

# ENERGY USER NEWS

THE AUTHORITY ON ENERGY MANAGEMENT AND BUILDING SYSTEMS

AWARD WINNER—INSTITUTIONAL FACILITY: Fort Lauderdale Library

## Library's Lighting, Mechanical Retrofit Cuts Energy Use by 66 Percent

*County first in U.S. to join EPA's Green Lights program*

By GRANT GEGWICH

**F**T. LAUDERDALE, FLA. - The Broward County Commission has earned the Efficient Building Award in the Institutional Facility category for a lighting and mechanical system upgrade of the Fort Lauderdale Library that reduces electrical use by 66 percent and on-peak demand by 70 percent. The project is part of a larger energy performance contract with CES/Way, Houston, to retrofit several libraries in Broward County. The projects are being paid for through guaranteed savings.

In addition to \$36,806 in annual energy savings, the Ft. Lauderdale project is expected to provide \$10,955 in maintenance and operational savings. In the first six months after the installation, energy costs

were just \$9,211 compared to the previous year's \$27,294 total.

Part of the motivation for the project was the county's participation in the Environmental Protection Agency's Green Lights Program. Broward is the first county government in the U.S. to join the program, according to Anthony Rosa, energy manager of the Broward County.

### LIGHTING RETROFIT

The lighting retrofit included the installation of 699 T-8 lamps, 83 compact fluorescent lamps, and 345 ballasts. The total number of lamps and ballasts in the facility was reduced, lowering future maintenance costs. "Where there were four-lamp fixtures, we used two lamps and a reflector. Besides energy savings, we also see operational savings from this setup because maintenance now has less lamps to replace," Rosa says.

An art gallery within the library offered some lighting challenges. "The lighting of artwork requires special considerations including color rendering that existing compact fluorescent lamps do not provide. In these areas, the most energy-efficient option is not necessarily the best application," Rosa says.

On the mechanical side, an aging 100-ton chiller was replaced with an 80-ton air-cooled reciprocating model. The county was able to install a smaller chiller because of the installation of an ice storage system to shift

chiller operation to off-peak hours. Ice is produced when the building is not in use by circulating a chilled water/glycol mixture through tubes within the ice tank, freezing the surrounding water. The chiller is shut down during on-peak hours and the chilled water is circulated from the ice tank to the building to provide the space cooling. The system has a capacity of 761 ton hours.

These changes allowed the library to take advantage of a dramatically lower rate from its local utility, Florida Power & Light. A new time-of-use meter was installed for monitoring purposes.

"Although the project is also realizing savings in usage, the majority of our savings are related to the demand reduction achieved," Rosa notes.

In addition, Florida Power & Light chipped in with \$8,590 as a rebate for the lighting upgrade and \$21,318 for the chiller and ice storage system. The new cooling system is being controlled by a new energy management system with 114 points.

Rosa is pleased with the actual installation, as well as CES/Way's participation following the project. "It went very smoothly. And once the system was in, CES/Way held a day of training there. Some of that training is ongoing," he says.

