



BATTLE OF THE BUILDINGS

EPA's NATIONAL BUILDING COMPETITION



2011 Competition Wrap-Up Report

INTRODUCTION

In May 2011, EPA launched the ENERGY STAR National Building Competition: Battle of the Buildings. In its second year, the “Biggest Loser”-style competition featured teams from 245 buildings across the country in a head-to-head battle to save energy and reduce greenhouse gas emissions that contribute to climate change.

As the battle drew to a close, the competitors had saved a combined total of more than 240 million kBtus of energy and \$5.2 million on annual utility bills. They prevented greenhouse gas emissions equal to the electricity used by more than 3,600 homes a year. The top ten overall finishers achieved energy reductions of at least 30 percent, and the winner saved an impressive 63 percent in twelve months.

The ENERGY STAR National Building Competition provides a valuable platform for organizations to review and improve operations and maintenance; test innovative approaches and technologies; mobilize internal teams; and engage local communities. It also offers an enormously valuable “test-bed” for new ideas that can be expanded to entire building portfolios as well as an inventory of best practices and publicly available energy performance data that can help inform the commercial building market.

EPA congratulates all of the participants for a great competition. While one competitor came out on top, everyone wins by saving energy in the buildings where we work, play, and learn.

EVOLUTION OF A GREAT IDEA

The tremendous success of the first ENERGY STAR National Building Competition in 2010 informed the design and operation of the competition in its second year. When first introduced by EPA in 2010, the competition was conceived to be transparent, rooted in objective analysis, and work within the existing infrastructure and tools available through the ENERGY STAR program. These same attributes continued to form the foundation of the competition in 2011.

A significant enhancement in 2011 was the expansion of the pool of competitors to include any ENERGY STAR partner that applied and met the eligibility and participation requirements. EPA expanded the field of competitors from the small pool in 2010 in response to overwhelming demand from organizations interested in participating in the only national competition of its kind. This change resulted in a pool of competitors in 2011 that was nearly 18 times as large as the first field in 2010 and covered 33 states and the District of Columbia. The competition logo was updated and a new tag line, *Battle of the Buildings*, was developed to reflect this important expansion while maintaining the well-established roots of the competition.

RULES OF THE GAME

The eligibility and participation requirements for the 2011 ENERGY STAR National Building Competition included the following:

- Any ENERGY STAR commercial or industrial partner could apply by nominating one or more of the commercial facilities they own or manage.
- Any type of commercial building was eligible for the competition.
- Participants were required to benchmark and share their building’s monthly energy use for each fuel source and meter using Portfolio Manager, EPA’s ENERGY STAR online energy measurement tool.
- The competition compared a building’s weather-normalized, source energy use intensity (EUI) between two twelve-month periods (baseline period: September 1, 2009 – August 31, 2010; comparative period: September 1, 2010 – August 31, 2011).
 - Competitors participated in a mid-point “weigh-in” that identified the weather-normalized source EUI and percent-based energy reduction of each competitor as of the halfway mark.
 - Competitors agreed to educate and incorporate the building’s occupants into its energy savings plan and share information with others about steps taken to reduce energy use.
- The winner was the competitor that demonstrated the greatest percentage reduction in weather-normalized source EUI across the two data periods.
- The competitors with the greatest overall reductions were recognized as top overall finishers.
- The competitors with the greatest reductions in each building category were recognized as top category finishers.
- The EUI and square footage for the winner and each top overall finisher were verified by an independently licensed professional engineer or registered architect at the conclusion of the competition.
- Only competitors with the full 24 months of data entered into Portfolio Manager were eligible to be recognized as a winner, top overall finisher or top category finisher.
- Final energy savings, greenhouse gas emissions reductions and cost savings were not calculated for any competitors with less than 23 months of data entered into Portfolio Manager as of the end of the competition; they were designated as “N/A.”

The lessons from the second year of this landmark national competition continue to emphasize the importance of a strategic approach to energy efficiency that is grounded in the ongoing measurement, assessment and communication of actual energy performance.

COMPETITORS AT A GLANCE

The diverse field of 245 competitors represented 26 types of commercial buildings across 33 states and the District of Columbia. Buildings ranged in age from three years old to 122 years old, with eleven buildings that were 100 years old or greater. The starting “weight” of the competitors also varied, ranging from an EUI of 22 to 825. Some were using a great deal of energy and were significantly “overweight” at the start of the competition while others were already making progress and performing better than the average building. Others were simply more energy intensive due to the nature of the services they provided. The diversity of the competitors reflected the philosophy of the competition that everyone could set a goal and improve energy efficiency.

