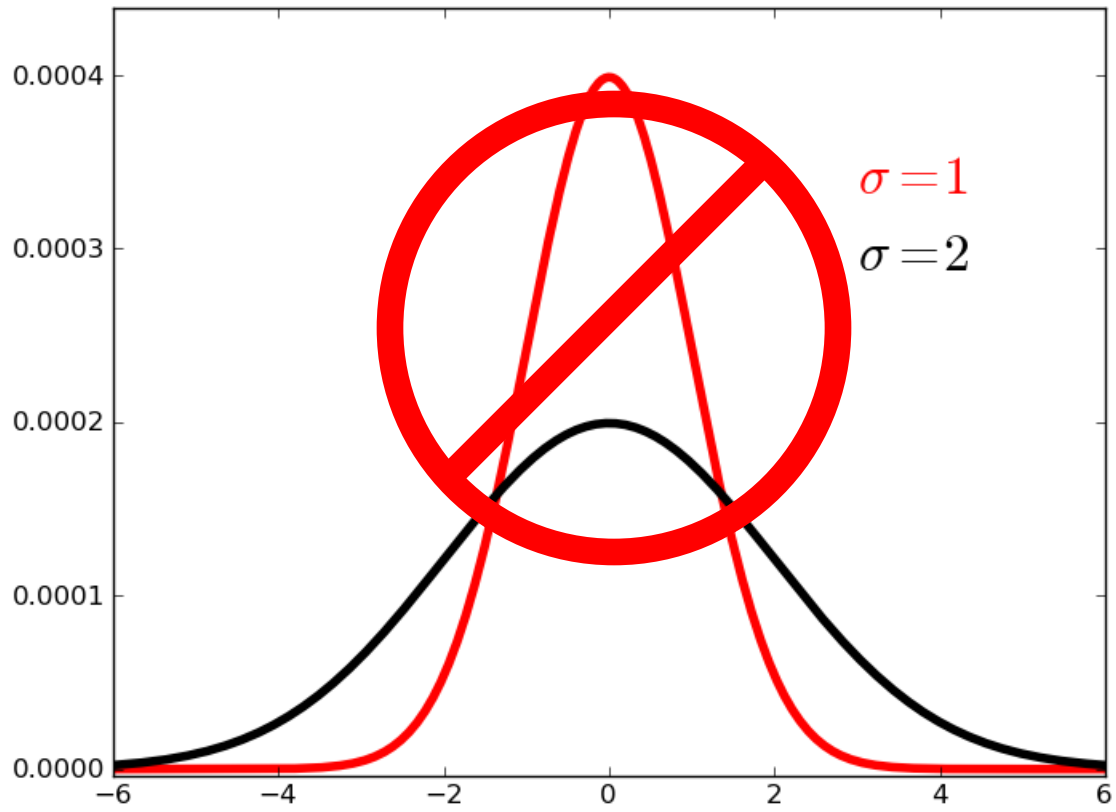
Plug loads as percent of total electricity use



SF Office Electricity Demand

Monday, Oct 4 - Sunday, Oct 10, 2010





Behavior Change: Energy Competitions

School	Duration	kWh Saved	\$ Saved	Buildings	Winner
University of Missouri	Apr 4 - May 2, 2010	18,700 kWh	\$1,600	3	11.3% reduction
Elon University	Feb 16 - Apr 6, 2010	231,000 kWh	\$13,900	41	36.9% reduction
St John's University	Feb 3-17, 2010	22,300 kWh	\$4,200	6	15.8% reduction
Hamilton College	Apr 15-30, 2009	44,300 kWh	\$5,500	11	40.9% reduction
Oberlin College	Apr 9-23, 2009	10,700 kWh	\$1,400	17	42.5% reduction
Boston College	Feb 1-28, 2009	15,200 kWh	\$2,200	8	9.1% reduction



CAMPUS CONSERVATION NATIONALS 2010

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COMPETE TO REDUCE

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40 SCHOOLS
3 WEEKS

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40 Schools, 3 Weeks

40 colleges and universities from across the U.S. will be competing this November for 3 weeks. Residence halls where students live full time will be among the participating buildings.



