

Florida Gulf Coast University Energy Efficiency Measures

- Installation of a 2 MW solar field scheduled for completion May 2009.
- Motion detectors to the lights in newly constructed buildings. In older buildings, employees are encouraged turn off lights, monitors, printers, etc. when not in their office or work area.
- Power down monitors, shredders, printers and other equipment in common areas when not in use. (Office managers)
- Solar thermal units for hot water in the residence halls.
- Installation of equipment that removes the humidity from external air intakes before entering the building resulting in a decrease usage of electricity compared to convention HVAC units.
- Increasing the thermostats by two degrees.
- All buildings being built will be LEEDs certified.
- FGCU has two thermal ice storage systems on campus which make ice during FPL (FGCU's utility provider) off-peak period. Both are full shift configurations which mean no large power consuming chillers run during peak period. The ice farm is melted during peak period and distributed to campus buildings via underground insulated chilled water lines. System saves the university in excess of \$200,000 per year in utility costs, while reducing the need for additional electrical generation capacity in the FPL system.
- Currently in 15-year performance contract with Johnson Controls. Plan implemented very efficient primary/secondary pumping system to all facilities on main campus chilled water loop. Buildings only draw off necessary chilled water needed by load. Also, variable frequency drives installed throughout campus core buildings for further energy savings, and lastly, duty cycling of mechanical equipment during off hours, weekends, and low occupant load periods to further save energy and equipment use. Plan saves the university in excess of \$200,000 annual in deferred energy costs.
- Installed CO2 monitoring control and air flow monitoring stations in our large Alico Arena to save energy. Arena from its initial design was being overcooled during unoccupied times. New control supplies necessary cooling based on CO2 readings. Incentives from FPL for demand control ventilation have played a key part in funding this project with their incentives.
- Environmental Health and Safety has a couple of student service learning projects that are measuring lighting and ventilation levels in University buildings and comparing them to recommended minimum levels.

- For ventilation we are measuring temperatures, relative humidity, and an indirect indicator of fresh air ventilation. This information will provide more detailed information than Physical Plant gets from the zone monitors in its control system.
- In laboratory design, we are specifying ventilation and hood flow rates at the lower end of recommended practices. Rather than focusing on total air flow and exhaust, we are concentrating on getting better mixing and use of the lower levels of air we are using. For example, the recommended air changes per hour in a laboratory space are 6 – 10. The marginal reduction in airborne contaminant level falls off as you pass 6 air changes per hour, but the increase in energy cost remains the same for each increase. By focusing in mixing and distribution of the air we get satisfactory contaminant control with a lower airflow, and lower associated cost to condition and move the air.
- FGCU has most recently installed an ERV (Energy Recovery Unit) on one of the new facilities. The unit recovers energy of general building exhaust through energy recovery wheel technology which pre treats outdoor air from extreme conditions (humidity/temperature) for delivery to the building air handlers. The energy required to condition the outside air is reduced by recovering the general exhaust air stream. Typically this air is vented out of the building and is now being recirculated through the ERV. Current FPL incentives make this a positive install with incentives and continued energy savings. Future new construction projects will be considered for ERV installations.