Steps Toward Sustainability at Johnson County Community College

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College Stakeholders Interested in Sustainability at JCCC

- Students
- Faculty
- Staff
- Private Donors
- Equipment Vendors
- Contractors
- Energy Providers
- Taxpayers

JCCC Student Action

- **Student Organizations**
  - Senate Green Committee
  - Student Environmental Alliance
- **Resolution to the Facilities Committee of the Board of Trustees at JCCC**

  Commitment to support clean, sustainable, renewable energy systems.
- **Campus Newspaper**
  - *Campus Ledger*
  - “The Greening of Campus” series

Faculty and Staff

Sustainability in the Curriculum

- Ecology
- Environmental Science
- Introduction to Horticulture
- Interior Design
- English Composition I and II
- "Where Do You Live?"
  - **Learning community (English Composition II and Environmental Science)**
  - **"Through reading, writing, and discussion, this course will raise your awareness of where you are and help you become more conscious of your own place in and responsibility to the earth's ecology." (kday@jccc.edu; dbelt@jccc.edu)**

College Publications

This Month—"The Greening of JCCC"

Other “Green” Efforts at JCCC

1. Practicing Energy Efficiency—Primary Focus Currently
   - Electrical Energy
   - Water
   - Gasoline
2. Recycling
3. Evaluating Ways to Move Campus Toward Greater Sustainability

Practicing Energy Efficiency: Conservation of Electrical Energy

Largely Electric Campus allows focus on electrical conservation as greatest way to reduce campus energy consumption

- Lighting
- Heating, Ventilating and Air Conditioning
- Energy Star Programs
- Computer Power Management
- KCPL Green Projects

Lighting Efficiency

- Motion sensors in classrooms, bathrooms, or other unoccupied spaces.
- Replacement of fluorescent lighting fixtures with fixtures with electronic ballasts. Result: 25% less energy consumption and rebates from Kansas City Power and Light (KCPL) for such new fixtures
- Low Wattage Metal-Halide Fixtures in parking lots and timed lighting in parking garages (also reduces light pollution)

Heating, Ventilating and Air Conditioning

- Campuswide Energy Management Systems Upgrade
  - From original Barber-Coleman system to computer-based, web-accessible Invensys/T.A.C Building Systems.
  - Closer control of HVAC needs
  - Network of distributed sensors and controllers
  - Coordinated settings with work and class
  - Stretched set points during peak energy utilization for better rates through KCPL metering programs
  - Captured data for trend analysis and identification of areas needing more energy conservation measures
- Inspection and Replacement weather stripping on doors and Windows

Energy Star Program: Energy Efficient Equipment

Identifies and assists with quantifying energy savings impact of equipment that meets strict government guidelines for energy efficiency to reduce greenhouse gas emissions.

www.energystar.gov/purchasing

"Energy Star in Higher Education—Good for Your Budget and the Environment"

Calculators help purchasers identify Energy Star benefits.

Computer Power Management

- Purchase of Energy Star **Dell** computer hardware and **Hewlett Packard** printers.
- Setting sleep mode for monitors when not in use.
- Conducting overnight shut down of computers in labs and classrooms.
- Creating virtual servers with VMware Technology
- Placing data center in higher efficiency location

RESULT

1. Reduces energy consumption of equipment in labs and classrooms when vacant.
2. Reduces need to remove waste heat through HVAC systems.

KCPL Green Projects

- Increase in wind generating capacity for more green power in future (Spearville, KS facility)
- Rebate programs for energy efficiency projects (JCCC provides documentation to KCPL and is refunded portion of project expenses.)

Practicing Energy Efficiency: Water Conservation

- Brick Pavers
- Cistern and Windmill at Horticulture Science Building
- Buffalograss around perimeter of campus
- Rainwater Gardens

Concrete Slabs to Brick Pavers

Replacement of concrete slabs by brick pavers laid on bed of sand

- Flexibility of pavers allows adjustment to shifting ground conditions, which reduces tripping hazards.
- Cracks between pavers allows rain water to soak into soil rather than running off into area streams and rivers.

Cistern and Windmill at Horticulture Science Building

Incorporation of Kansas Prairie Practice of Cistern Water Collection System

- Storage of rainwater from roof in 10,000 gallon tank under building entry area for on-site greenhouse
- Pumping ground rain water with restored windmill near building for outside garden areas
- Use of monitoring system to supplement rain and ground water with city water if needed

Buffalograss

"Buffalograss is a native prairie grass that can be used for low-maintenance laws and other turf areas."

Keeley & Fagerness, Buffalograss Lawns, Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Horticulture Report MF-658, Sept. 2001.

Buffalograss

- Conducive to naturalistic prairie grass establishment
- Grows slowly
- Requires little water, fertilizer, or mowing
- Drought tolerant

Rain Gardens

- Filters rainwater contaminated by pesticides, fertilizers, etc.
- Traps water and cleans it before it moves to local streams
- Combines city, club, and college stakeholders

Practicing Energy Efficiency: Gasoline Conservation

- Reduced mowing schedule
  - Slow-growing buffalograss
  - Lower mature height of buffalograss than other grasses
- Motor Pool Analysis
  - Vehicle use necessary
  - Vehicles sized for number of riders
  - Energy efficient vehicles

Recycling

- Paper
  - Scratch pads
  - Pick up
- Plastic Bottles
- Aluminum Can
- Printer Toner Cartridges

3. Immediate Improvement Opportunities

- Publicize and Elevate Level of Knowledge about “Green” Efforts on Campus
- Promote New “Green” Efforts—Minor and Major
- Expand “Sustainability Across the Curriculum”
- Use faculty and staff expertise in sustainability
- Further Analyze Value of Leadership in Energy and Environment Design (LEED) Certification vs. Cost
- Utilize “Green” Planning Guidelines for Renovation and New Construction
- Track New Developments in Technology for Implementation
- Establish “Designated” Parking Area Lighting
- Introduce Additional Changes in Data Center Operations as Available
- Conduct Analysis of Motor Pool Operations
  - **Appropriate utilization**
  - **Introduction of hybrid and “smart” cars**
- Incorporate Additional Strategic Energy Management Planning
- Collaborate in “Green” Efforts Locally and Across the Nation

Primary Source

Kelly J. Gernhart, “Documenting Sustainability and Green Energy at Johnson County Community College,” as a Part of a Field Experience with Dr. Jerry Baird [Executive Vice-President of Administrative Services].

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