



UALBANY
green scene

How we saved \$70,000+ through a behavioral energy conservation competition

Cassidy Drasser
Assistant Director

Dylan Card
Sustainability Fellow

Office of Sustainability
University at Albany



UNIVERSITY
AT ALBANY
State University of New York

University at Albany

- ❖ Enrollment:

- ❖ 12,908 undergraduate students
- ❖ 4,270 graduate students

- ❖ # of residential students: 7,500

- ❖ Faculty/Staff: 4,764

- ❖ Size:

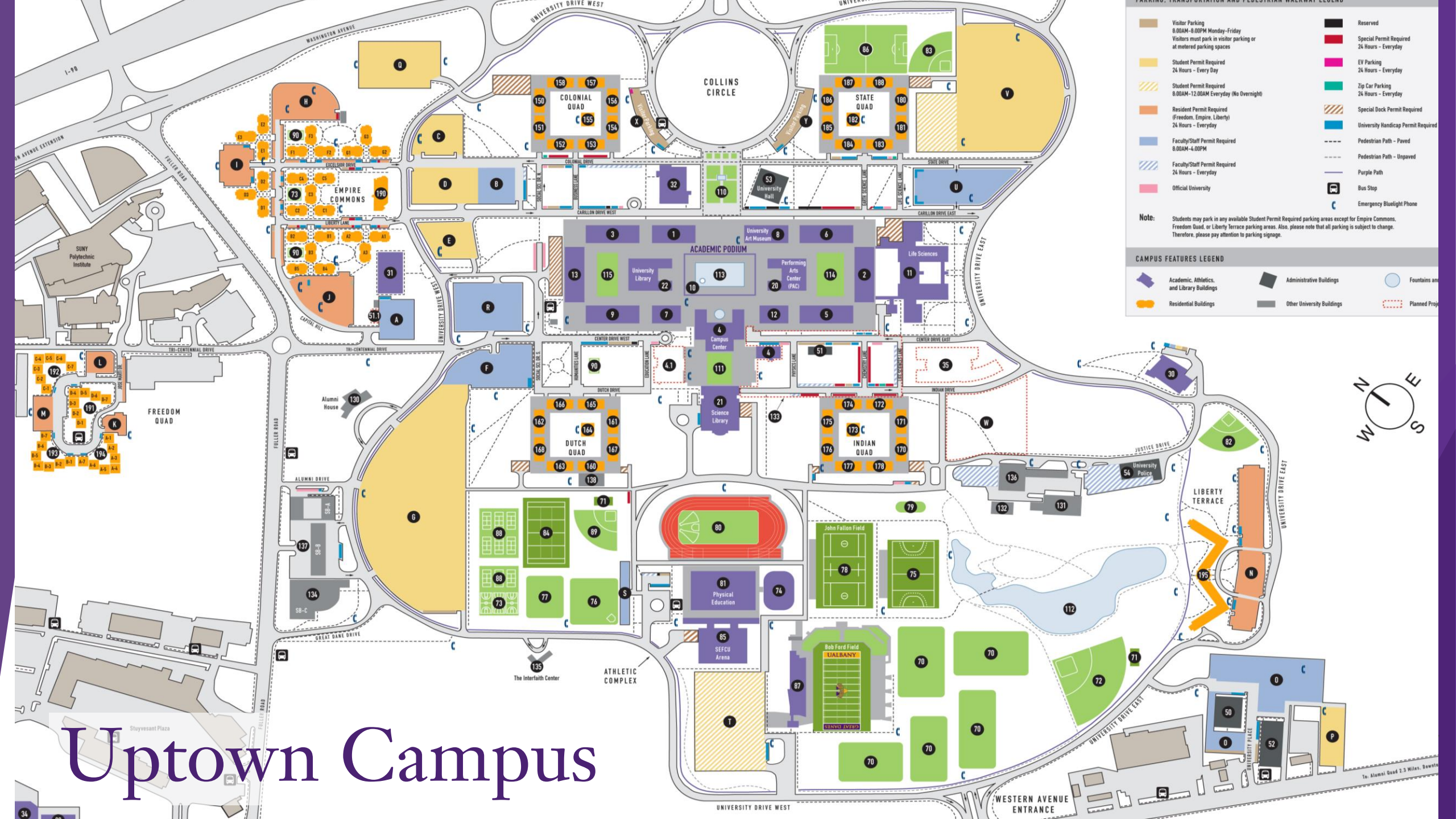
- ❖ Gross floor area of building space: 539,474 gross square meters
- ❖ Floor area of residential space: 184,351 square meters
- ❖ Floor area of laboratory space: 52,149 square meters

- ❖ Sustainability Staff:

- ❖ Mary Ellen Mallia, Director of Sustainability
- ❖ Indu, Energy Officer

What is the Energy Campaign?

