

# Municipal Center

State-of-the-Art Energy Efficient Public Building

Village of Palmetto Bay, Florida



## *Project Description*

25,000 SF Municipal Building to house the municipality's administrative departments, the Policing Unit and the Council Chambers where up to 98 members of the public may gather and participate in the Village's public meetings. Additionally, the facility features an Emergency Operations Center where officials may direct post-disaster opera-

tions. The building is now a LEED Platinum certified building by the USGBC; this is the highest recognition available for green building design and construction. The Palmetto Bay Municipal Center is the first office; government building in Florida to obtain this certification.

## *Green Elements*

- Photovoltaic Power
- Cistern Irrigation System (40,000 gallons)
- Cistern Flushing System (20,000 gallons)
- Daylight Harvesting Design
- Energy-efficient Doors & Windows
- Variable-refrigerant air conditioning system & ductwork designed to reduce external state pressure
- 95% LED Interior/Exterior Lighting
- LED Landscape Lighting
- Occupancy Sensors for Lighting & Exhaust Fans



- Solar Thermal Energy System (water heater)
- 50,000 SF of Permeable Pavers for water collection
- Water condensate collection system
- Dual-flush restroom fixtures
- Xeriscape Landscaping
- High-emissivity roof material

Members of Congress, Ileana Ros-Lehtinen, Mario Diaz-Balart and David Rivera join the Village Council and Village Manager for the ribbon-cutting

March 2011





*Palmetto Bay seeks to become a model community for energy savings and environmental conservation. The Municipal Center is a testament to this goal. The Village has also launched its own "Green" website to bring awareness to the masses about conservation and energy efficiency.*

## *Recognitions*

- First municipal center to obtain Platinum-level certification from the U.S. Green Building Council (USGBC)
- Recipient of the 2011 Award of Excellence in the Pavers category presented by the National Concrete Masonry Association
- Honorary guest of the 2012 Paver Palooza event by Hanson Hardscapes featuring the Municipal Center project

## *Project Photos*

### **Photovoltaic Roof**



The project design featured flat roof panels where possible to accommodate 120V of solar power captured by a spread of Photovoltaic panels. A total of \$13,090 or 21,305 CO2 was saved in a 3-month period from April through July 2012. Twelve inverters capture and translate this information into an energy monitoring program for easy viewing and retrieval.



## Project Photos

The hardscape is comprised of permeable pavers which cover all hard surfaces. The unique design allows rainwater to be filtered through and collected into one of two cisterns. There are no drainage points throughout the site. All water is collected in the paver underlayment,

whereby a rock filtering system transports the clean water to the cisterns. Localized flooding is almost impossible. Additionally, the pavers attract less heat than tradi-



### Permeable Pavers



### Cisterns



Two underground cisterns were built onsite. A 40,000 gallon cistern collects sufficient water to irrigate the entire site. A smaller 20,000 gallon cistern collects water for flushing all toilets and urinals which employ a dual-flushing mechanism. In addition to the water collected through the pavers, water condensate from the air conditioning system is also captured and collected in the cisterns.

# Palmetto Bay Municipal Center



## *Project Photos*



LED fixtures were used for both INTERIOR AND EXTERIOR lighting. Exterior LED lighting features a multicolored RGB design. All landscape lighting is also LED. Interior lighting is 95% LED and all systems are connected to individual motion sensors that automatically shut off the lights when no one is detected in the area.

## *Other Energy-Saving Features:*

- Variable-Refrigerant AC system; the system is comprised of 31 different zones, each one with their own thermostat which can be controlled simultaneously or individually for maximum efficiency. Ductwork used was designed to reduce external static pressure and minimize fan energy
- Solar Water Heater: all water fixtures, including showers are connected to a 100% solar water heater. Power is generated by photovoltaic panels on the roof of the bicycle station
- 1 covered bicycle station featuring a see-through photovoltaic roof to power the water heater
- 2 car charging stations
- Drip irrigation system

