

Eastside Branch Library



Project Summary

Project Size: 12,000 square feet

Mechanical Equipment Value: \$100,000

Leon County's Eastside Branch Library was opened in November 2011 and sets the standard in terms of sustainability, preservation of cultural history, and active community service and outreach. As a library, this project demanded an HVAC system that was quiet, provided excellent humidity control/indoor air quality, and was energy efficient, thereby saving public resources. In response to these demands, Brooks Air Systems was able to provide a cost-effective variable-air-volume chilled-water/hot-water system with building controls that helped the project earn a LEED Gold certification.

Project Objectives

- Gain LEED points using exhaust air to pre-condition incoming outside air
- Minimize HVAC operating noise.
- Provide precise indoor air control:
 - Temperature and humidity conditions.
 - Maximize indoor air quality for occupant health.
- Maximize investment through energy efficiency and equipment longevity.
- Effectively integrate HVAC operation with other building systems.

Solutions Delivered

Serving as the backbone of this package were a McQuay air cooled scroll chiller, semi-custom modular McQuay air handling units, ABB variable frequency drives, Enviro-Tec variable-air-volume (VAV) boxes, and a complete Alerton Controls system. Additionally, a creative solution for air handling and passive cooling was actualized through a custom McQuay Energy Recovery Unit (ERU).

System	Total Capacity
(1) McQuay air-cooled scroll-compressor chiller	30.1 tons
(1) Custom McQuay Vision air handling unit	10,780 cfm
(1) Custom McQuay Energy Recovery Unit	2,260 cfm
(3) Enviro-Tec FCUs	1,935 cfm
(14) Enviro-Tec (electric heat) single-duct VAV boxes	10,780 cfm
(2) ABB VFDs	
(1) Complete Building Automation System	

Featured Technology

McQuay Energy Recovery Wheels

The McQuay energy recovery unit used at the Eastside Branch Library utilizes a desiccant energy recovery wheel that pre-cools and dehumidifies incoming fresh air using exhaust ventilation. This is accomplished by a process that draws outside air across the top half of the wheel while drawing exhaust air across the bottom half, transferring heat and moisture from the incoming outside air to the outgoing exhaust air. During peak load this sheds about 9 tons of cooling load off of the chilled water system, which helps keep humidity down. This technology also saves energy beyond the summer months, as the process works in reverse during the winter and incoming cold outside air is pre-heated by warm exhaust air, providing 171,000 Btu/hr of free pre-heating at design conditions.

The McQuay total energy recovery wheel allows use of an AHU that uses less energy year-round and is a technology recognized in LEED criteria that helped the Eastside Branch Library achieve Gold certification.