- ❖ The Energy Campaign is a 10 week challenge to promote conservation of electricity
- ❖ Based solely on behavioral change and engagement
- ❖ Goal is to achieve a 10% reduction in electricity use as measured against baselines from 2005
- ❖ Engagement:
 - ❖ Students: Residence Halls and University Apartments
 - ❖ Faculty/Staff: Academic Buildings and Support Buildings
- ❖ Funded by:
 - ❖ University Auxiliary Services Grant → \$2,000
 - ❖ Facilities Management - Energy Officer → Light Bulbs



PARKING, TRANSITATION AND PEDESTRIAN WALKWAY LEGEND

Visitor Parking 8.00AM-8.00PM Monday-Friday Visitors must park in visitor parking or at metered parking spaces	Reserved
Student Permit Required 24 Hours - Every Day	Special Permit Required 24 Hours - Everyday
Student Permit Required 9.00AM-12.00AM Everyday (No Overnight)	EV Parking 24 Hours - Everyday
Resident Permit Required (Freedom, Empire, Liberty) 24 Hours - Everyday	Zip Car Parking 24 Hours - Everyday
Faculty/Staff Permit Required 9.00AM-4.00PM	Special Dock Permit Required
Faculty/Staff Permit Required 24 Hours - Everyday	University Handicap Permit Required
Official University	Pedestrian Path - Paved
	Pedestrian Path - Unpaved
	Purple Path
	Bus Stop
	Emergency Bluetooth Phone

Note: Students may park in any available Student Permit Required parking areas except for Empire Commons, Freedom Quad, or Liberty Terrace parking areas. Also, please note that all parking is subject to change. Therefore, please pay attention to parking signage.

