

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

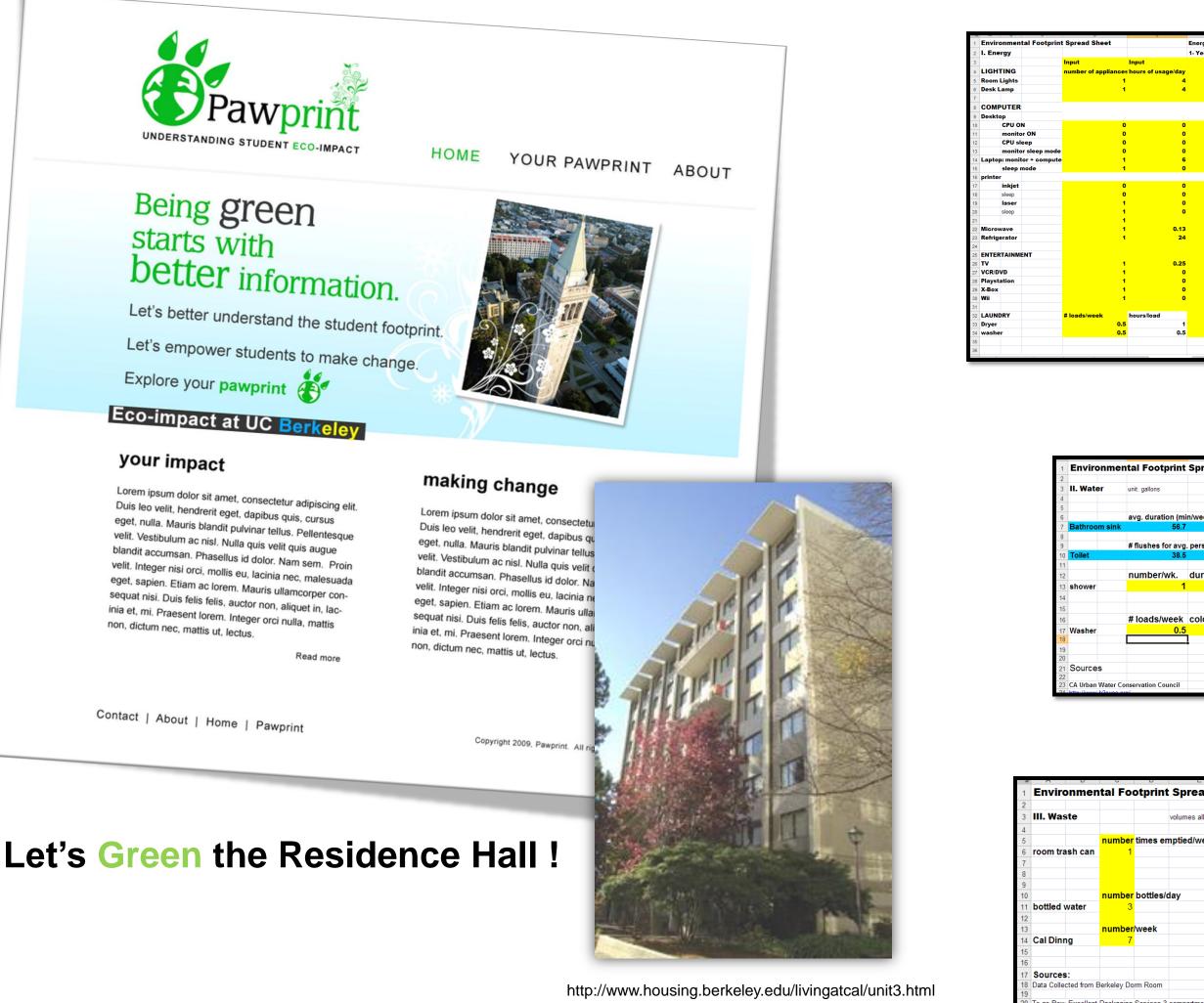
•Conduct a preliminary survey in the residence halls

Pawprint Team Members

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



Pawprint Official Website



Pawprint's Missions













Metering **Individual Units**





http://hwco.org/electric_system.htm

Footprint Calculator

Energy



1	Environmental Footprin	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

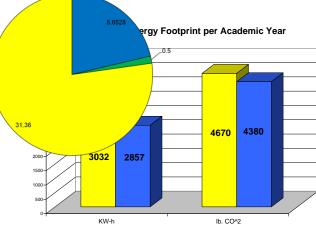
d Sheet					
fauce	t flowrate (gal/min)			gal/academic	year
2	.1		119.07	3810.2	
				0	
gals/f				0	
1	.6		61.6		
				0	
on (min)	shower flowrate (gal/min)	water savings from military shower		0	
5	2.2		11	352	
				0	
				0	
/ash?	water used for one load	energy savings by using cold wash		0	
0.5	22		11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