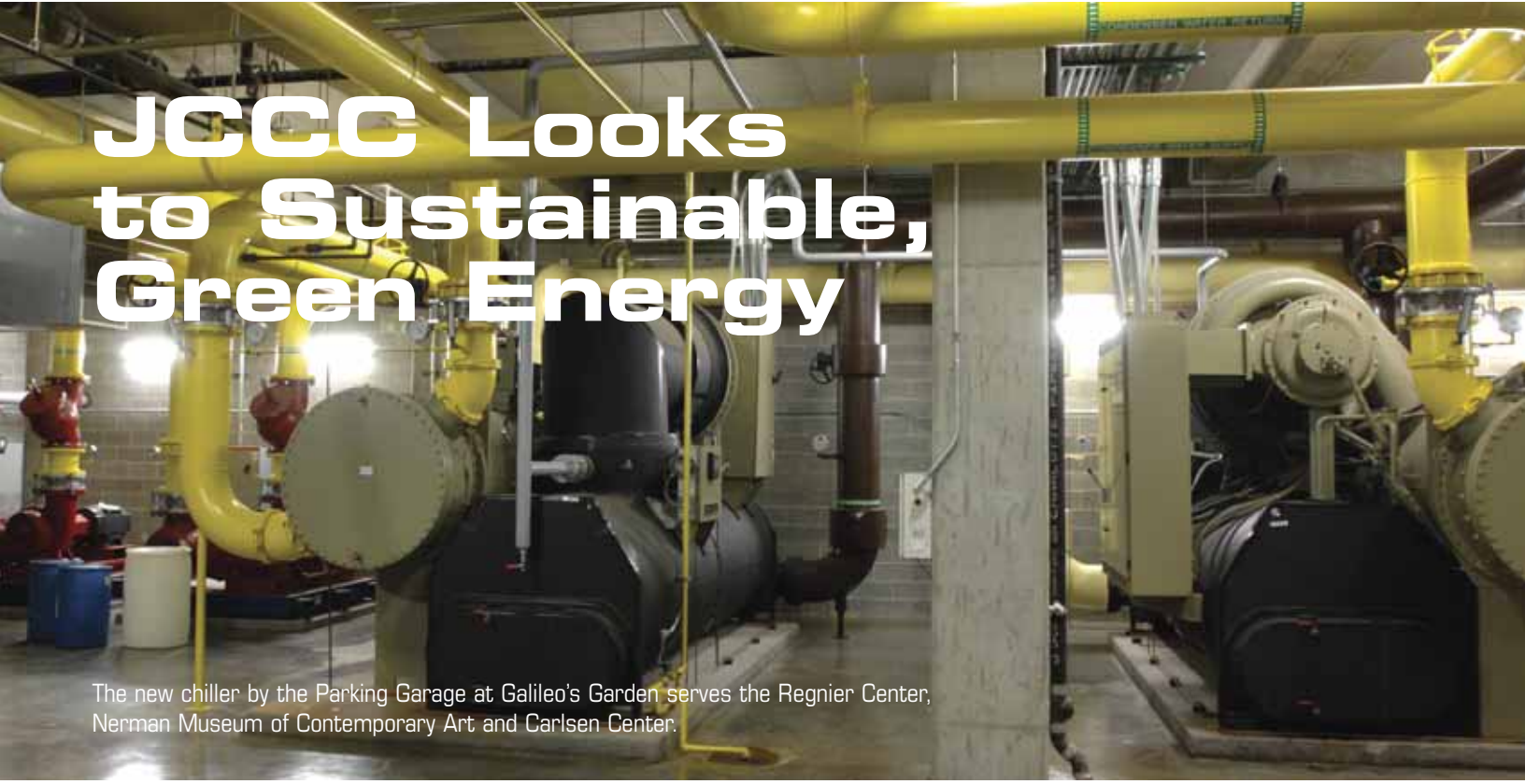
JCCC Looks to Sustainable, Green Energy



The new chiller by the Parking Garage at Galileo's Garden serves the Regnier Center, Nerman Museum of Contemporary Art and Carlsen Center.

Cover: Rick Monk, manager, Campus Services and Energy Management Systems, and Rex Hays, director, Campus Services

JCCC is in a good position to use green energy sources because its founders created a campus that is almost all-electric.

"All-electric is good because it is easier to supplement electricity with green energy sources like solar and wind alternatives. Electricity is a more green approach to energy than fossil fuels," said Kelly Gernhart, doctoral student in higher education, who wrote *Documenting Sustainability and Green Energy at Johnson County Community College* as part of a University of Kansas field experience.

Kelly Gernhart is academic dean, computer information systems and Web graphic design, DeVry, and an electrical engineer.

Members of the Student Senate Green Committee presented a resolution to the board facilities committee in May requesting a commitment to support clean sustainable renewable energy systems on campus. The resolution was accompanied by a report titled, *Greening JCCC*.

After attending that meeting as part of his KU field experience, Gernhart wrote a baseline study of JCCC's energy use based on interviews with Rex Hays, director, Campus Services; Mitch Borchers, director, Purchasing; Dr. Wayne Brown, executive vice president, Administration; and his mentor for the class, Dr. Jerry Baird, executive vice president, Administrative Services.