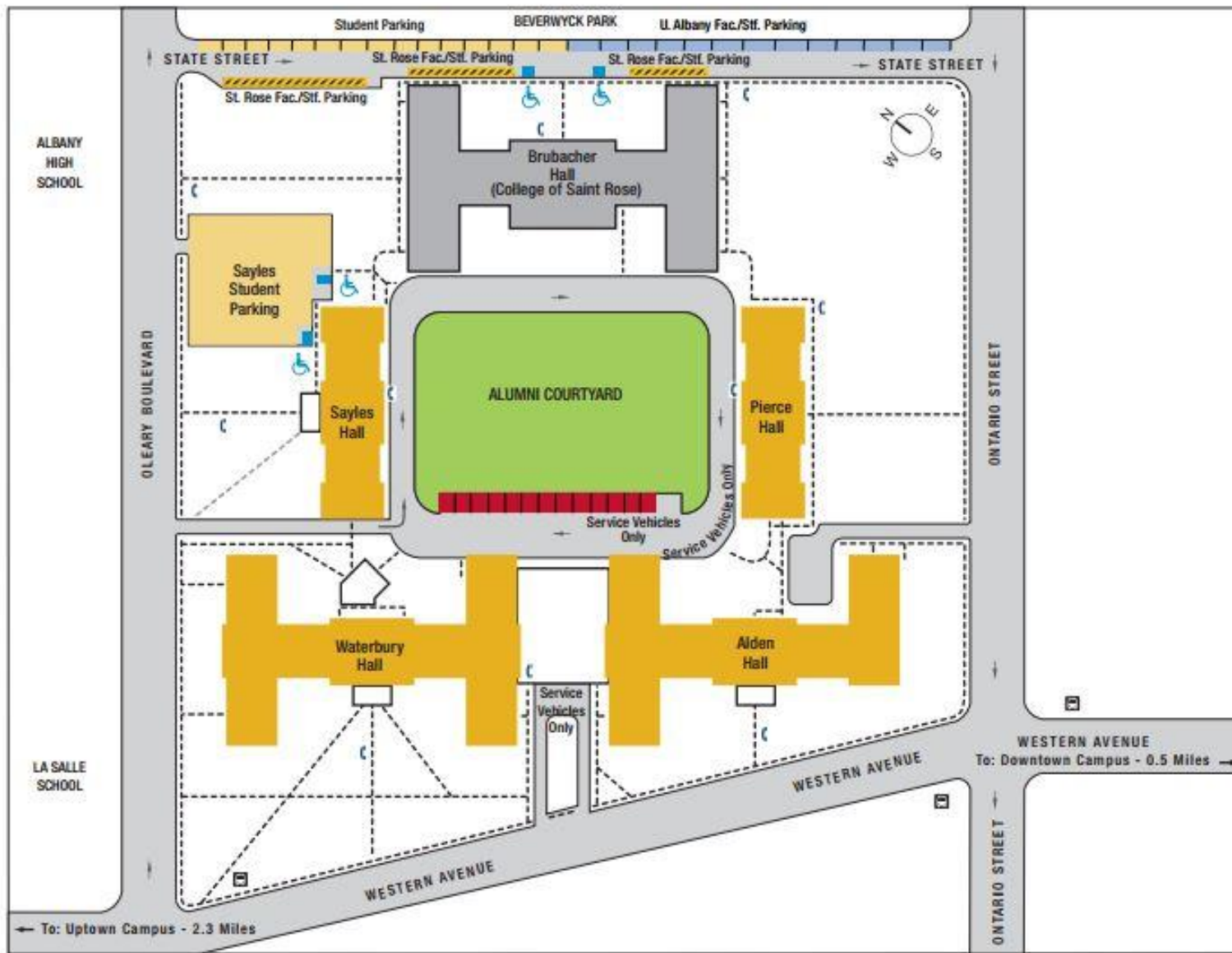
CAMPUS FEATURES LEGEND

Academic, Athletics, and Library Buildings	Administrative Buildings	Fountains and
Residential Buildings	Other University Buildings	Planned Proj

Uptown Campus



To Alumni Quad 2.3 Miles. Downtown



Alumni Quad

Energy Reads

- ❖ Our Energy Officer, Indu, sends us data weekly on buildings around campus that she has access to on her energy dashboard
- ❖ Manually read energy data from Freedom Apartment, Empire Commons and Alumni Quad each week during the campaign
 - ❖ Each Wednesday during the Energy Campaign
 - ❖ Combine this data with remotely read data from all other campus buildings to track the University's energy usage



Building	Baseline	Actual	Savings	% Reduction	2008 (2006 for quads) Fall Average kW	2016 kW Goal	Baseline kWh	Actual kWh	Week 1 savings	% savings	2008 (2006 for quads) Fall Average kW	2016 kW Goal	Baseline kWh	Actual kWh	Week 2 savings	% savings	2008 (2006 for quads) Fall Average kW	2016 kW Goal
Alumni	233790	200220	33570	14%	222.2	200.0	37325	38080	-756	-2%	222.2	200.0	37325	34820	2505	7%	222.2	200.0
Downtown Campus	197008	197009	0	0%	193.1	173.8	32441	32441	0	0%	193.1	173.8	32441	32441	0	0%	188.9	170.0
Empire	441777	363709	78068	18%	415.0	373.5	69719	68176	1543	2%	415.0	373.5	69719	75349	-5630	-8%	415.0	373.5
Freedom	110882	66720	44162	40%	110.0	99.0	18481	11840	6641	36%	110.0	99.0	18481	11520	6961	38%	110.0	99.0
Arts and Sciences	203114	186203	16912	8%	210.0	189.0	35284	30299	4985	14%	210.0	189.0	30990	30744	246	1%	210.0	189.0
Biology	160024	178920	-18896	-12%	154.3	138.9	25928	28224	-2296	-9%	154.3	138.9	28156	30744	-2588	-9%	154.3	138.9
Business Admin	134363	112560	21803	16%	136.8	123.1	22981	19488	3493	15%	136.8	123.1	21219	18312	2907	14%	136.8	123.1
Business Building	90323	117936	-27613	-31%	110.0	99.0	18480	19488	-1008	-5%	108.0	97.2	18151	20664	-2513	-14%	87.7	78.9
Chemistry	448355	415296	33059	7%	444.8	400.3	74726	69888	4838	6%	444.8	400.3	74726	69720	5006	7%	444.8	400.3
Colonial	428462	365726	62736	15%	392.7	353.4	65969	63662	2307	3%	392.7	353.4	65969	62160	3809	6%	416.1	374.5