In the Spotlight



Through a series of engaging videos and media appearances, actor John Corbett of Parenthood, Sex & the City, and My Big Fat Greek Wedding encouraged the 245 teams and followers nationwide to save energy where we work, play and learn. The 2011 ENERGY STAR National Building Competition spokesperson was provided by jcpenny, EPA’s co-sponsor for these events.

DIGITAL AND SOCIAL MEDIA

The larger scale of the 2011 ENERGY STAR National Building Competition was reflected not only in the size of the competitor pool, but also in the innovative use of social and digital media tools that supported the competition. In 2010, the social portal of the competition was its website and that trend continued in 2011. One of the unique challenges of the larger field was presenting the competitors in a meaningful way on the competition website. The goal was to reflect the scope and size of the competition but also offer the opportunity for viewers to interact in a personal way with each competitor.

As a solution, EPA developed a visual gallery using flash technology where viewers could scroll through an image library of all of

@sustainableUVa :: “Tomorrow is UVa Saves Hour from 2-3pm. Turn off lights & electronics and help UVa save 6 MW!”

@CoalRidgeHS :: “Way to go @sustainableUVa! It’s amazing the awareness that can come from an hour of conservation!”

Competitors shared advice and cheered each other’s efforts through Twitter and Facebook.

the competitors, sort by building type, and then click the image to find important attributes about the building (type, location, age, size, energy use, greenhouse gas emissions reduction, and cost savings).

Another popular feature of the competition that carried over from 2010 was the live Twitter feed that kept viewers up-to-date on the activities of the competitors. This feed allowed viewers to follow along and learn about the ins and outs of energy management. It also offered a sense of real-time action rather than limiting the flow of information solely to after-the-fact reports and case studies. The Twitter feed also offered a virtual library of tips and suggestions that competitors could draw upon for ideas and solutions.

Teams from the first competition in 2010 found the peer-to-peer networking and information exchange to be extremely valuable and encouraged greater EPA

facilitation of these activities in the 2011 competition. The media also drew heavily on the transparency that the competition offered as a positive feature. In response to this demand, EPA created a Competitor Forum on the ENERGY STAR Facebook page that

In the News

National broadcast and regional print outlets as well as online and social media networking sites chronicled the launch and progress of the ENERGY STAR National Building Competition. From *Good Morning America* to *The New York Times*, this coverage helped spread the word, drive awareness, and drive greater activity.

Stories Behind the Battle

From ice cream socials to town proclamations, this year’s competitors engaged their employees and communities in exciting ways. Students toured boiler rooms, spoke at school board meetings and educated other students on ways to save energy in school. National retailers hosted internal competitions among their stores. Businesses participated in community-wide “Operation Shutdown” activities to raise awareness about how much energy could be saved. Learn more about this year’s grassroots efforts by reading the *Stories Behind the Battle* at energystar.gov/BattleOfTheBuildings

was directly accessible from the competition website and provided a public forum for competitors and other ENERGY STAR partners to exchange ideas and mentor others. With hundreds of tweets and Facebook posts by the competitors, these social media components added a unique viral element to the competition.

EPA also explored the world of interactive online advertisements as part of the competition's efforts to raise awareness among a broader, consumer-focused audience. EPA kicked-off this effort with an advertisement on USA Today.com that used a short video clip featuring the competition's celebrity spokesperson, actor John Corbett. The fixed position, expandable online ad ran for three days in conjunction with the announcement of the midpoint standings. To complement the USA Today.com presence, EPA also ran geo-targeted ads featuring images of local competitors on Weather.com over a five-week period in August. These online advertisements performed as much as 16 times better than industry averages.

BEST PRACTICES

With teams from 245 buildings pouring their creative juices and expertise into cutting energy use, the 2011 ENERGY STAR National Building Competition offers important insights into a wide-range of solutions. However, as the competitors dug deep to drive savings, many turned to the same best practices. Learn more about this year's top five best practices below, and discover how you, too, can save energy along with the competitors.

Step On the Scale

At the heart of the National Building Competition is the value of measuring energy use, and an important step to cutting energy waste is stepping on the scale. Without a starting "energy weight," followed by periodic weigh-ins, it's impossible to know if you're gaining or losing over time. Similarly, the foundation for an energy management program is tracking energy use — after all, you can't manage what you don't measure. By tracking and reporting energy use, competitors had the data necessary to inform their next steps and keep everyone engaged and accountable in saving energy.

