

**THE UNIVERSITY OF KANSAS
2011 SUSTAINABILITY REPORT
TO THE KANSAS BOARD OF REGENTS**

The University of Kansas remains committed to sustainability initiatives that protect our natural ecosystems, create economic prosperity, and treat all people with equality and respect. The following outlines efforts KU has made in the past year that address each of the six-implementation principles in the Kansas Board of Regents Sustainability Policy.

LEARNING OPPORTUNITIES:

There are many opportunities on the KU campus to learn about sustainability through participation in campus and community activities as well as in the classroom. A recent focus has been placed on engaging students in addressing issues of sustainability on campus through service-learning. One example is the Urban Planning Graduate Program, which provided support for the sustainability planning process (see *Administration*). During the fall 2010 semester, students in *Professional Practice* planned, coordinated, and staffed four Campus Sustainability Visioning Workshops for the Campus Sustainability Plan, while students in three other courses focused on specific campus issues. At the end of the semester, the students shared their work with the local community at an Open House. In the spring 2011 semester, students in *Environmental Planning Implementation* were assigned to two of the working groups for the Sustainability Plan to help plan meetings, facilitate discussions, ensure completion of meeting minutes, and draft the topic sections of the plan.

Other examples of using the campus as a “living laboratory” include:

- Students in the Environmental Studies Capstone course assisted 15 departments with mini energy audits and completion of Green Office Recognition applications as part of a section on voluntary environmental improvement programs
- The KU EcoHawks, a senior design lab in mechanical engineering, began work on converting a GMC Jimmy into an electric vehicle to be used to deliver inter-campus mail
- Studio 804, a fifth year architecture studio, designed and built the Center for Design Research on KU’s West Campus (see *Campus Planning*).

Sustainability education in renewable energy will be supported through a \$552,000 grant received in July 2011 from the National Science Foundation. The grant provides tuition scholarships for sophomores and juniors majoring in science, technology, engineering or math – the so-called STEM disciplines. Selected students will receive a \$10,000 annual scholarship, starting this fall and renewable for up to three years. About half of the scholarships are slated for students who have transferred to KU from Haskell Indian Nations University or Johnson County Community College.

In addition to these efforts, over 300 courses taught on campus have been identified as sustainability-focused or sustainability-related, defined by the Association for the Advancement of Higher Education as courses that “help build knowledge about a component of sustainability or briefly introduce students to sustainability concepts”. The courses are offered by over 40 departments from seven schools as well as study abroad experiences.

CAMPUS LIFE:

Programs that foster sustainability in campus life were enhanced over the past year:

- Information fairs at summer orientation featured sustainable living tips for students preparing to come to campus, and orientation sessions included a presentation about energy conservation and the Take Charge Challenge (*see below*).
- The student sustainability pledge was highlighted at three “Hawk Week” events at the start of 2011 school year. Approximately 500 students signed a pledge committing to specific actions they will focus on to reduce energy use, water use, and waste while at KU.
- The Sustainability Ambassador Program, a network representing approximately 70 campus departments and student organizations working to integrate aspects of sustainability into their activities, held monthly meetings over the lunch hour. A tour every other month as part of those meetings helped the ambassadors get more familiar with sustainability projects on campus. Many Sustainability Ambassadors participated in the working groups that drafted language for the campus sustainability plan (see *Administration*).
- The KU Environmental Stewardship Program works with the Department of Student Housing and area non-profit organizations to collect and redistribute things that would otherwise end up in the waste stream when students move out of the residence halls. In the spring of 2011, the program collected and redistributed 6,100 lbs. of clothing, shoes, towels, and bedding, 2,458 lbs. of food, and 540 room furnishing items.

Twelve “Charter Member” offices also helped launch a new Green Office Recognition program in fall 2010 to recognize campus departments and offices that are making an effort to reduce environmental impacts and create a more sustainable workplace. Offices participating in the program use a checklist to identify specific actions their offices are taking. The list assigns a point value to strategies for cutting energy consumption, reducing waste and making environmentally preferable purchases; an applicant's total score determines the overall level of achievement (Level 1, 2 or 3). Offices receiving the award can display the campus sustainability emblem in their offices, on their website, and on departmental publications. A total of twenty-seven offices participated in the inaugural year.

In addition to these ongoing projects, Lawrence and Manhattan competed in University Region of the *Take Charge Challenge* from January to October of 2011. Overall, sixteen Kansas communities in four regions were involved in this competition to reduce energy consumption. Jeff Wienberg, Assistant to the Chancellor, served as co-chair of the Lawrence community leadership team, which included other staff and students from KU. The Center for

Sustainability, New Student Orientation, and other campus departments and organizations helped promote the challenge and energy conservation on campus by assisting with presentations, participating in social media campaigns, and coordinating volunteers to install CFLs in desk lamps in campus offices.

OPERATIONS:

Implementation continued on energy efficiency projects with a \$25 million performance contract with Energy Solutions Professionals (ESP) to address aging heating, ventilation and air conditioning equipment and inefficient lighting. Projects included expanding building automation control systems, and updating lighting and plumbing fixtures, replacing air-handling units, and upgrading laboratory fume hood and lab exhaust systems from constant volume exhaust to variable volume exhaust. This consisted of 319 fume hoods located in 221 labs in Malott, Haworth & Simons, which will improve safety, reduce unnecessary exhaust airflow, and generate savings due to less loss of heating and cooling within the three buildings. The contract also includes an ongoing monitoring and awareness program. ESP staff completed a plug load audit and estimate that 17% of the energy use in the monitored buildings is from computer equipment, peripherals, and personal appliances. ESP is in the process of developing strategies to reduce this plug load consumption.