Dutch	477457	405450	72007	15%	442.7	398.4	74365	69618	4748	6%	442.7	398.4	74365	67872	6493	9%	462.6	416.4
Earth Science	143240	124992	18248	13%	142.1	127.9	23873	20328	3545	15%	142.1	127.9	23873	22176	1697	7%	142.1	127.9
Education	58517	52819	5698	10%	59.1	53.2	9923	8904	1019	10%	59.1	53.2	9413	8753	660	7%	59.1	53.2
Fine Arts	124800	120456	4344	3%	126.4	113.7	21233	19152	2081	10%	126.4	113.7	19760	19824	-64	0%	126.4	113.7
Humanities	98555	85747	12808	13%	98.7	88.8	16579	14952	1627	10%	98.7	88.8	16579	15658	921	6%	98.7	88.8
Indian	455005	418102	36903	8%	439.2	395.3	73789	74038	-249	0%	439.2	395.3	73789	71064	2725	4%	451.3	406.2
Lecture Center	357615	340704	16911	5%	354.8	319.3	59603	56280	3323	6%	354.8	319.3	59603	58800	803	1%	354.8	319.3
Liberty Terrace	277863	289765	-11901	-4%	315.1	283.6	52937	55405	-2468	-5%	315.1	283.6	52937	51240	1697	3%	246.6	221.9
Life Sciences	670005	724943	-54937	-8%	681.5	613.4	114495	123774	-9278	-8%	687.0	618.3	124202	123774	428	0%	575.4	517.8
Performing Arts Center	93923	93458	465	0%	93.2	83.9	15654	15691	-37	0%	93.2	83.9	15654	15187	467	3%	93.2	83.9
Physical Education	247227	243306	3921	2%	248.0	223.2	41668	46536	-4868	-12%	248.0	223.2	41668	43386	-1718	-4%	248.0	223.2
Physics	125551	111888	13663	11%	124.7	112.2	20951	18816	2135	10%	124.7	112.2	20951	18984	1967	9%	124.7	112.2
Science Library	299587	276192	23395	8%	308.7	277.8	51858	48552	3306	6%	280.9	252.8	47191	47208	-17	0%	308.7	277.8
SEFCU	165325	143334	21992	13%	164.0	147.6	27554	24008	3546	13%	164.0	147.6	27554	23733	3821	14%	164.0	147.6
Social Sciences	122511	94682	27829	23%	124.3	111.9	20883	17605	3277	16%	124.3	111.9	19490	16130	3360	17%	124.3	111.9
State	488052	413120	74931	15%	452.1	406.9	75954	72584	3370	4%	452.1	406.9	75954	70056	5898	8%	474.7	427.2
University Hall	63504	65157	-1653	-3%	63.0	56.7	10584	10937	-353	-3%	63.0	56.7	10584	10752	-168	-2%	63.0	56.7
University Library	400849	385560	15289	4%	399.8	359.9	67173	65184	1989	3%	399.8	359.9	64982	64512	470	1%	399.8	359.9
	7117685	6593974	523711	7%			1022443	963114	29030	3%			1017759	981452	36307	4%		

