

***SUU Facilities Management is proud to announce
we're achieving new lows AND we're aiming even lower!***

Leadership in Energy and Environmental Design (LEED) Certification: *In 2009, the State of Utah required that all new public buildings be certified at the level of LEED Silver (roughly 20% more energy efficient than the minimum building code). SUU went one step further. . .*

SUU's Center for Health and Molecular Sciences received LEED **Gold** Certification from the U.S. Green Building Council, affirming its excellence in energy efficiency, sustainability, and environmental quality.

Eco-conscious features are:

- Low-flow water systems
- Innovative LED lighting systems with auto shut-off sensors
- Metal solar shades
- Green roof layered with soil and plants to minimize solar impact
- Air barrier membrane, which minimizes air infiltration, keeping the building warm in the winter and cool in the summer.

Many other buildings on campus which were built within the last decade are constructed to the state of Utah's High Performance Building Standard (HPBS) – which is equivalent to the LEED Silver designation. The State of Utah no longer requires LEED certification, but adherence to the HPBS is required.

Water Usage: *Utah is the second driest state in the nation with one of the highest rates of water consumption – and water costs are rising.*

SUU Facilities Management has:

- Replaced natural turf in the football stadium with synthetic turf, saving thousands of gallons of water annually
- Installed 54 waterless urinals on the SUU campus, saving 40,000 gallons of fresh water annually on *each* urinal
- Planted areas of xeriscaping and drought tolerant plants to lower the use of irrigation water and the use of fossil fuels for mowing and weedeating
- Utilized the Maxi-com irrigation computerized water management system to water only when necessary, lowering usage of irrigation water whenever it rains
- Utilized secondary water for irrigating campus between 800 W and the freeway (Currently assessing the use of pond water for upper campus.)
- Required designers to select water-efficient fixtures and appliances, including low-flow faucets and shower heads, waterless or ultra-low flow urinals, sensed flushometer toilets, etc. for new construction
- Replaced water-cooled ice machines and split system A/C units with air cooled units. Each new machine saves several hundred gallons of water each day.

Fuel Consumption: *Utah Clean Cities Program is always looking at more ways to use less*

SUU Facilities Management has:

- Combined trips to reduce fuel consumption for shops to get parts and supplies.
- Implemented video conference meetings to reduce fuel consumption and carbon emissions when meetings are held in Salt Lake City.

Harmful emissions: *In 2009, the White House set a goal for 80% Emission Reductions by 2050; the White House has a goal of 17% reduction of emissions over the next decade.*

SUU Facilities Management does the following:

- **Refrigerant recovery/ reclaiming program:** Recovers and recycles 100% of campus refrigerant, reducing the impact on the ozone layer.
- **New Construction Indoor air quality management:** Requires contractors to ensure that Volatile Organic Compounds (VOC), dust, oils, and odors have been contained and removed before occupancy.
- **Heat Plant conversion to #2 oil for emergency back up:** Reduces all aspects of emissions from the Heat Plant, including opacity, sulfur oxides, nitrous oxides, and VOCs.
- **Annual Heat Plant emission report:** Ensures outstanding air quality compliance. Current production of NO_x is 92% below allowable emissions and SO₂ is 99% below permitted levels.
- **Ultra-low sulfur diesel fuel:** Using only Ultra-low sulfur diesel fuel on campus which significantly reduces sulfur dioxide emissions.
- **Carpet Tile:** Uses water-based formula glue with minimal VOCs for carpet installation.
- **Building Materials:** Encourages contractors to use local building materials and products to support local economy and reduce the environmental impacts from long-range transports.
- **Wood Floor refinishing:** adoption of new zero-VOC products for refinishing wood floors on campus

Landscape, construction, paper and other waste materials: *Recycling Coalition of Utah is constantly working to reduce solid waste in Utah*

SUU Facilities Management does the following:

