



## Facilities Management Department

### 5 Year Energy Conservation Plan

#### Completed Projects

##### Energy Management – Phase I

- Energy Management System that centrally controls temperatures in all major buildings. Central control covers 95% of the buildings and the other 5% are freestanding small facilities with small A/C units.
- Included the Green Library lighting on the Energy Management System to efficiently control on-off time intervals.
- The University implemented a four day ten hour week Summer Schedule and the expected saving from the initiative are in the realm of \$250,000 in utilities bills.
- Adjust temperature to 75°F in all buildings. FIU has achieved savings of 7%-10% with this modification.
- Usage of T8 fluorescent tubes and electronic ballasts in buildings. FIU started this process ten years ago and has completed the replacement throughout all campuses. The new standard T8 fluorescent tubes use fewer watts than their predecessors.
- Night time HVAC Setback mode has been extended. Estimated savings between 3%-5% are being achieved by raising the temperature from 75°F to 80°F during night hours.
- Raised chiller temperatures from 44°F to 48°F. We estimate savings of 2%-4% with this increase.
- Electronic software monitoring to alert technicians of HVAC load changes. With this automatic notification system, FIU technicians are alerted of any malfunctions or drastic changes so we can prevent costly damages to our systems.
- Installation of motion detector lighting switches in offices and classrooms. By using motion detection switches in offices we are expecting to reduce the electric consumption when spaces are not being used. New buildings are equipped with these devices and we are in the process of installing them in buildings where office space is significant.
- The general lighting at PC Building (administration building) will be added to the Energy Management System.

- Lights will be automatically turned off during night hours to achieve electricity savings.
- Closing of buildings for usage outside of normal operating hours.  
When possible, buildings temperature is being increased to 80°F at night and during weekends.
- All new buildings will be LEED certified and FIU is aiming for a Silver Certification.  
Buildings will be more efficient and produce less carbon footprint with the use of better designs, improved construction techniques, and more efficient materials.
- Switch from Liquid Propane to Natural Gas on UP Campus.  
FIU is close to signing a contract with Florida City Gas to install natural gas lines on UP Campus. The savings expected with this initiative will be about \$250,000.
- Implementation of Xeriscape landscape materials (less watering and maintenance resources) in as many sites as possible.

### Energy Management- Phase II

#### Resource Conservation Initiatives

- Replacement / addition of chillers to energy efficient 134A units.  
New chillers are replaced for phased out units with higher energy efficiency with less Kw/Ton consumption.
- Installed variable speed air handler units throughout campus.  
This automatic system regulates the fan speed depending on the total load of the system.
- Variable speed transport and building pumps for chilled water.  
Achieved efficiencies by automatically adapting to pumping volumes depending on the system's load.
- Efforts have been increased to encourage campus with recycling.  
FIU has reduced the amounts of dumped solid waste on paper, cardboard, aluminum, and glass.
- Using water from retention ponds for irrigation has allowed us to save on water usage since there is no cost to use this onsite source.
- Automatic control of Chiller Plant at MMC.
- Power Management Control installation.

### Projects in Progress

#### Energy Management – Phase II

- Addition of the ACII building on BBC Campus to our current Energy Management System in order to standardize our systems controls and achieve and measure efficiencies.

#### Resource Conservation Initiatives

- Installation of MBTU metering at all buildings along with computer software to capture chilled water usage and be able to balance loads more efficiently and charge non E&G entities for exact chilled water used.

- Ongoing investigation to determine the feasibility of compost (biogester) technique to reduce food waste costs at the FIU's Cafeteria.  
This is a joint investigation that involves Facilities Management and Aramark our major food services provider.
- Low use water fixtures are being installed in all restrooms.  
Installation of efficient 1.6 gpf. toilets as well as motion detecting or hydraulic timed faucets.
- Evaluate effectiveness of existing systems and retro-commissioning of existing buildings to make corrections to increase efficiency.
- Use of recycled materials in carpeting and furniture as well as installation of more efficient lighting in all renovated classrooms.

### Projects for Future (5 Years)

#### Energy Management – Phase III

- Investigation of solar roof panels for roof replacement projects and new construction. Depending on the results of cost-benefit analyses and the availability of funds the university will decide the use of this technology.
- Conduct energy audits by independent consultant to identify cost savings programs on all campuses.  
This would include but not limited to:
  - Ice Storage
  - Re-heat techniques for humidity control
  - Building upgrades – i.e. HVAC System
  - Lighting Systems –i.e. LED (Interior lighting)
  - Cost-benefit analysis for implementation of initiatives in all buildings
- Upgrade of air handlers and controls throughout campus to increase efficiencies and reduce cost.
- Re-roofing projects will add extra insulation to achieve energy efficiency and reduces heat load.
- Upgrades and redesigns in labs ventilation systems that efficiently improve air quality will be studied.
- Load Control Software / Management- energy and life safety equipment monitored 24 hours per day.
- LED street lighting along with walkway lighting.
- New Building Management Controls for Engineering Campus.