While all competitors used EPA's ENERGY STAR online measurement and benchmarking tool, Portfolio Manager, to track energy consumption, several teams supplemented this software with their own energy tracking technologies, particularly those that track in near-real time to help identify unexpected peaks and nip problems in the bud. Reporting is an important step in an energy management program because it adds accountability, highlights success, and keeps efforts top of mind. By tracking and reporting progress, teams shared valuable information about project successes to management and ownership.

Keep an Eye Out for Innovation

Now more than ever, the market for energy efficiency is changing at an incredible pace and savings can be found in small and large ways. Several participants searched for tools and products to give their energy efficiency efforts a boost, from shower timers to renewable energy.

On the smaller side, for example, competitors gave the thumbs up to a product called the modlet. Short for "modern outlet," the modlet eliminates vampire energy use by plugging into an existing outlet.

IN PRACTICE: Keep an Eye Out for Innovation

- UNC found a simple way to help students save energy and water — the shower timer. An innovative application of an old idea, the shower timer is an inexpensive way to educate and help students curb long showers. And because energy and water use are closely related, conserving hot water is a practical way to save both resources.
- The Paul Simon Federal Building, Planet Subaru, and YWS International tracked the contributions of their PV systems.
- Brandywine Realty Trust's 500 Gulph Road purchased 2 years of green power as part of their efforts to decrease their carbon footprint during the competition.

IN PRACTICE: Step On the Scale

- Coal Ridge High School installed interval data reporting (IDR) meters that measure energy use every 15 minutes. They were also able to use these data to show students how much energy they saved during the one-hour Operation Shutdown — almost 80%!
- The University of Virginia displays the current plant energy demand for the school on its energy landing page.
- Dr. P. Phillips Hospital uses smart building metering, which also records energy use in intervals, and displays data on an intuitive energy monitoring dashboard.
- Schmidt Associates included an updated graph of their energy use in their monthly Sustainability Stan Journal.
- Northland Church posted updates to their Creation Care blog.
- The Assistant Superintendent for Twinsburg City Schools presented to the Board of Education on energy savings at Twinsburg High School.
- Hillcrest Hospital shows an online video of the COO and Administrative Director of Support Services debriefing the hospital president on the results of energy management efforts.

Users then plug in their appliances and devices and use the modlet's software to schedule the power to shut off when they're not in use.

On the more substantial side, several competitors tracked the contributions of their photovoltaic (PV) systems, which generated all or a portion of their building's energy use from the sun, and purchased green power. While using renewable energy doesn't change the amount of energy a building consumes, it can reduce the greenhouse gas emissions associated with energy production. When implemented together, energy efficiency and renewable energy can pack a powerful one-two punch in the fight against climate change.

Remember Your ABCs and 123s

There are basics to saving energy that sometimes can be overlooked, but regularly returning to these fundamentals should be a part of any sound energy management plan. These basics include operational changes, lighting improvements, and making sure equipment is running as intended (also called retro-commissioning).

Many competitors started by taking a closer look at how the building was being operated and identifying easy efficiency wins. From



Improvements at Colorado's Coal Ridge High School. From left to right: Double-checking that computers are shut down, undergoing a lighting retrofit, turning off fans at the end of the day, and installing occupancy sensors in classrooms.

shifting staff schedules to adjustments in automated controls, changes in how buildings were operated produced quick and meaningful savings.

Lighting also topped the to-do list for many competitors, and with good reason — lighting generally makes up the largest portion of a commercial building's electricity bill, accounting for more than a third of the electricity used. Teams used as much daylight as possible, especially in areas with large windows and skylights. Where only a little extra light was needed, several competitors turned to daylight harvesting, in which lighting systems adjust based on the natural light level. Others de-lamped, or took out one or more lamps per fixture, in overlit areas. Occupancy sensors were also a popular choice because they ensure lights aren't left on in empty rooms. Many competitors also upgraded existing systems with light-emitting diodes (LEDs).

