**Facilities & Services**

**Chancellor Talking Points on Sustainability**

**Overall Sustainability**

**iCAP**

The Illinois Climate Action Plan (iCAP) seeks to fulfill the campus commitment to carbon neutrality by the year 2050. There are over 90 ongoing iCAP projects across campus, a majority of which are the direct responsibility of Facilities & Services. Projects span from using renewable energy, ensuring LEED certification in campus buildings, promoting active transportation, and continuing energy conservation efforts. Facilities & Services is currently working with the Office of Sustainability to develop progress reports for all iCAP projects, in addition to creating an updated version of the Plan.

LEED®

LEED® is an internationally recognized certification system created by the U.S. Green Building Council. LEED® standards provide third-party verification that a building or community was designed and built using strategies aimed at improving performance across the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. Standards for new buildings have been updated from requiring LEED® Silver Certification to LEED® Gold Certification for the campus. *LEED® is a registered trademark of the U.S. Green Building Council.*

**Bicycle Friendly Award**

The University of Illinois at Urbana-Champaign's bike-friendly efforts earned them a Bronze Bicycle Friendly Universities award from the League of American Bicyclists in October 2011. The school has a strong campus-wide bicycling culture, bicycling skills and theft prevention outreach, and an on-campus bike shop for bicycle education and repair assistance.

**Abbott Biomass Permit**

Abbott Power Plant has the potential to co-fire up to 15% biomass with coal. The University has requested a permit from the Illinois Environmental Protection Agency to begin test burning with coal/biomass blended fuel.

**Biodiesel Usage**

Vegetable oil recycled from campus dining halls has been used to fuel diesel-powered vehicles at the University of Illinois. The Engineers Without Borders (EWB) Illinois Biodiesel Initiative team produced and delivered 100% biodiesel fuel to the campus Facilities & Services Transportation and Automotive Services facility. The team takes used vegetable oil from the University’s dining halls to make the fuel. By using this higher biodiesel blend, the campus fleet produces fewer emissions and uses less foreign oil.

**Utility Master Planning**

A proposal to contract with a consultant for a Utility Master Plan for Production and Distribution will be reviewed by the University of Illinois Board of Trustees. Once approved, a plan will be developed which will outline options for how campus can best provide safe, reliable, efficient, and environmentally sensitive energy to campus. This study will include estimated costs and timeframes and will be interactive with the iCAP initiatives.

***Planned Sustainability Initiatives***

**Solar Farm**

In accordance with the iCAP, the campus is working on establishing a 27.5-acre solar farm on the South Farms. The Solar PV Array will allow the University to reach its goal to produce at least 5% of all energy used on campus from renewable energy sources by 2015. Additionally, the Business Instructional Facility has solar panels on a portion of the roof, proving 203 MMBTU of power annually.

**Revolving Loan Fund**

The University is creating a fund to finance projects that focus upon energy conservation. The energy costs saved from these projects will replenish this fund and continuously finance new sustainability projects.

**Adaptive Lighting**

Lighting in selected parking structures will automatically reduce to 50% power upon vacancy in order to conserve energy. The reduction in power allows the area to remain lit. Upon occupancy, these lights will automatically increase to 100%.

**Energy Conservation**

The Urbana-Champaign campus has achieved a 22% energy reduction in existing buildings from the FY2007 baseline year. The 17% reduction from FY2007 to FY2010 illustrates achieving a five year campus goal in just three years.

**Achievements in Energy Conservation:**

 **Energy Billing System**

EBS (eDNA Billing System) is a software application that streamlines the process of utility metering, billing, and reporting. By supplying facilities and business managers with consumption and cost information, F&S is providing them with tools they need to raise awareness and evaluate the impact changes in programming, facilities or behavior in their buildings.

**Energy Dashboard Project**

The Illini Energy dashboard is a collaborative effort sponsored by the Student Sustainability Committee, Facilities & Services, Environmental Change Institute, and the Office of Sustainability. The dashboard software will merge the energy consumption data into a user-friendly web portal. Energy consumption can be displayed in near real-time or over any user selected time period with comparisons to prior usage periods.

**Lighting Retrofit Project**

The Campus Lighting Retrofit Project replaces old, outdated T12 fluorescent lamps and ballasts with state-of-the-art T8 technology. Overhead fixtures consume between 40% and 50% of a building’s electricity. More than 86,000 fixtures have been complete with an energy reduction of 3.21 MW of $1.2M annual electricity cost savings.

**Pipe Insulation Project**

The F&S Maintenance Division added two full time insulators in FY10. This project’s goal is to insulate as many pipes as possible throughout campus in order to reduce energy and heat loss. To date, 70 buildings have been completed resulting in the ambient temperature in maintenance rooms being cutting by as much as 50%.