Gernhart looked at lighting efficiency, the major energy usage on campus; heating, ventilating and air conditioning; equipment meeting criteria for the U.S. government's Energy Star program and KCPL rebate programs; computer power management; and water and gasoline conservation.

"I think Kelly's report will be very useful in guiding the college through the process of energy conservation," Baird said.

Renewable energy sources that are also environmentally friendly have been a priority for Hays, who started at JCCC in August 2006.

"I am passionate about energy conservation, and Campus Services staff have a lot of ideas and experience with its application," Hays said. "Sustainable energy is a serious issue, and, as an academic institution, we can lead the charge in greening initiatives. In the next five years, this campus will realize a lot of gains in energy efficiency and sustainability."

One of the first low-cost improvements for the

college has been higher-efficiency lighting – replacing fluorescent light fixtures with new electronic ballasts, which is projected to result in 25 percent less energy consumption and rebates from KCPL. Traditional "exit lights" are being replaced with LED (light-emitting diode) ones. Gernhart estimates that 100 Energy Star-compliant "exit" signs would result in a $36,163 savings over the life of the signs and reduce CO_2 emission by 235 tons. Campus Services has retrofitted exterior lights in the parking lots and walkways with lower-wattage metal-halide fixtures to conserve energy.

The HVAC system is another large sector of JCCC's energy consumption. Hays says the original Barber-Coleman energy management system is being replaced by a modern computer-based and Web-accessible system. Hays says the new controls and sensors allow temperatures to be set according to times when a space is occupied. Gernhart suggests stretching set points so that the temperature is set a little warmer on the hottest days and a little cooler on the coldest days to save energy.

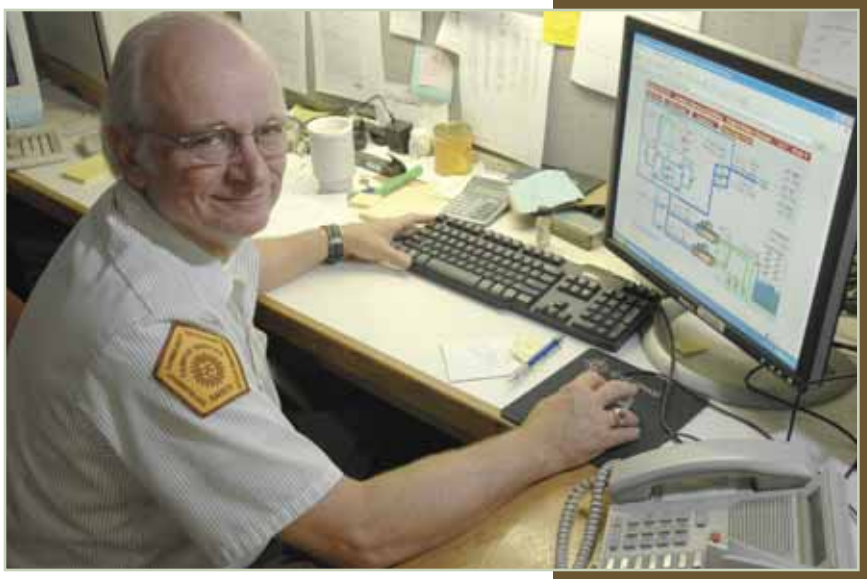
JCCC was energy conscious when it buried its 650,000-gallon water tank in the Commons Courtyard. Water is chilled overnight during off-peak hours, reducing peak energy requirements.

"Anything the college does to reduce KCPL's peak load can delay the building of more coal-fired plants," Gernhart said.

One problem of older buildings is that heaters/air conditioners regulate temperatures, including the extreme heat generated by data closets. In the Regnier Center, each data closet has a dedicated air conditioner, so the building air conditioners don't have to run 24/7 during the summer.

JCCC's brick building exteriors save on maintenance and have good insulation value. Campus Services keeps a vigilant eye on caulking around windows and doorsills to minimize energy loss.

Hays is looking at the feasibility of other sustainable and energy-saving options: adding wind turbines designed to sit on a roof to create renewable energy for new or renovated buildings; at the time of replacement, substituting water tanks with point-of-service tanks that heat water only when needed, not all the time, and solar shingles or collectors in place of regular roofing material; installing motion sensors that turn lights on or off depending on occupancy; eliminating the college motor pool and purchasing fuel-efficient vehicles for the Campus Services fleet.



Brian Anderson, maintenance supervisor, monitors detailed information on campus chillers by means of a computerized building automation system.

"We are looking at anything possible that allows the college to use sustainable, green energy," Hays said.

JCCC recently hired Rick Monk as the new manager of Campus Services and Energy Management Systems. His experience in operating buildings includes a substantial focus on energy management.

Supervisors from Campus Services are in the process of receiving KCPL's Building Operator Certification, a program offering seven courses on energy and resource-efficient operation of buildings. JCCC is an institutional member of the Central Association of Physical Plant Administrators, a professional organization that allows members to network about more efficient ways to operate physical plant facilities at institutions of higher learning.

Gernhart credits JCCC for its purchase of Energy Star-compliant Dell computer hardware and Hewlett Packard printers that reduce the energy consumption of equipment in labs and classrooms during periods of inactivity.

Will Gibson, maintenance supervisor, looks over the electronic ballast inventory in the CSB.