Lastly, similar to a tune-up for your car, retrocommissioning is the process of making sure building systems are running as intended. Without proper maintenance, building equipment can fall into disrepair, causing energy bills to creep up over time. Competitors found

FUN FACT

Percent of eligible competitors that earned the ENERGY STAR during the competition:

37%

IN PRACTICE: Remember Your ABCs and 123s

- At Crittendon County Elementary School, the energy team worked with the custodial staff to shift from five 8-hour days to four 10-hour days during summer months, so the school could be closed for three days each week.
- Intuit 1 and 2 switched to day cleaning to reduce the length of time lighting and HVAC had to run during off hours.
- At Brandywine Realty Trust's 500 North Gulph Road, the team estimated a 35% payback on their occupancy sensors alone.
- At NYU Langone, the energy team saved more than \$2.5 million by repairing components, ensuring that measuring devices were calibrated correctly, and optimizing the system's control logic.
- At First Unitarian Society, a thorough "find and fix" effort resulted in energy savings of over \$13,000. The energy manager found and addressed numerous problems, from areas of the church that were being simultaneously heated and cooled, to controls that were installed but not being used, to fan systems that cycled on and off more than 24 times a day.



At their energy fair, Dr. P. Phillips Hospital in Orlando, Florida, offered staff free CFLs and energy-saving tips.

a gold-mine of savings through retrocommissioning, from recalibrating equipment to adjusting fan systems.

Tap the Power of People

An important key to unlocking energy savings is raising awareness through strategic communications. Teams laid the groundwork for success by getting occupants excited and involved in saving energy from the outset, then kept the ball rolling through ongoing multimedia updates and reminders. As momentum grew, teams spread the word beyond the building and into the community, creating a ripple effect of people taking action to save energy and protect the environment.

Teams raised awareness about the importance of saving energy and got everyone excited by holding events and hanging banners and signs. Teams stayed in touch throughout the competition to keep everyone engaged in saving energy. Every type of media was rolled out to spread energy-saving ideas and updates—from online blogs and dedicated web pages, to emails and newsletter articles, to signs and videos, to social media such as Twitter and Facebook. To make results more meaningful, many teams found ways to give context to potential savings. And to give occupants the chance to share their feedback and ideas, many teams actively asked for input about other ways to save energy, which could be submitted through suggestion boxes or online. As people inside the building got involved, competitors expanded their efforts to reach out to the community and media as well. All these activities caught the attention of the press, which covered competitors' stories in local newspapers, radio shows, and even TV.

Take a Comprehensive Approach

The most successful competitors had an organization-wide commitment to saving energy and took a comprehensive approach. The ENERGY STAR Guidelines for Energy Management outline the successful practices of ENERGY STAR partners, including making a commitment, assessing performance, creating and implementing an action plan, and tracking progress. These practices work most effectively when considered in light of the business needs of an organization.

IN PRACTICE: Take a Comprehensive Approach

- Sixth-place finisher Fannie Mae took on several projects to improve energy efficiency by more than 30 percent, including:
 - Retrofitting interior lighting, which reduced electricity consumption by over 20 percent,
 - Replacing 50-year-old heating boilers with new high efficiency units, which improved fuel utilization by over 40 percent while reducing emissions by over 30 percent,
 - Improving high efficiency air filtration system,
 - Adding variable speed drives to new higher efficiency domestic water pumps.

But Fannie Mae isn't just working on improving their own buildings. As an industry leader they are also engaging in efforts to gather important energy performance data for the multifamily marketplace and to develop innovative financing mechanisms to unlock energy efficiency opportunities for multifamily and commercial buildings.

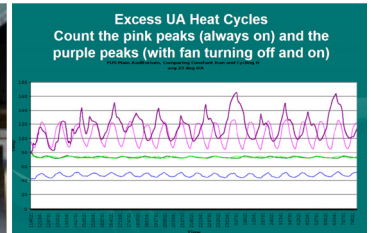
- Office Depot has two buildings that placed among the top overall finishers and was recognized by EPA in 2010 as an ENERGY STAR Leader for improving energy efficiency across all of their stores and buildings by more than 20%. This national retailer has committed to a goal of reducing its absolute carbon footprint by 25%, and has actively worked to make all of its stores more efficient by investing over \$20M in energy-saving measures.
- Wylie Independent School District owns and manages fourth-place finisher Hartman Elementary. The school district has earned the ENERGY STAR for 14 of their 19 schools as part of a 2-year project to conserve energy.