Energy Reads

- ❖ Results are then posted on our website for the public to see
- ❖ We also send out weekly emails with results

Environment	Residential Building	Percent Reduction	KWH Saved	Carbon Dioxide Saved (in tons)
Events & News	Alumni	14%	33570	12.5
Resources	Colonial	15%	72007	26.9
Giving	Dutch	13%	18248	6.8
	Empire	18%	78068	29.1
Check out this month's edition of the Sustainability Bulletin!	Freedom	40%	44162	16.5
	Indian	5%	16911	6.3
	Liberty	-8%	-54937	-20.5
	State	-3%	-1653	-0.6
	Academic Buildings	6.3%	331035	123.5
	Dorms & Apartments	8.3%	206376	77.0
	CAMPUS TOTAL	6.92%	537411	200.5

Comments? Questions? E-Mail Us!

Sustainability Bulletin

 **aashe member**
Association to Advance Collegiate Schools of Business International

 **SIGNATORY OF**
AMERICAN COLLEGE & UNIVERSITY PRESIDENTS' CLIMATE COMMITMENT

 **332 GREEN COLLEGES**
The Princeton Review
 2014 EDITION

Students

- ❖ Dorms and Apartments compete to reduce their energy consumption
 - ❖ Dorms - by 10%
 - ❖ Apartments - by 25%
- ❖ After each campaign, a portion of money saved is given back to Residential Life for operational upgrades/renovations, bike share
- ❖ New this semester: if residential areas reach their goal, they win funds for sustainability programming - up to \$2,000 per living area

Faculty & Staff

- ❖ Encourage each building to reduce their consumption by 10%
- ❖ Energy Checks/Emails - Positive Reinforcement
- ❖ Social Media Campaign:
 - ❖ **Take the Stairs Tuesdays** - post a video or photo of their office taking the stairs, tag our office and #UAlbanyEnergy to be entered into a raffle for an office breakfast
- ❖ **Power Down Fridays**



Bi-Weekly Themes

- ❖ Bi-weekly themes are created around specific actions and events
 - ❖ 9/7-9/20: Pledge to Conserve
 - ❖ 9/21-10/4: Think Outside the Bulb
 - ❖ 10/5-10/18: Watts on? Turn it off!
 - ❖ 10/19-11/1: Slay Energy Vampires
 - ❖ 11/2-11/13: Give it a Rest
- ❖ Highlighted on weekly emails and Facebook

Weekly Emails

- ❖ Each week, we send out an email, one targeted for students and the other for faculty/staff with results
- ❖ Call out poorly performing living areas and academic buildings
- ❖ Target specific actions and tips connected to bi-weekly theme
- ❖ Use persuasive questions: *Did you unplug your phone charger this morning?*

