

## Community Assessment of Renewable Energy and Sustainability (CARES), University of California at Berkeley, Spring 2009

#### Goal

•Improve sustainable practices in the UC Berkeley residence halls

## **Objectives**

 Develop an online educational tool that will 1.measure a dorm resident's energy consumption, water usage, and waste generation 2.provide a personalized list of "green tips" to help reduce the resident's ecological impact Install energy meters in each building in the residence halls to establish a real-time energy monitoring system

## **Current Tasks**

•Developed survey to collect information on dorm residents' ecological habits and awareness of UCB sustainability programs

•Developed footprint calculator to calculate dorm residents' energy, water, and waste footprints

#### Next Steps

•Purchase meters to install in Unit 3 and implement a data monitoring system

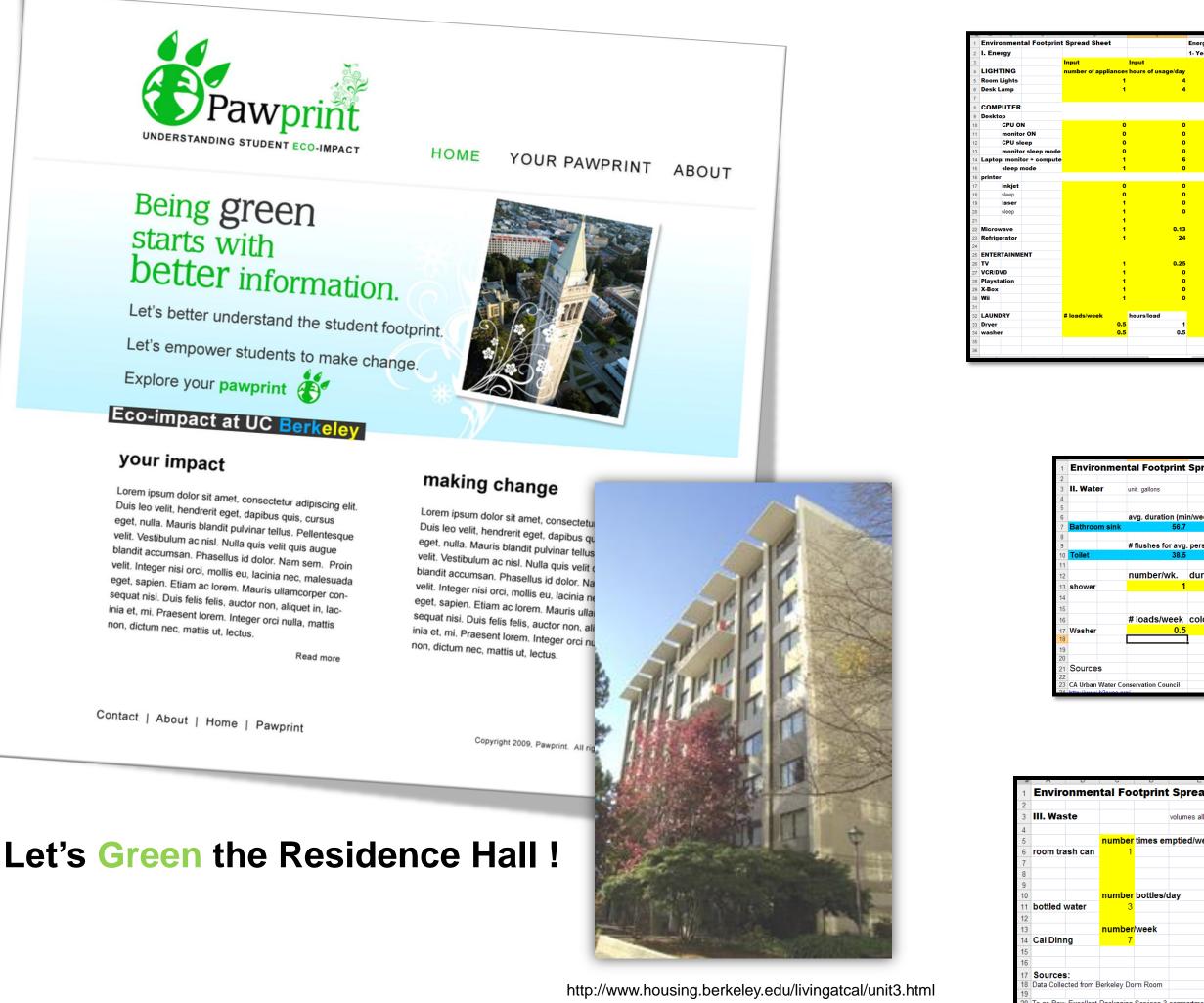
•Conduct a preliminary survey in the residence halls