IN PRACTICE: Tap the Power of People

- The University of Virginia O-Hill Dining Hall held a kick-off event, attended by more than 60 people, where they gave out posters and pamphlets with energy-saving tips.
- Brandywine Realty Trust held an ice cream social for their tenants at 500 North Gulph Road, demonstrating the important role both owners and tenants play in raising awareness and improving efficiency.
- Dr. P. Phillips Hospital hosted a fair with interactive displays about the steps the hospital is taking to go green.
- Northwest Pennsylvania Collegiate Academy Green Team hosted pep rallies at lunch where they played an energy-themed game of Jeopardy and introduced their mascot, Lucy the Light Bulb.
- Sears gave a free pizza each week to the associate who did the best job keeping the outside doors shut and handed out fliers about the competition to interested customers.
- Coal Ridge High School launched Operation Shutdown, a campaign to power down all non-essential equipment for an hour to raise awareness about how much energy could be saved. It was so successful that it gained traction, first throughout the other schools in the district, and then to the community, as student Green Ninjas visited local businesses and government buildings and asked them to pledge to participate.
- Planet Subaru set up a showroom display with an interactive kiosk and hands-on materials.



Clockwise from center: During a campus tour for nearby campers, U.Va.'s Chef Brett explains how the new hood controls in the kitchen work to save energy; the purple peaks on the graph show typical fan cycling at First Unitarian Society of Minneapolis which, after retro-commissioning, went from 24 cycles a day to as few as two; Brandywine Realty Trust's four-story banner made sure that motorists passing by 500 North Gulph Road knew about their energy-saving efforts; Cleveland Clinic's Hillcrest Hospital makes use of abundant natural light to illuminate interior spaces; Schmidt Associates gives energy updates in its "Sustainable Stan Journal" newsletter; staff at Dr. P. Phillips Hospital in Orlando, Florida, participate in the hospital's energy fair; Coal Ridge High School students show their school spirit during "Operation Shutdown."





The Sustainable Stan Journal

FRIDAY, SEPTEMBER 23, 2011

September 2011

project(s) of the month

Alternative methods to address stormwater

This month we wanted to highlight several projects that utilize alternative methods to reduce stormwater quantity. With building projects, stormwater is a tricky design issue to work out. Typically, the building area and surrounding landscape areas will increase the flow of the stormwater. Often detention or retention ponds are added to the site to hold the stormwater until the sewer system is able to accept the volume. These ponds often take up valuable land area and are costly to construct and maintain. Alternative methods to address stormwater have been gaining popularity and help reduce the development footprint of a project. Examples of alternative methods are as follows:

- Green roofs
- Rain Gardens
- Pervious paving (pavers or poured concrete)
- Rainwater cisterns
- Underground structures

Schmidt Associates has employed several of these alternative methods projects - each having unique conditions to address.

Mass Condominiums: 11 story condominium project in downtown Indianapolis. The urban environment provided little area to collect stormwater. Schmidt Associates designed a green roof to eliminate the need for an under-the-ground catchment chamber. One of the first green



WE'RE COMPETING

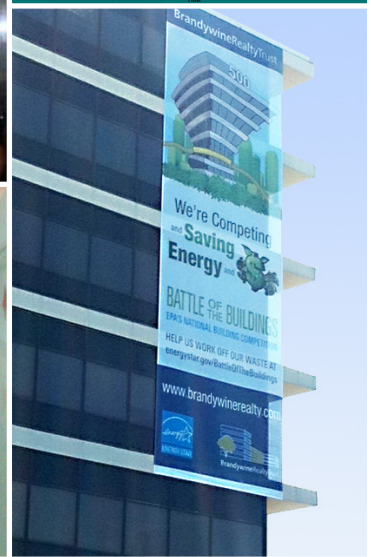


FOLLOW BY EMAIL

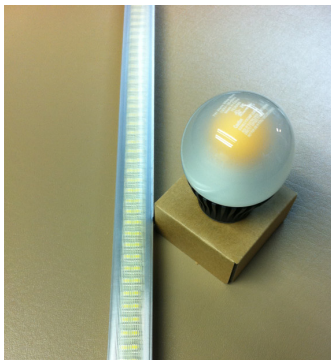
FOLLOW STAN

FOLLOW ME ON **Twitter**

WHICH STRATEGY SHOULD A CONSTRUCTION AND RENOVATION WASTE AND RECYCLING MANAGEMENT PLAN ADDRESS?




Clockwise from right: This modlet at 500 North Gulph Road helps eliminate vampire energy use by automatically shutting off power to equipment when it's not needed; a monthly solar energy report for YWS America shows how much energy was generated on-site and how many greenhouse gas emissions were prevented; the Colonnade Hotel in downtown Boston installed LED lighting throughout the building; Planet Subaru has 374 solar panels installed on the roof and knows that every kW of energy saved through efficiency means a greater percentage of solar energy that can be used to power the building or be sold back to the grid; an online dashboard at U.Va. shows current plant energy demand in real-time.