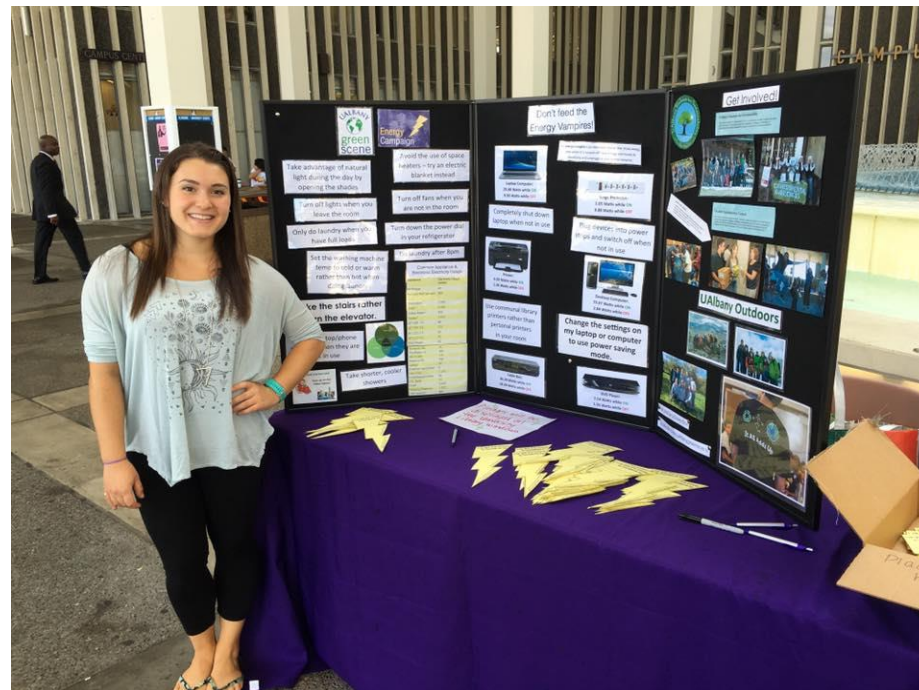


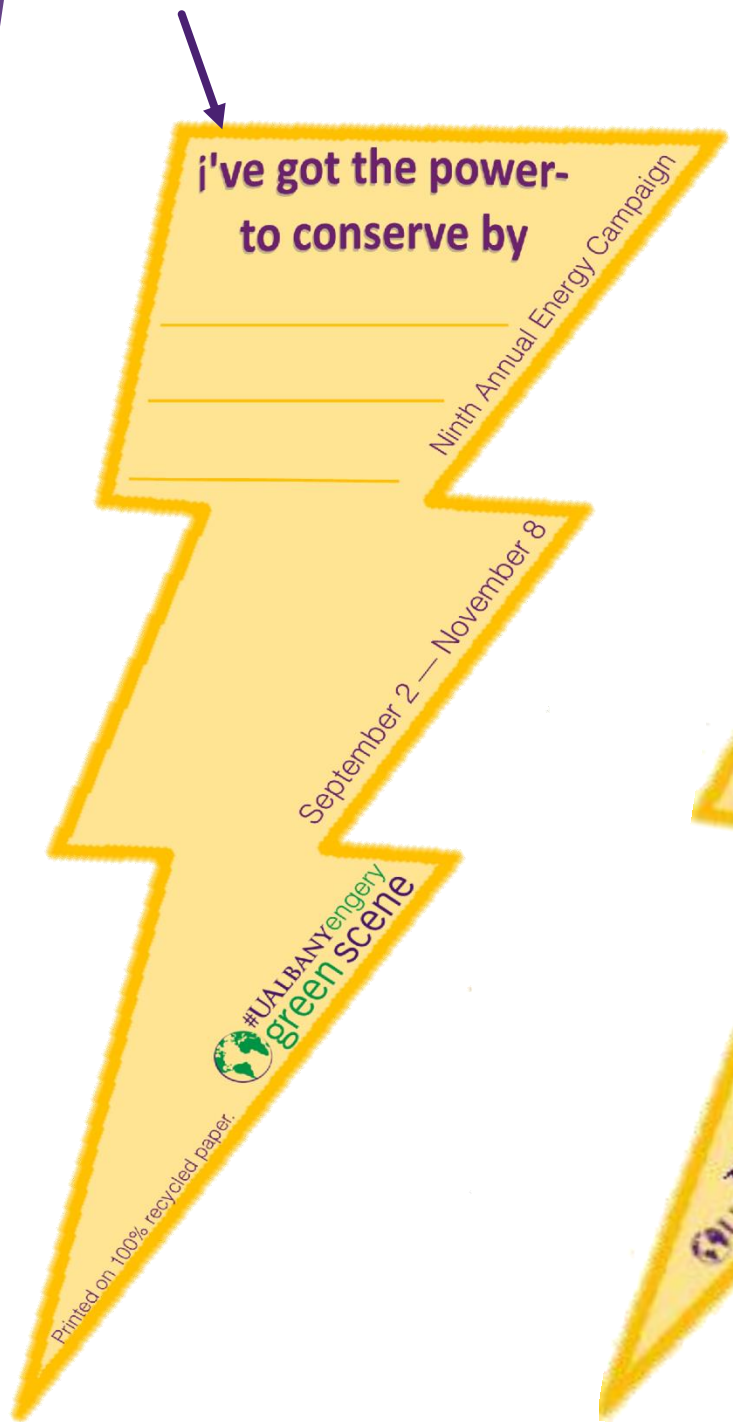
#UAlbanyEnergy



Initial Outreach

- ❖ During the first two weeks, students, faculty and staff sign Energy Pledges
 - ❖ Podium Series
 - ❖ Office storming





Last year in energy usage &
CO2 emissions,
Business Administration Used:

	BA	vs.	UAlbany
Kilowatt Hours	1,095,702		69,775,050
Kilowatt Hours per square foot	11.1		15.5
CO2 Emissions (metric tons)	756		48,113

You've got the power-
to conserve!



- ❖ Partnership with our University Library
 - ❖ Display and provide additional blank pledges for students to sign throughout the campaign



Energy Checks

- ❖ Goal: To reduce energy usage in the academic buildings
- ❖ Student volunteers meet Wednesdays and target specific academic buildings to “check” if lights, computers, etc. are turned off
- ❖ Go through buildings, which are using more energy than their baselines
 - ❖ Unable to get into offices
 - ❖ Leave energy tickets and stickers as a reminder to turn off lights and computers
- ❖ We use this data to follow up with the next week’s energy numbers to see if there was a decrease in energy consumption

Energy Checks

If it's still bright ...



Turn out the light!



Watts on?



Turn it off!



You've got the power-to conserve!



While you were out, the Energy Team stopped by and here's what we found:

Yes No

- The overhead lights in the room were turned off.
- The task lighting was turned off.
- Computer(s) were shut down.
- Monitors, speakers and desktop printers were turned off or unplugged.
- Chargers and other plugged-in devices were turned off at power strip or
- The ventilation registers were free of obstructions.
- All the windows were closed.
- No space heaters were plugged in.



Thank you for doing your part to save energy!

 Printed on 30% recycled material.



Power Down Fridays

- ❖ Goal: To reduce energy usage over weekends and break periods.
- ❖ Students target communal spaces such as Lecture Centers
- ❖ Turn off all of the lights, computers, projectors, etc.



Power Down Fridays

- ❖ Encourage faculty/staff to participate in Power Down Fridays since students can't enter their offices.
 - ❖ Turn off lights in office, as well as in any unoccupied classroom, lab, conference rooms, break rooms and restrooms
 - ❖ Properly shut down computer
 - ❖ Unplug or turn off power strip, monitors, speakers, personal copiers/printers, task lighting, chargers and other devices
 - ❖ Close windows and draw the shades/blinds
 - ❖ Shut down fume hoods that are not required to be operational after hours, make sure no chemicals or hazardous materials are stored under the hoods

Targeted Outreach

- ❖ Goal: Increase outreach to poor performing buildings
- ❖ University Hall - administrative building on campus
 - ❖ Performing way above their baseline usage during the first half of the campaign
 - ❖ On the ground intelligence told us that conference rooms lights, computers and projectors and kitchens lights are always on
 - ❖ We realized that they were not included in the initial “Pledge to Conserve” office storming, so a student went around to the offices, had them sign and put up their pledges, put stickers next to lights and computers to remind staff to turn them off when they weren’t in use, and set up table tents in conference rooms with tips on ways to conserve energy
 - ❖ In the following weeks, they displayed energy savings below their baseline

Change-A-Light Program

- ❖ Goal: Replace incandescent bulbs and properly dispose of non-functioning CFLs
- ❖ RA's host Change a Light programs throughout the Energy Campaign
 - ❖ Residents switch out bulbs
 - ❖ Donate working incandescent bulbs to the Northeast Regional Food Bank
 - ❖ Dispose of non-functioning CFLs to EHS



Green Your Space

- ❖ Goal: Give residential students tips on how they can conserve energy in their apartments and dorms.
- ❖ An RA volunteer's their dorm or apartment for the program
 - ❖ Tape up tips around the apartment or dorm room
 - ❖ Open their room for students to view the tips, sign an Energy Pledge and make DIY green cleaner