In response to proposed funding for LED lighting through the Renewable Energy & Sustainability student fee, Design and Construction Management has been testing LED lighting for installation along walkways and in parking lots on campus. A demonstration on West Campus in spring 2010 gathered input from the community on walkway lighting. Additional models were tested later in the year, including LED lighting for parking lots, and a standard for LED fixtures is being evaluated.

Waste reduction efforts continue to be successful as Facilities Operations (FO) provides recycling services as well as surplus property collection and redistribution services. In FY 2011, nearly 586 tons of material, including scrap metal and secure shredded paper, was recycled on campus, and 4020 surplus items, including office furniture and equipment, were diverted from the landfill and redistributed to campus departments or local non-profit organizations.

CAMPUS PLANNING:

A new facility for collaborative research in sustainable design, the Center for Design Research, was completed in July 2011. The structure is a design-build project of KU's Studio 804. More than 20 KU students participated in the project as designers, workers and fundraisers as no public money was used. The building features a solar array, an energy-conserving green roof, and a vented wall that promotes cross-ventilation in the summer and circulation of warm air in the winter. A wind turbine and an electric vehicle charging station were also installed on the site, and a Westar Energy smart meter provides continuous data about energy use at the site. The building will be one of the first LEED platinum-certified buildings in the community and the first Passive House certified commercial building in North America. The Center for Design Research hopes to use the building to encourage collaboration among faculty and students in many disciplines.

Construction continues on the Measurement, Materials and Sustainable Environment Center (M2SEC) for the School of Engineering. The facility is expected to be complete by the beginning of 2012 and will incorporate the latest in green technology, including elements that will qualify it for LEED certification.

The first project funded through the campus Revolving Green Loan Fund, replacing 168 pulse-start metal halide fixtures with 4-lamp, high-output T5 high bay fluorescent fixtures in the two court areas of the Ambler Student Recreation Fitness Center, was completed in September 2011. Reducing the individual fixture wattage from 453 watts to 257 watts will reduce annual electricity usage by 165,202 kWh, with additional savings from reductions in demand charges. The high bay fluorescent lamps also add improved light quality, improved lumen maintenance (end-of-life light output), and less frequent maintenance. The project savings will be returned to the revolving loan fund account to invest in future conservation and efficiency efforts.

ADMINISTRATION:

The new strategic plan for the Lawrence and Edwards Campus, *Bold Aspirations*, includes four themes that set the priority for research investment for the next five years. “Sustaining our Planet, Powering our World” was selected as one of these focus areas. A summit will be held in November to develop more detailed strategies for building a multidisciplinary research network, identifying potential funding sources, and prioritizing resources to focus on sustainability and energy research.

Additionally, the *Changing for Excellence* self-assessment has resulted in proposed initiatives that will not only save money but lessen our environmental impacts through reductions in energy and resource consumption. By streamlining processes and being more strategic with operations, the University will be able to advance sustainability initiatives in several areas of campus.

Both of these major initiatives are supported by the campus sustainability plan, *Building Sustainable Traditions*. The sustainability plan was commissioned by Chancellor Gray-Little in 2010 to “develop strategies for minimizing our environmental and social impacts.” From October 2010 through the completion of the plan in July 2011, nearly 150 students, faculty, staff and community members were involved with the project as members of the Sustainability Plan Advisory Council, participating in one or more of ten working groups responsible for outlining the content of each chapter, completing Urban Planning class coursework related to the plan, or attending Sustainability Plan Visioning Workshops and external review meetings.

Building Sustainable Traditions is organized around nine key focus areas: Administration, Curriculum & Research, Student Life, Energy, Built Environment, Campus Grounds, Procurement, Waste, and Transportation. Each section establishes a broad vision and

overarching goals and includes specific action steps for achieving these goals. The plan is available for download at <http://www.sustainability.ku.edu/Plan/>.

The plan also reflects elements of the Sustainability, Tracking, Assessment & Rating System (STARS) program administered by the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS publically reports information related to sustainability performance in three categories: 1) education & research, 2) operations, and 3) planning, administration & engagement. The Center for Sustainability is gathering information from campus departments to establish a baseline assessment and pursue a STARS rating

OUTREACH:

The Center for Sustainability continues to serve as a resource on campus sustainability and has updated its website at <http://www.sustainability.ku.edu> to include more information about initiatives that are sponsored by the Center and other departments throughout campus. The Center has also enhanced a second site at <http://www.energy.ku.edu> to provide information about energy conservation efforts at KU, including data on campus energy consumption.

The University also offers numerous lectures and conferences throughout the year highlighting sustainability. For example, KU Continuing Education sponsored the International Conference on Sustainable Design and Construction in March, which featured presentations on societal decisions and political policies, the future of green design, and cost-effective delivery of green buildings. In April, Kansas Governor Sam Brownback spoke at the University of Kansas Energy Conference. A second keynote speaker was John Hofmeister, retired president of Shell Oil Company and currently head of the not-for-profit Citizens for Affordable Energy organization. The one-day event, sponsored by the KU Energy Club and the KU Energy Council, sought to prompt conversation on all aspects of energy policy.

Other major outreach efforts continue to be supported through research and service. Research centers such as the Center for Remote Sensing of Ice Sheets (CReSIS), Center for Environmentally Beneficial Catalysis, and the KU Natural History Museum and Biodiversity Center provide ongoing educational programs for K-12 students and adults. And, programs like the Bioscience & Technology Business Center, formally dedicated in October of 2010, are supporting new collaborations. Two energy-related tenants - 360 Energy Engineers and Sunlite Science and Technology, a producer of specialty LED products – are examples of supporting sustainability in business.