

Energy Conservation Measures

Measure	Category	Description	Location
Setpoints	Heating and Cooling	Where building automation allows, heating temperature setpoints were lowered from 72 to 68, and cooling temperature setpoints were raised from 72 to 76 degrees.	Throughout Campus
Lighting Upgrade	Electricity	Upgraded older fluorescent and incandescent fixtures to LED, CFL, T-5, and T-8 fluorescent fixtures	Throughout Campus, Old Glove Factory (CFL's and LED), Chrystal Center (T-5, reduced consumption by 75%), Maine 1st Corridor (T-5), Mears Classrooms (T-5), Science Clerestory (T-5), Athletics Phase I (T-5), Nollen House (T-5)
Centralized Centrifugal Chillers and Underground distribution	Heating and Cooling	in some cases replacing inefficient air-cooled chillers and direct expansion A/C	Science, Fine Arts, Goodnow, Forum, Burling, Steiner, Herrick, Carnegie, ARH, Harris, Cowles, Norris
Variable Frequency Drives (VFD's)	Heating and Cooling	on air handler fans and chilled water pumps	Throughout Campus, Nollen House
Energy Efficient Windows	Heating and Cooling	??	Fine Arts, Old Glove Factory, East Campus, Athletics Phase I, Rosenfield Center, Science Phase II, Nollen House
Direct Digital Temperature Control	Heating and Cooling	Upgraded from inefficient pneumatic controls	Throughout Campus
Direct Digital Temperature Control	Heating and Cooling	upgrades on domestic water heating system from thermostatic control	Fine Arts, Old Glove Factory, Cleveland, Loose, Younker, Dibble, Read, ARH
Lighting Upgrade	Electricity	Replaced older fluorescent fixtures with metal-halide fixtures	PEC
Energy Star Reflective Roofing	Heating and Cooling		Old Glove Factory, Chrystal Center, East Campus, Forum, Norris, Athletics Phase I, Rosenfield Center, Science Phase II
Heat-recovery module on air handler	Heating and Cooling	Heat from exhaust transferred to intake air	Chrystal Center, Athletics Phase I, Rosenfield Center, Science Phase II
Centralized Boiler Plant	Heating and Cooling	4-pass fire-tube boilers, advanced combustion management system, new steam and chilled water underground distribution with improved insulation jacketing	Throughout Campus
Direct Digital Temperature Control	Heating and Cooling	"open window" sensors to shut off heating/cooling	East Campus, Langan, Cleveland
Direct Digital Control Scheduling	Electricity	DDC control (scheduling) of interior lighting	Chrystal Center, Science, Fine Arts, Rosenfield Center, Science Phase II
Geothermal	Heating and Cooling	geothermal heat pump for heating and cooling	CERA EEC, Athletics Phase II
Motion Sensors	Electricity	Motion sensors for lighting	CERA EEC, Facilities Management, Chrystal Center, East Dorms, Rosenfield Center
T-5 Light Fixtures	Electricity	T-5 fluorescent light fixtures	CERA EEC
Demand Based Ventilation Strategy	Heating and Cooling	Demand based ventilation strategy using carbon-dioxide monitoring to limit air-exchange rate	CERA EEC, Rosenfield Center, Science Phase II
Reverse Osmosis Water Filtration	Heating and Cooling	??	Boiler Plant
Steam Trap Inspection	Heating and Cooling	Minimize wasted steam energy	Throughout Campus
Waste Heat from refrigeration reused	Heating and Cooling	Wast heat from refrigeration units is reused to pre-heat intake air and domestic hot water	Rosenfield Center
Variable air flow hoods	Electricity	Hood system is moderated by temperature	Rosenfield Center
Daylighting Control	Electricity		Rosenfield Center, EEC
Solar powered external lights	Electricity	Installed solar lighting system for parking area	CERA EEC,
Pole Lighting	Electricity	All new pole lighting meets Dark Sky standards, reduces consumption by 1/3	8th Ave. Corridor, Old Glove Factory
Increased Envelope Insulation	Heating and Cooling	Increased insulation	Gates, Rawson, Ecohouse
Downsizing of Residential Water Heaters	Heating and Cooling	When applicable, water heaters in formerly residential houses are downsized to meet non-residential needs	Various houses

High Efficiency Water Heater	Heating and Cooling	A highly efficient water heater was installed at Grinnell House	Grinnell House
Motion Sensors	Ventilation	Motion sensors were installed on fume hoods to allow for reduction of ventilation	Science
Vending Mizers	Electricity	Vending Mizers were installed on all vending machines. These are motion sensors that reduce electrical consumption when nobody is near.	Throughout Campus, 40 total
Warehouse Replacement	Heating and Cooling, Electricity	The new FM warehouse used high efficiency spray foam insulation, efficient radiant heat, T-8 fixtures	FM
Air condition Removal	Electricity	Air conditioning units were removed from Langan	Langan
Rooftop Air Handlers	Heating and Cooling	PEC rooftop air handlers were replaced with more efficient units	PEC
Conversion to Central Chilled Water	Heating and Cooling	inefficient individual air cooled chillers were converted to centralized chilled water	Steiner, Herrick, Norris
Removable Boiler and Steam Fitting Jackets	Heating and Cooling	Insulated jackets are placed on boilers and any fittings that are typically uninsulated due to maintenance access needs	Boiler Plant, steam fittings
Variable Frequency Drives (VFD's)	Heating and Cooling	Feed water pumps for boiler plant are converted to VFD's.	Boiler Plant
Efficient Elevator	Electricity	Efficient elevator consumes 1/3 power of typical elevator	Nollen House