09/01/2011

Monthly Energy Production Report for YWS America System

Welcome to your monthly energy report. Our goal at Enphase Energy is to maximize your solar energy production, and to keep you informed about your system. View the summaries below to see how your system performed and how much you contributed to offsetting the global carbon footprint.

Powered by 

Energy Production and Peak Power for July 2011

Week	Peak Power	Energy Produced
July 01 - July 07	5.45 kW	212 kWh
July 08 - July 14	5.41 kW	251 kWh
July 15 - July 21	5.39 kW	228 kWh
July 22 - July 28	5.51 kW	247 kWh
July 29 - July 31	5.42 kW	67.2 kWh
July 2011's Total:	1.01 MWh	1.19 MWh
Previous Month's Total:	1.19 MWh	7.48 MWh
Year to Date:		

Your Carbon Offsets

Your Enphase system generated 1.01 MWh of energy during the month of July 2011.

CO₂ offsets: 1,539 lbs
You have offset the equivalent of: **18 trees**

And the Winner Is...

University of Central Florida Parking Garage C

Orlando, Florida



Reduced Energy Use by:

63.2%

Cost Savings:

\$34,907

Greenhouse Gas Emissions Prevented:

258 metric tons

EPA congratulates the ENERGY STAR National Building Competition participants for their exceptional efforts. This year's impressive results demonstrate that every building—and every person—can make a difference by saving energy where we work, play, and learn.

On this page, we've featured the top ten overall finishers—those buildings that reduced their energy use the most over the 12-month competition period. Many more buildings competed and logged tremendous savings. Find a full list of competitors and results at: energystar.gov/BattleoftheBuildings



Denotes buildings that have earned EPA's ENERGY STAR

Top Finishers



Twinsburg High School & Sports Complex

Twinsburg, OH

Reduced by: 46.3%

Cost savings: \$505,323

GHGs Prevented: 2,412 metric tons



Polaris Career Center

Middleburg Heights, OH

Reduced by: 43.4%

Cost savings: \$220,902

GHGs Prevented: 1,071 metric tons



Hartman Elementary School

Wylie, TX

Reduced by: 43.2%

Cost savings: \$26,271

GHGs Prevented: 167 metric tons



Scientific Instruments

West Palm Beach, FL

Reduced by: 42.2%

Cost savings: \$3,129

GHGs Prevented: 36 metric tons



Fannie Mae Office Building at 3939 Wisconsin Avenue

Washington, DC

Reduced by: 34.6%

Cost savings: \$49,544

GHGs Prevented: 262 metric tons



Office Depot – Plano

Plano, TX

Reduced by: 34.1%

Cost savings: \$14,989

GHGs Prevented: 101 metric tons



North Suburban Medical Office Building

Thornton, CO

Reduced by: 33.7%

Cost savings: \$106,710

GHGs Prevented: 607 metric tons



Office Depot – Raleigh

Raleigh, NC

Reduced by: 33.1%

Cost savings: \$11,678

GHGs Prevented: 80 metric tons



Kokomo High School

Kokomo, IN

Reduced by: 32.3%

Cost savings: \$442,338

GHGs Prevented: 1,816 metric tons





UCF's Winning Strategy

From the large pool of extremely talented competitors, the University of Central Florida captured first place by reducing the energy use of Parking Garage C on its main campus by more than 63 percent. The energy efficiency improvements achieved by UCF demonstrate that significant opportunities exist to save energy in structures that are largely unoccupied, such as parking garages and warehouses. These facilities individually may not use a great deal of energy and may not present the same challenges as occupied buildings, but they are significant because of the sheer number of these facilities and their associated carbon emissions. UCF's work with their main campus parking structure is an excellent reminder that these buildings should not be forgotten in our efforts to save energy and reduce greenhouse gas emissions.

The University of Central Florida approached the improvements to Parking Garage C by first tackling the interior and then, in a second phase, focusing on the exterior of the structure. For the interior, high performance T-5 Fluorescent lights were installed in place of the existing 150 watt HPS fixtures. The installation of all 424 fixtures was completed over a four week period during non-peak hours to avoid disrupting daily parking guests.