Apartments

- ❖ Target:
 - ❖ Dishwasher
 - ❖ Washing Machine
 - ❖ Lights - Daylighting
 - ❖ Benefits of Energy Star Appliances
 - ❖ Water Usage - showers, leaky faucets
 - ❖ Extension Cord vs. Surge Protectors
 - ❖ Incandescents vs CFLs
 - ❖ Waste Reduction and Recycling
 - ❖ Thermostat

Dorms

- ❖ Target:
 - ❖ Daylighting
 - ❖ Washing Machine - full loads, cool water, after 8 pm
 - ❖ Surge Protectors
 - ❖ Showers - shorter, cooler
 - ❖ Chargers - unplug
 - ❖ Recycling

Empire Commons Energy Bills

- ❖ Goals:
 - ❖ To remind residential students living in apartments of their energy usage
 - ❖ Prepare students for the “real world”
- ❖ Since we read the meters at Empire Commons, we issue monthly mock energy bills to students so they can see how much their energy bill might be if they were living off campus
 - ❖ Can view individual apartment energy usage

Empire Commons Energy Bills

❖ First, the monthly data is put into our Billing System

		CONC	1	2	USAGE	MAX	MIN	AVG	
A1	304	A1 304				0	0	0	#DIV/0!
A1	303	A1 303				0	0	0	#DIV/0!
A1	301	A1 301				0	0	0	#DIV/0!
A1	HP#1	A1 HP#1				0	0	0	#DIV/0!
A1	HP#4	A1 HP#4				0	0	0	#DIV/0!
A1	204	A1 204				0	0	0	#DIV/0!
A1	203	A1 203				0	0	0	#DIV/0!
A1	201	A1 201				0	0	0	#DIV/0!
A1	302	A1 302				0	0	0	#DIV/0!
A1	102	A1 102				0	0	0	#DIV/0!
A1	104	A1 104				0	0	0	#DIV/0!
A1	103	A1 103				0	0	0	#DIV/0!
A1	101	A1 101				0	0	0	#DIV/0!
A1	202	A1 202				0	0	0	#DIV/0!
A2	101	A2 101				0	0	0	#DIV/0!
A2	103	A2 103				0	0	0	#DIV/0!
A2	104	A2 104				0	0	0	#DIV/0!
A2	102	A2 102				0	0	0	#DIV/0!
A2	201	A2 201				0	0	0	#DIV/0!
A2	203	A2 203				0	0	0	#DIV/0!
A2	204	A2 204				0	0	0	#DIV/0!
A2	202	A2 202				0	0	0	#DIV/0!
A2	301	A2 301				0	0	0	#DIV/0!
A2	303	A2 303				0	0	0	#DIV/0!
A2	304	A2 304				0	0	0	#DIV/0!
A2	302	A2 302				0	0	0	#DIV/0!
A2	HP#1	A2 HP#1				0	0	0	#DIV/0!
A2	HP#4	A2 HP#4				0	0	0	#DIV/0!
A3	304	A3 304				0	0	0	#DIV/0!
A3	303	A3 303				0	0	0	#DIV/0!
A3	301	A3 301				0	0	0	#DIV/0!
A3	HP#1	A3 HP#1				0	0	0	#DIV/0!
A3	HP#4	A3 HP#4				0	0	0	#DIV/0!
A3	204	A3 204				0	0	0	#DIV/0!
A3	203	A3 203				0	0	0	#DIV/0!
A3	201	A3 201				0	0	0	#DIV/0!
A3	302	A3 302				0	0	0	#DIV/0!
A3	102	A3 102				0	0	0	#DIV/0!

Max	Min	Avg
0	0	#DIV/0!

Billing Cycle:
October

//The SUM column is used on "Bill" for each apartment
//1, 2, represent the 2 reads for electricity consumption


Do not load usage from the following apartments:
B3 102
C3 105
D2 104
D2 102
F2 102
F2 104

Empire Commons Energy Bills

- ❖ Names are populated by a roster provided by Residential Life
- ❖ Energy data for the month is then entered and the estimated cost based on current electricity prices in the Albany area

