



case study

products

CITY MULTI

market

Educational Facility

location

Greensboro, N.C.



College Awaits LEED® Certification

Project Name:

**Archdale Hall,
Guilford College**

Location:

Greensboro, N.C.

Completion Date:

September 2008

The Team

Owner

**Guilford College,
Greensboro, N.C.**

LEED Architect / Administration

**Spectrum Design, PC,
Roanoke, Va.**

LEED Commissioning

**Commissioning WorCx,
Jamestown, N.C.**

HVAC Contractor

**Triad Sheet & Metal,
Greensboro, N.C.**

Established by the Quakers in 1837, Guilford College is the third oldest co-ed college in the U.S. Archdale Hall was built in 1885 and named for John Archdale, a Quaker who served as the governor of North Carolina from 1694-96. A men's dormitory for 80 years, the Hall was converted into faculty offices in 1965.

Committed to Green Building

Guilford College's Associate Vice President of Operations and Facilities, Jon Varnell, is part of the industry's growing corps of facility managers committed to green building. With an interest in sustainable, eco-friendly solutions, Varnell was looking at options for renovating the oldest building on the 350-acre campus, Archdale Hall. His goal was to have the building achieve Leadership in Energy and Environmental Design (LEED) certification.

In addition to frequent complaints from faculty (individual cooling and heating discomfort, noise and indoor air quality), Varnell was unhappy with Archdale's outdated 1950's renovation which included soaring costs for energy inefficiencies.

CITY MULTI® Systems Introduced

Disappointed by advice from an initial LEED consultant, Varnell turned to a trusted partner in the HVAC business. After a tour of the old building, Varnell's contact introduced him to the industry's

finest – multi-split variable refrigerant flow (VRF) technology with zoned INVERTER-driven heat pump and heat recovery systems.

Varnell learned that the best and brightest VRF technology he could buy was manufactured by Mitsubishi Electric HVAC Advanced Products Division, Suwanee, Ga. Called CITY MULTI VRFZ (Variable Refrigerant Flow Zoning) systems, the product would solve Varnell's problems. It includes INVERTER technology that maximizes individual comfort in separate zones, improves indoor air quality and often cuts energy costs in half. Additionally the Mitsubishi Electric HVAC technology could help Varnell earn valuable credits toward LEED certification. Varnell toured several local CITY MULTI installations including a North Carolina State Trooper headquarters.

Seeking LEED Silver Certification

To help implement the CITY MULTI installation, Varnell turned to Spectrum Design, PC, Roanoke, Va., a firm known for environmentally friendly designs in education facilities. "We liked the CITY MULTI system recommendation immediately," said Mark Garland, Spectrum green building coordinator. "Although new to Mitsubishi Electric HVAC technology, we soon learned that it was a great concept for Archdale Hall, an excellent choice for renovating old buildings and a good fit for achieving



LEED certification. The CITY MULTI installation contributed to 7 of the 39 points on the LEED-NC Version 2.2 Registered Project Checklist. Achieving Silver certification requires 33-38 points,” Garland said.

LEED Commissioning Process

Varnell understood every LEED certification is earned through a comprehensive review process administered by the U.S. Green Building Council (USGBC). To qualify, Archdale Hall’s installed energy systems must first receive a third-party endorsement from a commissioning professional. Varnell hired Tom Foster, PE, CBCP, LEED AP, founder of Commissioning WorCx, Jamestown, N.C. “This was my first experience with commissioning a VRF system,” Foster said. “I am very impressed with the performance of Mitsubishi Electric HVAC’s VRFZ technology. The R2-Series system specified has solved every complaint from the faculty occupants of Archdale Hall. I also know that the CITY MULTI system installation and equipment costs saved Guilford College a large six-figure price tag from a water-source heat pump system (with 12 wells) originally specified.”

A New Campus LEED Directive

“CITY MULTI VRFZ systems are a great solution for the many challenges presented by this 124-year-old structure,” Varnell said. “Environmentally, the CITY MULTI system’s efficiency has set the standard and will assure LEED Silver certification. The system is a complement to the artful renovation of the building’s interior. Mitsubishi Electric HVAC’s floor-standing exposed indoor units are ideal for offices with no ceiling space for ducting. They have a highly efficient air-conditioning performance and low operating sound which have made the faculty who occupy the offices very happy. Because of the satisfaction of the Archdale Hall installation, the Guilford Board of Advisors has made a new directive that all future campus renovations must strive to achieve LEED certification,” Varnell concluded.

The floor-standing PFFY exposed indoor units (end of hall) are ideal for offices in historic buildings with no ceiling space for ducting.

CITY MULTI Equipment Installed:

- (2) PURY R2-Series Outdoor Units
- (31) PFFY Floor-standing exposed Indoor Units
- (1) PEFY Ceiling-concealed low profile Indoor Unit
- (1) PEFY Ceiling-concealed high static Indoor Unit
- (4) CMB Branch Controllers
- (1) LGH Lossnay ERV Unit
- (32) PAC Simple MA Remote Controllers
- (1) G-50A Centralized Controller with TG-2000 Software