- **Plastic Water Bottle Elimination** – Reduces plastic bottle waste and emissions from long-range transport through the installation of reusable drinking container filling stations.
- **Metals recycling:** Recycles several hundred pounds per year of copper, brass, steel, aluminum, and stainless steel, keeping them out of the landfills.
- **Utilizing Micro-fiber Technologies:** Uses cleaning cloths, dust mops and wet mop system with micro-fiber that can be cleaned and reused, reducing the amount of landfill waste.
- **Restroom Paper Products:** Purchases paper products which are made of 95-100% recyclable fiber for paper towels with dispensers that reduce usage by 30%. Toilet tissue with 20% post-consumer recycled fiber, dispensed in larger single sheets to reduce waste. Tissue is shipped using 45% less packaging waste than jumbo roll cases. Both paper products are manufactured with elemental chlorine-free (ECF) bleaching and consist of materials which meet or exceed EPA Comprehensive Procurement Guidelines. Some of the paper towel manufacturing by-products are used for growing grass, building roads, and providing a strong foundation for highways.
- **Carpet Tile:** Uses carpet tile that is recyclable and wastes very little because of the layout.
- **Entrance Mats:** Uses entrance matting systems that reduce soil being brought into the buildings, reducing the need for carpet replacement and excess cleaning hours.
- **Landscaping:**
 - Uses pruned tree limbs as mulch/wood chips to spread on campus
 - Mulches grass clippings to become organic material for turf
 - SUU's Grounds division plants approximately 100 trees each year (each tree can filter up to 60 pounds of pollutants from the air annually). Campus currently has more than 2,100 trees.
 - Trees serve to enhance outdoor comfort on campus by providing shade, serving as a windbreak, helping reduce noise trespass, and helping to control the solar load on a building
 - Trees give dimension to landscape and help prevent erosion from runoff or rainstorms
 - Trees are part of the solution to combating climate change since they absorb CO₂ from the air and produce oxygen

- Trees help reduce the water needs of the surrounding landscape by providing shade and a wind block to lower the transpiration rate in plants
- **Construction Waste** – Ensures that construction waste, demolition, and land clearing wastes are recycled, composted, and salvaged.
- **Facilities Management Administration Building Efforts:**
 - Recycle office scrap paper
 - Reduce the number of hard copies made
 - Recycle ink cartridges
 - Turn off lights whenever a room is vacant
 - Xeriscape landscaping around the building
 - Sun-tracking solar arrays provide daytime electrical use on most days

Harmful chemicals: *DEQ's mission is to safeguard human health and quality of life by protecting and enhancing the environment.*

SUU Facilities Management does the following:

- **Uses “Green Seal” certified chemicals** – Spartan product line is effective and cost competitive, reducing the use of harmful chemicals for custodial use.
- **New Construction**, for indoor air quality, designers select adhesives and sealants, paints and coatings, carpet, and composite woods with low-emitting materials.

Kilowatt Hours:

SUU Facilities Management’s Renewable Energy Projects and Conservation Projects save kilowatt hours:

- **Photovoltaic Solar Array installations at Facilities Management Administration Building/Shops** – 94.5kW solar net metering systems produce power and relieve the campus electrical load, saving the equivalent electrical power used by 70.19 homes in a year, which also offsets the production of CO₂ released into the atmosphere.
- **Building efficiencies**
 - **Multipurpose Center:** Replaced all exterior lights around the building with LED and CFL lamps. Also retrofitted the gymnasium with 48-220 watt high bay T-5 fluorescent fixtures, replacing 48-320 watt HID fixtures.
 - **Roofing Projects:** Replaced roofs, using roofing materials that are light in color and reflective, reducing the solar gain. Increased R-value insulation from R-18 to R-40, saving on heating and cooling energy and costs on multiple buildings, including the Mountain Center which yielded a 44% decrease in propane consumption.
 - **Recommissioning projects:** Restored building operating systems for increased energy efficiency in Sharwan Smith, Student Center, Engineering and Technology, Library, General Classroom, Music, Heat Plant, Institutional Residence, Conference Center, and the Events Center.
 - **Variable Frequency Drives:** Variable speed operation of electric motors significantly reduces their power consumption.
 - **Steam powered condensate pumps:** Pumps located in Multipurpose, Student Center, Science, Library, Education Building, and in the Heat Plant use the pressure of existing live steam to move condensate back to the Heat Plant in the steam distribution system, in lieu of electrical powered pumps, which saves energy.
 - **Steam pressure operation:** Reduced steam pressure operation in the Heat Plant which saves energy by not having to maintain pressures that are above what is required for campus distribution.
 - **Steam Control Valves:** Insulation jackets have been installed on large steam control valves to eliminate heat loss. This has dramatically reduced the ambient temperatures in the associated mechanical rooms.