During Phase II, the top deck of the garage was retrofitted with 16 Cooper LED 236 watt lights in place of the existing 400 watt HPS fixtures. Ultimately, the lighting retrofit not only yielded significant energy savings and reduced the lighting bill by more than half, but also provided better visibility for the UCF community and visitors.

Preliminary analyses indicate a payback period of about two years for UCF's lighting upgrade project.

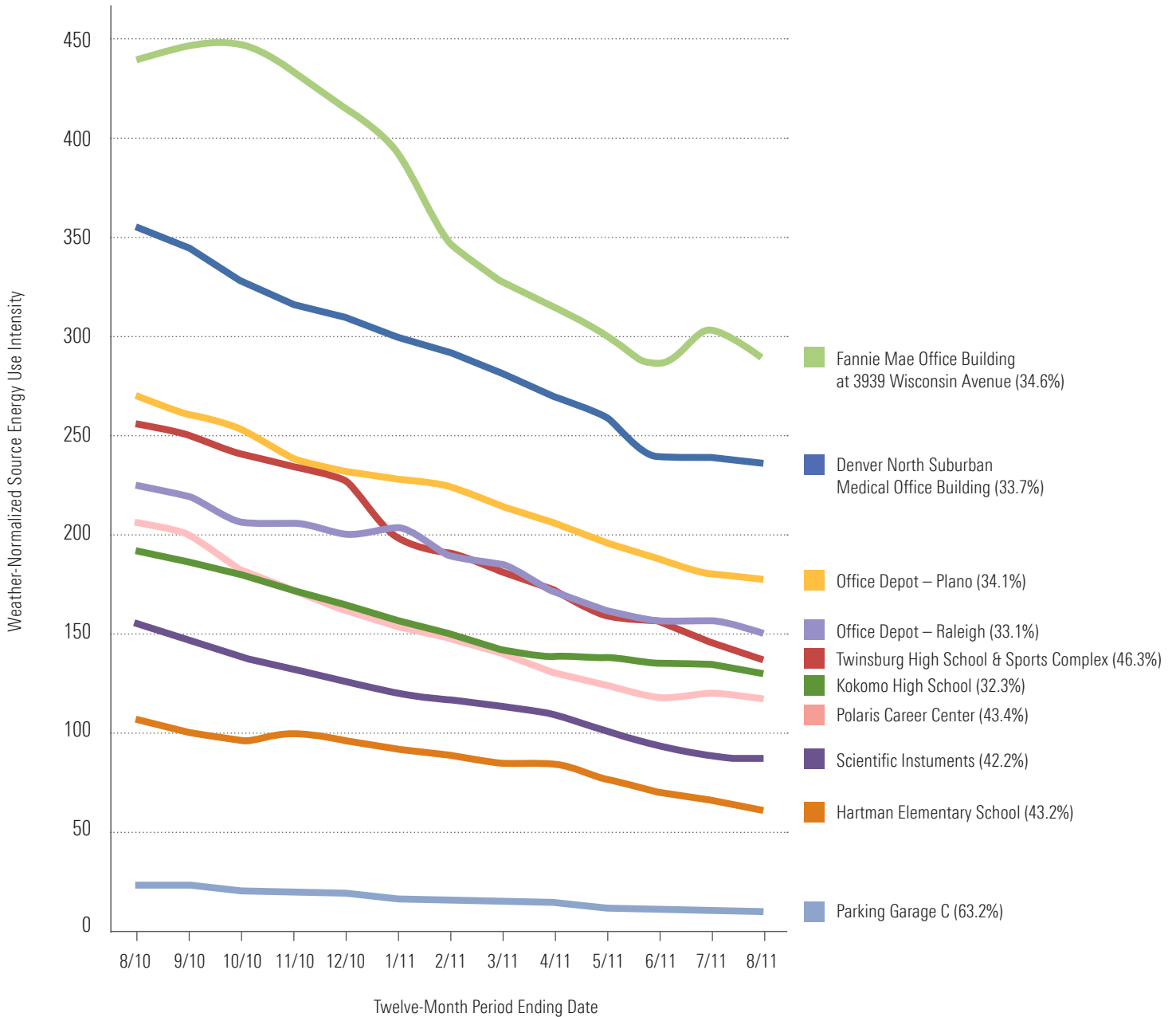
UCF's efforts during the competition went beyond the main campus parking facility to include an aggressive building scheduling initiative. After occupancy hours, only emergency lighting and base level HVAC will be utilized in buildings. The scope of this initiative is intended to become campus-wide, with the exception of research buildings. The implementation of this initiative has already begun in the Facilities and Safety Building, Classroom I Building, Colburn Hall, and at the UCF Welcome Center.