**Energy Recovery Units**

University facilities typically require a significant volume of outdoor air ventilation in accordance with ASHRAE standards. This requires substantial amount of energy to keep the occupied space at the proper environment. There has been much recent advancement in energy recovery technology and product development to meet the current demands of energy efficiencies for building systems.

**Thermal Energy Storage**

In 2010, the Urbana-Champaign campus integrated a 6.5M gallon Thermal Energy Storage (TES) facility into the Central Chilled Water System (CCWS) to provide additional cooling for various new campus building loads. This system also allows us to produce the additional chilled water capacity at night to take advantage of our ability to purchase electricity during the low cost off-peak hours through Real Time Pricing (RTP).

**ESCO**

An ECSO is an accredited Energy Service Company that provides guaranteed projects savings through an Energy Performance Contract. The first ESCO on the campus was chosen to be at the Veterinary Medicine complex. The Vet Med ESCO project will provide innovative energy efficiency and technology, demonstrable energy savings, and long-term financing solutions for modernization of our facilities and energy infrastructure. By implementing this project, energy consumption at the Vet Med Complex will be reduced by nearly 40%.

**Deferred Maintenance Projects**

The Deferred Maintenance Program is designed to systematically address many needs, including improved electrical service, ventilation, building envelopes, interior finishes, and other deferred maintenance needs. Energy conservation projects are also being undertaken to reduce energy costs and provide a more sustainable campus. Life-safety projects are working to create safer environment in the event a fire or other emergency.

**Retrocommissioning**

Retrocommissioning is an in-depth analysis of a building’s HVAC systems and maintenance program with a view to restoring the optimal operating conditions and optimizing the control strategies for energy conservation, sustainability, and client comfort satisfaction. The Retrocommissioning program has completed work in over 4M GSF of campus buildings and produced an average energy reduction of 27% in those buildings.

**Building Weatherization**

University students and F&S are working together to identify and resolve weather and insulation issues in small buildings. By working to seal windows, improve insulation, and apply weather stripping, these buildings will reduce energy consumption and increase cost savings.

**Recycling**

**Waste Transfer**

The Waste Transfer Station collects and sorts recyclables from the campus waste stream. The current campus recycling/diversion rate is 48.8% for non-construction/demolition waste and 41.1% for overall waste. The University looks to establish a Zero Waste campus policy, a large-scale food composting project, and a waste diversion rate to 75 percent by 2020.

**DemolitionRecycling**

The University has made great improvement in the amount of material that is recycled and diverted from demolition projects on campus. Examples:

Demolition of Gregory Residence Hall

Total Tons 6294.85

Tons to Landfill 211.59

Tons Recycled 6083.26

Diversion Rate 96.94%

Demolition of Peabody Residence Hall

Total Tons 6400.14

Tons to Landfill 181.34

Tons Recycled 6218.80

Diversion Rate 97.17%

**Water Conservation**

 **Replacing and Updating Fixtures**

Facilities & Services began replacing faucet aerators in campus buildings in 2009. More than 1400 aerators were installed at a cost of ~$12,000. The estimated water and steam cost savings was $96,000 annually. Additional water conservation measures include installation of low flow and/or automatic flush valves, retrofitting toilets with dual flush handles and updating of urinals and showers with low flow alternatives.

**Environmental Issues**

 **Rain Gardens**

A rain garden is an ecological design that utilizes native plants to manage stormwater runoff. Rain gardens are planted in depressions that intercept stormwater runoff from roof tops, sidewalks, roads and parking lots. The extensive root systems of native plants naturally filter and absorb storm water. The remaining water infiltrates the soil and enters the water cycle through groundwater recharge. The result of this process is improved water quality and reduced flooding. Facilities & Services Safety & Compliance Division partnered with University Restoration Ecology classes to create the first rain garden on the campus in 2007. In 2011, the University collaborated with the City of Champaign and local business to create a rain garden at Robeson Elementary School. The rain garden was designed to mitigate flooding issues and to increase the usability of the playground.

**Native Prairies**

F&S has helped install a native prairie landscape on campus near the president’s house and is looking for opportunities to convert more land on campus back to native prairies.

**No-Mow Zones**

The Facilities & Services Grounds Department introduced “No Mow” zones to reduce fuel consumption and carbon emissions while enhancing an environment for birds, animals and insects. “No Mow” zones are areas left to grow naturally with no mowing other than a few pedestrian pathways. These areas have been used as natural laboratories for horticulture, ornithology, entomology, and environmental science classes.