

Going Green Together

Good Day Sunshine: Wheelock Uses Solar RECs for LEED

"It's sort of a weird thing to say you're buying, as an institution, because it is not tangible," describes Ed Jacques, *Wheelock College's* Director of Facilities.

Jacques is referring to Solar Renewable Energy Credits, or SRECs, which is a tradable credit that represents all the clean energy benefits of electricity generated from a solar electric system. Each time a solar electric system generates 1,000 kWh of electricity, a SREC is issued which can then be sold or traded separately from the power.



"When we completed major renovations to the Riverway Building and constructed the Campus Center several years back, we researched and ultimately purchased SRECs to achieve LEED status on those projects," explains Jacques. Wheelock worked with a company called The Greener Engineer to purchase the SRECs. "It was definitely an investment on our part because it costs more to purchase SRECs than straight up kWh's but the return-on-investment is that the solar recs are sustainable," adds Jacques.

An additional benefit to the initial investment to purchase SRECs is that it enabled Wheelock to achieve LEED Gold status for its new Campus Center (58,000 square feet) and Silver LEED status for the renovated Riverway Building (32,000 square feet).

"As part of our overall energy savings planning, Wheelock has been working with PowerOptions, a New England based energy consortium. With over 500 members - some here in the LMA - PowerOptions has the leverage to negotiate beneficial pricing, as well as contract terms and conditions and helps bring predictability, dependability and cost savings to nonprofits," says Jacques.

PowerOptions negotiated a long term agreement with Direct Energy. "It gives us the upper hand in buying power as if we were consuming energy for a huge national company, versus a small boutique college in Boston," explains Jacques.

Wheelock College continues to explore additional opportunities with these same goals in mind.

How Fit is Your Commute?

Last August MASCO asked commuters to submit their best commuting fit tip to MASCO via our website and then "like" the tips that others sent in. In September, we asked commuters to submit how many miles they walked, ran or cycled each week. The results were amazing!

Top Participants			
Mode	Name	Institution	Miles
Walking	Joao P.	HMS	488.9
Biking	Shawn G.	BIDMC	687.9
Running	Nelson K.	Chan SPH	203.6

Per capita, it breaks down to 180 people walking 72.8 miles each, 67 people biking 99.5 miles, and 78 people running 45.6 miles over the course of September.

Fast Facts	
Total Number of Registrants	270
Number of Represented Institutions	16
Total Walk in (miles)	13,101.79
Total Bike (miles)	6667.95
Total Run (miles)	3556.3



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Pictured: Shawn G. BIDMC, the winner of Bike category of this year's CommuterFit Challenge! See the back cover for more.

Green Spotlight

"Let it Bee"

Love those veggies and fresh flowers? Have a glorious green garden to brag about? Well, thank a bee. Or a colony of bees, that it is.

Spurred by a 30% loss of bees over the last decade there is renewed interest in urban beekeeping.



Above: A bee at work

"The idea of beekeeping at the college was entirely student driven," says Charles Hill, an adjunct professor of science at *Wheelock College* and whose students have been at it for two years.

"One of my students was doing her teaching practicum in Jamaica Plain and the classroom had a beehive. The hive was donated and set up by a bee enthusiast from Cambridge, Jeff Murray, whose daughter is also a beekeeper at Allandale Farm in Brookline. My students collectively decided that this was a great thing to bring to Wheelock so they wrote a grant to fund a hive at the school," he explains.

Bees are crucial to the pollination process for producing fruits, nuts and vegetables, or about one third of what we eat and are essential to the nation's food industry.

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Green News and Kudos

Wentworth Leads the LMA with their Green Revolving Fund

"About five years ago *Wentworth Institute of Technology (WIT)* went through a significant planning process to determine what new direction we wanted the school take," explains Robert Totino, WIT's Vice President of Finance. "We decided that one initiative we could all really get behind was 'greening the campus.' Mike Pankievich, our Assistant Vice President for physical facilities, suggested we start with some small seed money, about \$25,000, and identify projects where we could upgrade elements of buildings and realize some cost and energy savings," says Totino.

"We focused on low hanging fruit, so to speak. One of the first and pretty obvious places identified was in lighting our campus," explains Pankievich. "We replaced old lights in the older buildings with LED lights and realized a significant energy and financial savings. We used money from our electricity account for the project, and once the return-on-investment was realized we put the money into what we call the "green revolving fund" to fund a variety of other projects," he explains.

"We have a very active and involved student body who participate in our sustainability committee, through which all prospective projects using the green revolving fund get "greenlighted."

