City Hall

notes as of 12-2007

1993 Energy Analysis and Conservation Opportunities study (Energy Analysis and Diagnostic Center, KU)

Recommendations:	Status 2007
group relamp and reballast with T8 lamps and electronic ballasts	complete lighting renovation project replaced all T12 lamps; fixtures converted to electronic ballasts T8 lighting
install occupancy sensors	ground floor pilot project in 2007; 2008 plans to install occupancy sensors in all restrooms
install photocells in atrium and hallways	one photocell installed. All lighting upgraded
replace mercury vapor lamps	6 mercury vapor fixtures have been eliminated. 4 fixtures remain outside east doors. Will upgrade when replaced
install compact fluorescent lamps	completed in City Commission chambers (approx 5000 watt savings)
setback unit heater thermostats	energy management control systems with programmed set back for unoccupied spaces and times. Added HVAC technician to staff for increased operational efficiencies
modernize the economizer cycle on the building air conditioning units	entire HVAC system renovated as a five phase project
install high efficiency motors	eliminated an air compressor and an air dryer; variable volume system replaced air bypass
reduce domestic hot water temperature	reduced from 2 to 1 hot water tank; replaced facility hot water recirculating pump

FCIP programs -- typical elements (per 2005 presenation slides)

lighting: replace incandescent, upgrad flourescent	complete lighting renovation project replaced all T12 lamps; fixtures converted to electronic ballasts T8 lighting
heating: replace aging boilers, steam traps, and pumps	HVAC system renovation. Replaced constant velocity supply air system to a variable volume system. Converted system from 1 large compressor to 8 small compressors to allow staging to meet demand and minimize energy input requirements. Circon Management Control system, final phase completed in 2006.
cooling: replace aging chillers, cooling towers, pumps	
ventilation & distribution: install variable speed drives, replace fan and pump motors, replace HVAC equipment	
controls: install energy management control zone systems or improve operational controls	
water: install water saving plumbing fixtures	restrooms on all floors have been renovated. New fixtures include all auto-sensors (stools, sinks); low water urinals
building: increase insulation levels, replace windows	brick structure; roofing project (year?) increased insulation; reflective film added to windows with direct exposure. 2008 project planning for replacement of operable windows.
alternative energy: wind, peak shaving, geo thermal, solar	no alternative energy sources utilized directly for this facility; city purchases green tags to off-set 3% total consumption with renewable energy sources.