The University of Central Florida has also been commissioning several of its existing buildings on campus, including auxiliary facilities, like the Recreation and Wellness Center and UCF Football Stadium, to increase overall operating efficiency. Currently, a building automation retrofit is taking place at the Central Energy Plant (CEP) to increase district energy efficiency.



Battle to the Finish

A look at the path to energy savings for the competition's top 10 overall finishers. To see results from all 245 competitors, visit www.energystar.gov/BattleoftheBuildings



How were competitors judged?

Buildings were judged on the percent that they reduced their EUI. The building with the greatest percent reduction was declared to be the winner. EPA also adjusted each building's percentage to normalize for weather, thereby ensuring that no building was credited or penalized due to changes in weather over the course of the competition.

What is energy use intensity?

EUI is calculated by dividing the amount of energy a building consumes in one year (measured in kBtu) by its total floor-space. Generally, a low EUI signifies good energy performance, although certain building types will always use more energy than others.

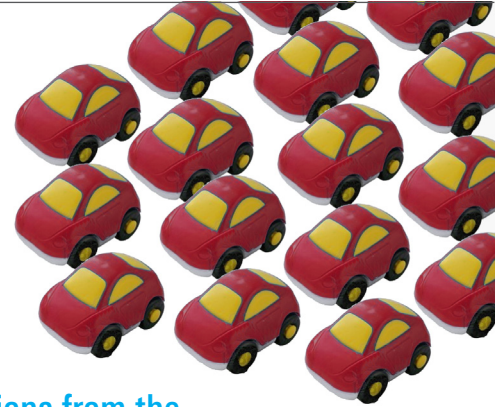
The Difference a Year Makes

Cumulative Impacts

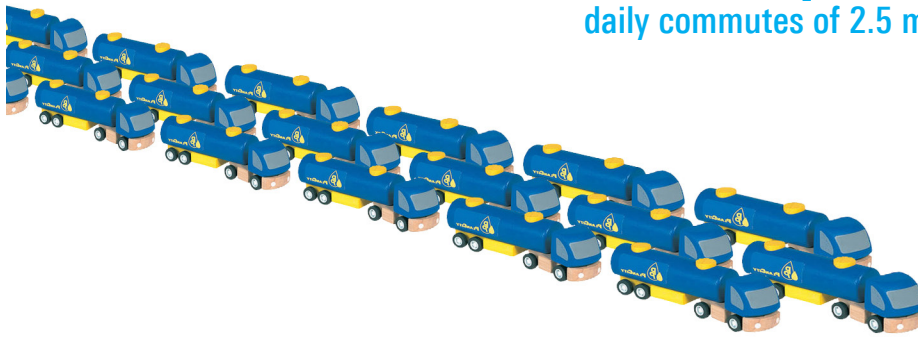
By eliminating their wasted energy use, together, the participants in the 2011 ENERGY STAR National Building Competition saved \$5.2 million on their utility bills and saved more than 240 million kBtus of energy annually.

Collectively, the competitors also prevented nearly 30,000 metric tons of carbon dioxide annually, equal to the emissions from the electricity used by more than 3,600 homes a year.

What else does that equal?



Equal to the CO₂ emissions from the daily commutes of 2.5 million workers



Equal to the CO₂ emissions from nearly 400 tanker trucks' worth of gasoline



Equal to the CO₂ emissions from nearly 9,700 passengers' round-the-world trips

...all without making any sacrifices in comfort or quality.

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

<http://www.terrappass.com/carbon-footprint-calculator>

http://www.bts.gov/publications/omnistats/volume_03_issue_04/pdf/entire.pdf

<http://yosemite.epa.gov/opa/admpress.nsf/e77fd4f5afd88a3852576b3005a604f/2526f9e44a4291ad852577de0058c37a!OpenDocument>

"We applaud the ENERGY STAR program for hosting these types of positive competitions that bring fun into environmental initiatives."

– Yalmaz Siddiqui
Senior Director for Environmental Strategy
Office Depot

"UCF's involvement in the National Building Competition has stimulated the interest of the campus population and the local community. In addition, it has provided the University with an opportunity to reaffirm a commitment to creating a sustainable campus and climate neutrality!"

– Alexandra Kennedy
Sustainability & Energy Management
University of Central Florida



ENERGY STAR is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency. Learn more at energystar.gov.