Green Revolving Funds (GRFs) are tools often used on academic campuses. Some 80 institutions in North America had over \$118 million in GRFs in 2013¹. Their use is growing in hospitals as well, with Cleveland Clinic committing to a \$7.5 million GRF in 2016 as part of the Sustainable Endowment Institute's (SET) Billion Dollar Green Challenge. Participants in MASCO's Sustainability Committee learned about this challenge and GRF investments at the June 2015 meeting.

¹ <http://greenbillion.org/wp-content/uploads/2012/11/Greening-the-Bottom-Line-2012.pdf>



Green Spotlight, continued

According to a report by the Xerces Society, an international nonprofit organization that protects wildlife through the conservation of invertebrates and their habitats, "native pollinators in the U.S provide essential pollination services to agriculture which are valued at more than \$19 billion² annually." While there are 25,000 species of bees worldwide, only 4,000 exist in the U.S. and of those, only 200 are native to New England. Nationally and locally there is growing concern about the acceleration of bee colony collapse. Possible causes include loss of habitat, invasive parasites, climate change and harsh winter weather.

"At Wheelock, the students were able to purchase a Queen Bee, aptly named her Queen Lucy Wheelock, and segregate her for seven days so the 'worker bees' (the pollinators) would assimilate to her pheromones and essentially not kill her," explains Hill.

"The bees have free reign to go outside the lab via a tube system we rigged up, do their bee thing and come back to the hive. It's wonderful exposure to urban beekeeping for the students. It's much easier to keep and grow hives in urban areas than rural areas that are subjected to pesticides and environmental hazards," he adds.

Wheelock's urban beekeeping program is in its second year. The first year the students got a late start and the hive died off. "This year we are looking forward to harvesting some wonderful, organic Boston grown honey," reveals Hill.

To learn more about Wheelock's Queen Bee Lucy and her hive, contact Charles Hill at chill@wheelock.edu.



² <http://www.onegreenplanet.org/animalsandnature/when-bees-go-extinct-these-foods-will-follow/>

Going Green Saves Green

Committed to a Responsible Energy Footprint

Over the past 12 years *Boston Children's Hospital (BCH)* has been finding ways to reduce energy costs and its GHG (greenhouse gas) footprint. As new technology and manufacturing of highly energy efficient products change the landscape, BCH used these products to reduce both.

Their most recent Energy Initiative focused on all exterior lighting as well as retrofitting the lighting in the Patient and Karp garages in addition to stairwells and roof lighting on campus.

Connerty says that "Eversource has been and continues to be a fantastic partner on projects like this. With a cost of about \$500,000 to do the lighting project, about 23% of the financing came from supportive initiatives from Eversource."

"We have set our construction standards to include only highly efficient products. And we perform energy studies on all major projects to guide us to the most cost-effective and energy efficient buildings we can design."

In addition to the lighting upgrades, Connerty says that BCH has worked with Eversource on every project large and small to ensure BCH receives as much shared cost as possible. For example, Connerty clarifies that, "Eversource was a real partner in the upgrade of our operating rooms (ORs) from the design stage to completion. By focusing on unneeded air exchanges in our ORs and devising a schedule to allow us to ramp up or down whenever surgery is scheduled, this has contributed to a remarkable energy saving we never thought possible by simply controlling the ventilation of rooms."

"In today's changing world it is our responsibility as well as commitment to do the best we can to ensure all our energy needs are designed properly and to review our existing energy usage to identify areas to improve."

As for what's next? After the success found in this project, BCH is working to identify new products and systems that help them to achieve their commitment.

Be Green

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The CO² saved by this project is equivalent to nearly 40 homes' energy use for one year or close to 900,000 miles driven by an average passenger vehicle³.

With their long term Energy Team lead by Ameresco of Framingham, BCH conducted an audit of every exterior fixture. They carefully noted pre- and post- energy use (kWh) to demonstrate to Eversource actual kWh reduction of almost 75%.

"We replaced roughly 1044 lights campus wide with highly efficient LED lighting with significantly less wattage per fixture and coupled the replacement with state of the art controls to achieve our highest savings," says Jack Connerty, BCH's Utility Manager. "In our garages we replaced all fixtures with new LED fixtures with sensors to control lighting between 30-80% of the fixture output. This allowed us during daylight and unoccupancy periods to reduce down to three volts or 15 watts when the space is unoccupied," he explains.

"This was a year-plus project but it has shown significant savings. If there is no occupancy detected in the stairwells of the garages, the LED lights will ramp down to a minimum lighting level. Even just two minutes of savings adds up, when you consider we have three shifts of people and patients going through our garages over a 24-hour period," he adds.

Project Pre kWh	735,621
Project Post kWh	202,140
Project kWh Saved	533,482
EPA Calculation CO² Saved	375 metric tons
Annual Cost Savings to BCH	\$75,000

³ www.epa.gov/energy/greenhouse-gas-equivalencies-calculator