- **Building scheduling:** Applied daily scheduling efforts to minimize operation times of large building mechanical systems.
- **Utility tracking via sub-meter reading:** Improved utility management by allowing individual buildings to be metered.
- **NEMA premium efficiency motors:** Established as a University standard to reduce electrical consumption and minimize utility demand charges due to low power factor.
- **Pipe insulation:** Repaired and replaced insulation on steam, hot water, and chilled water lines on numerous buildings to save thousands of BTU's per year.
- **Water heater insulation jackets** have been installed on water heaters on campus, reducing the loss of radiant heat from the heaters and reducing energy usage.
- **Student Center Chiller replacement:** Replaced old chiller that was failing – the new chiller saves 27,217kWh/year.
- **Re-caulking windows:** Reduced energy waste by re-caulking windows.
- **Weather-stripping Installation:** Placed weather stripping on thresholds to better seal doors to reduce energy waste on multiple buildings, including: Randall Jones Theatre, Bennion Building, Harris Center, and Music Building.
- **Space Heater Exchange** – Educated faculty/staff on the use of energy efficient and safety approved space heaters.
- **Rocky Mountain Power Incentives:** Participated in the *Wattsmart* Business Incentive Program to improve the energy efficiency of a number of areas on campus. To date, those projects have reduced usage by over 70,000 kilowatt-hours.
- **President's Residence HVAC Unit Replacement:** Replaced the 18-year old temperature control system with state of the art energy efficient equipment. Additionally, replaced perimeter caulking around doors and windows for energy savings.
- **Transformer Upgrade:** Replaced many building transformers for safety, reliability, and improved energy efficiency.
- **Air Handler Replacement:** Replaced the aged air handler in the Music and General Classroom buildings with new highly efficient units.
- **kBTU usage across campus is down 10% since 2007, even with added square footage.**
- **Lighting Projects**
 - **Campus lighting standards:** Developed standards for indoor and outdoor fixtures, addressing energy efficiency and errant night sky light pollution.
 - **Extensive lighting retrofits:** Installed high efficiency lighting products in the Bennion, Sharwan Smith, Student Center, Science, Events Center, Coliseum, Business, Technology, Multipurpose, Centurium, Library, Facilities Management Shops, and ELC, Library, Music, Multipurpose Dance Lab, Heat Plant, Randall Jones Theatre and 236 walkway lights, which increases energy savings and reduces maintenance hours.
 - **LED Lighting Upgrades:** Several locations across campus have been fitted with LED fixtures that save as much as 90% over older lighting technologies. In addition to energy savings, the amount of glare from errant light is greatly reduced with the implementation of full cutoff fixtures. Retrofitted areas include the Technology Building, Sharwan Smith Building, Events Center, Facilities Management, Multipurpose Center, General Classroom, Auditorium, Randall Jones Theatre, Campus statue lighting, PE Building and Parking Lot¹, Heat Plant, Old Sorrell, Outdoor parking lots, Science Center, Old Main, the Library, Braithwaite, Hunter Conference Center, Music, Motor Pool and Receiving, Business Building, Observatory, Bennion Building, Tennis Courts, and many more.
 - **Smart panel lighting controls and Honeywell light scheduling:** Used precise lighting control of lights inside and outside of buildings year round for energy efficiency.

- **Tennis courts lights:** Installed automatic timers that limit per time use and hours per day use, for less run time, saving an average of 84 kWh per day of use.
- **Concourse up-lighting:** Eliminated up-lighting in the Events Center arena concourse in order to better utilize daylight from the upper windows. Also, reconfigured area lights to reduce lighting in unnecessary areas.
- **Auditorium** – 260 incandescent lamps (25 watts) were replaced by 260 (5 watt) LED lamps in the main house of the Auditorium, resulting in a savings of over 5,000 watts. Previous total wattage: 6,500; new total wattage: 1,300.
- **Campus Exterior Lighting Improvements:** Replaced and enhanced lighting in parking lots and walkways to improve energy efficiency and safety. This a project addresses the replacement of parking lot lights and walkway fixtures with new LED technology. All of the installations provide more visible light with reduced wattage consumption.

¹ Rocky Mountain Power inquired as to whether or not the power meter on the PE parking lot was billing correctly - a result of an SUU energy saving project which consisted of replacing 18 - 400 watt metal halide lamps with 36 - 26 watt LED fixtures, thus reducing the power usage in the parking lot from 26,280 kWh to 3,416 kWh per year. This equates to an annual 87% savings in that location.

We're proud of the lows we've achieved. We're saving money AND conserving critical resources!