2009
816.3
500



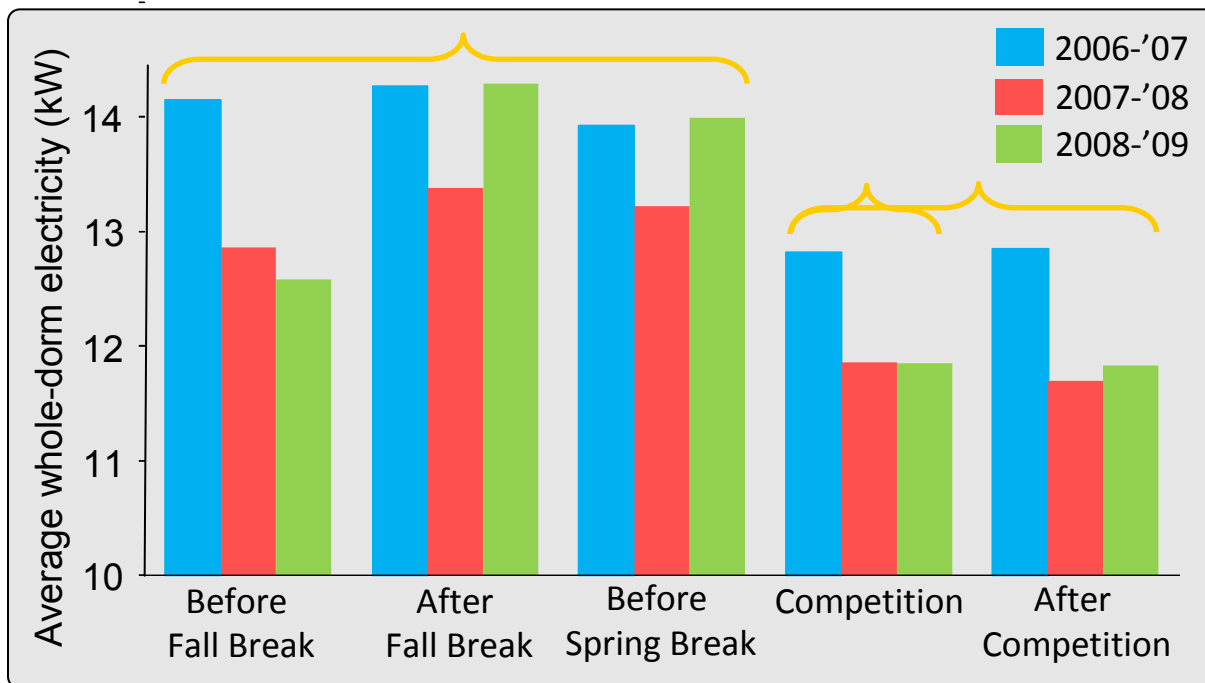
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www.competetoreduce.org

Feedback & Competitions in OC Dorms

⚡ Competitions + feedback = reductions in electricity use

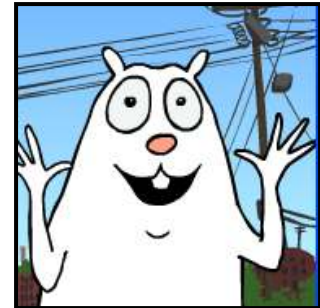
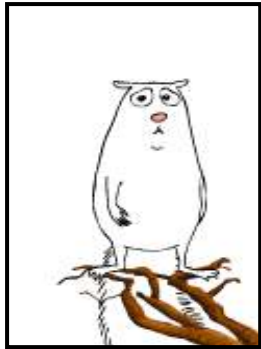
- 💧 Significant reductions occur during competitions ($\approx 10\%$)
- 💧 Reductions are sustained during post-competition period
- 💧 Web traffic from buildings positively correlated with electricity reductions



OBERLIN
COLLEGE OF ARTS & SCIENCES
CONSERVATORY OF MUSIC



Characters & Empathy



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