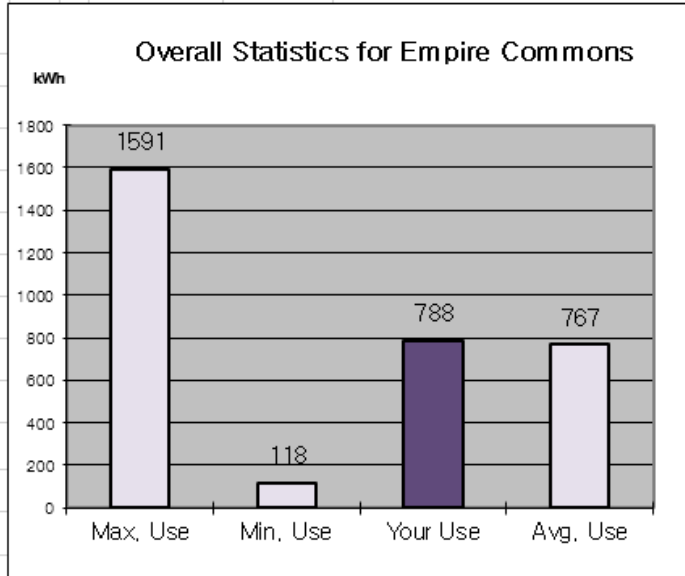


Empire Commons Energy Bills

 **SUNY University at Albany Electricity Bill**

Customers :	Address :
RM 1 [REDACTED]	1400 Washington Ave
RM 2 [REDACTED]	Empire Commons C4 303
RM 3 [REDACTED]	Albany, NY 12222
RM 4 [REDACTED]	

Overall Statistics for Empire Commons



Category	Usage (kWh)
Max. Use	1591
Min. Use	118
Your Use	788
Avg. Use	767

Total Usage : 788 kWh ☹️

Billing Cycle: September

Current Electricity Charges Detail			Price (\$)
Delivery	788 kWh	@ 0.117	92.20
SBC/RPS	788 kWh	@ 0.00226	1.78
Total Amount			\$93.98
Total Amount:			93.98
Tax (4%):			3.76
Anticipated Grand Total:			\$97.74

Please Note: Do not pay this bill! This is a simulation utility bill to demonstrate the cost of electricity in your apartment.

** SBC : These charges reflect costs associated with mandated public policy programs*

Click to run the AutoPrint Macro

Empire Commons Energy Bills

SUNY University at Albany Electricity Bill

Customers : [Redacted]
 RM 1 [Redacted]
 RM 2 [Redacted]
 RM 3 [Redacted]
 RM 4 [Redacted]

Address :
 1400 Washington Ave
 Empire Commons C4 303
 Albany, NY 12222

Total Usage : 788 kWh ☹️

Billing Cycle: September

Current Electricity Charges Detail				Price (\$)
Delivery	788	kWh	@ 0.117	92.20
SBC/RPS	788	kWh	@ 0.00226	1.78
Total Amount				\$93.98
Total Amount:				93.98
Tax (4%):				3.76
Anticipated Grand Total:				\$97.74

Overall Statistics for Empire Commons

Category	Usage (kWh)
Max. Use	1591
Min. Use	118
Your Use	788
Avg. Use	767

Please Note: Do not pay this bill! This is a simulation utility bill to demonstrate the cost of electricity in your apartment.

* SBC : These charges reflect costs associated with mandated public policy programs

Click to run the AutoPrint Macro

Empire Commons Energy Bills

- ❖ The reverse side of the bill is used as a place to put energy saving reminders and special sustainability themed events

Seasonal Ways to Save Energy



Use **timers** to control power usage by turning the holiday lights on at dusk and turning them off at a desired time. Consider replacing older strings of holiday lights with more energy efficient LED lights.



Appliances will keep using electricity even if you are not there. **When leaving for break, unplug televisions, stereos, computers, VCRs, etc.,** since these all draw small amounts of electricity even when they are turned off. Unplug any refrigerator that does not contain perishable food. Leaving your phone, laptop or tablet chargers plugged in **still** draws energy even when the device isn't attached.

Empire Commons Energy Bills

❖ Impacts:

- ❖ Since apartment students have more control over their energy usage than any other place on campus, they tend to have a large impact
- ❖ Numbers during the energy campaign typically show students here are reducing their energy by nearly 20%
- ❖ Word of mouth from RAs and RDs say that students like the program and say it has encouraged behavioral changes that can help them save money in the long run

Energy Campaign Reveal Ceremony

- ❖ Goal: reveal the results of the energy campaign
- ❖ Award academic buildings that met their goal, most improved, honorable mentions, etc.
- ❖ Award the winning living areas



Challenges

- ❖ We usually save about 1 million kWh over the 10 weeks, so the amount we save depends on the rate of electricity at that particular time
- ❖ Need to recalculate baselines
 - ❖ 10 years old
 - ❖ Faculty/Staff that have traditionally done well during the campaign because they are “good” conservers of energy may be in buildings that are being utilized more for conferences, meetings, classes, etc. than in the past. So their conservation efforts are not being shown in highly utilized buildings and the baseline needs to be recalculated to represent that
 - ❖ Very poor performing buildings - in the negative savings - are hurting the overall campus totals and the academic building totals - some buildings may have technology that is unaccounted for and is causing huge electricity spikes

You've got the power-
to conserve!