## **Pawprint Team Members**

**Brian Yeh (leader)**, 3<sup>rd</sup> year IEOR | **Chris Chandler**, 4<sup>th</sup> year CEE **Ricky Choi**, 4<sup>th</sup> year ME | **Lynn Hiel**, 3<sup>rd</sup> year CEE & Architecture Minor **Kevin Huynh**, 3<sup>rd</sup> year ME | **Stacy Lee**, 4<sup>th</sup> year English and Conservation & Resource Studies | Emma Strong, 3<sup>rd</sup> year CEE | Lisa Veliz, 3<sup>rd</sup> year CEE Advisors: Prof. Alice Agogino, ME | Ryan Shelby, 3<sup>rd</sup> year Ph.D, ME



# **Pawprint Official Website**



## **Pawprint's Missions**













### Metering **Individual Units**





http://hwco.org/electric\_system.htm

# **Footprint Calculator**

## Energy



1	<b>Environmental Footprin</b>	nt Sr	oread	Sheet						
2										
3	IV. Heating									
4										
5	Thermostat Temperature	=	65	F	Windows	Height	=	1.95	m	
6						Width	=	3.15	m	
7 8	Energy Lost	=	0.00	W or J/s		Area	=	6.143	m^2	_
9	Hours Heated/Day	=		0	Walls	A	=	4.2	m	1
0	-					В	=	2.95	m	
11	Kw-H/day	=		0		С	=	4	m	
12	Kw-H/acad yr.	=		0		Total Area	=	48.38	m^2	
13						Gross Area	=	42.24	m^2	
14	lb. CO2/day	=		0						
15	lb. CO2/acad year	=		0	Heat Trans	Conduction	=	14.52	w	
16						Qdot infil	=	0.03064	W	
7 8						Qenv.loss	=	0.00	W	_
19			c		Constants	Uwall	=	0.21	W/m^2k	
20	A	K	C			Uwindow	=	0.92	W/m^2k	
21 22						bldg. env.	=	0.85	ac/hr	
23		1			Information	y aveage T	=	65	deg F	291
24		2				Ttherm	=	65	deg F	291
25 26						Tdifferent	=	0.00	deg F	0.0
26 27			11							
28	What 1		1	ctric?						
29 30	All res B	71	/	es Guide P.1	7 pdf]					
	Refer	/								
32	U vali			1/quinnliteperf	ormance/u-value	s.cfm				
33										

Water

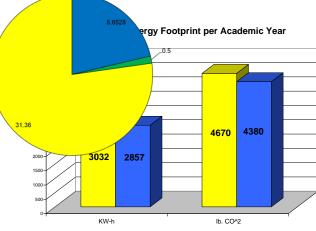
d Sheet					
fauce	t flowrate (gal/min)			gal/academic	year
2	.1		119.07	3810.2	
				0	
gals/f				0	
1	.6		61.6		
				0	
on (min)	shower flowrate (gal/min)	water savings from military shower		0	
5	2.2		11	352	
				0	
				0	
/ash?	water used for one load	energy savings by using cold wash		0	
0.5	22		11	352	
				0.405	
		gallor	ns 202.7	6485	

## Waste

	1	0		1	0	IX.	L	101	IN	0		N N	IX .
Sh	eet												
ese i	tems would	take un in	a landfill						Volume of	Waste	time factor=wee	waste/wee	waste/ac:
ĸ	volume		n (ft^3)	total vol	ume of v	vaste							
	0.52			0.52					0.2704		1	0.2704	8.6528
									0			0	(
									0			0	(
									0			0	(
		of a 0.5L	. plastic	bottle (ft^	3)							0	(
	0.017								0.051		0.357	0.0182	0.5826
									0			0	(
		of to go	box (ft^	3)								0	(
	0.14								0.98		1	0.98	31.36
									0				
									Waste	Volum	е	1.269	40.6
o go	box												
Ū													

**Big Green** Ideas

Waste, Energy, and Water **Footprints** 



www.livegreencincinnati.com