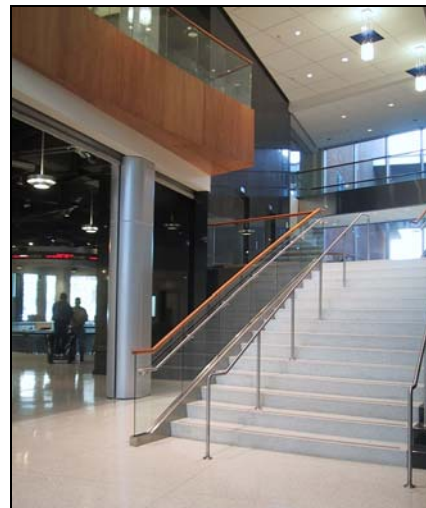


ARCHITECTURAL ENERGY
CORPORATION
Integrated Engineered Solutions

University of Memphis FedEx Institute of Technology

Memphis, Tennessee



Corporate Offices:
2540 Frontier Avenue, Suite 201
Boulder, Colorado 80301
303 444 4149 Telephone
303 444 4304 Fax

San Francisco Office:
142 Minna Street
San Francisco, California 94105
415 957 1977 Telephone
415 957 1381 Fax

Chicago Office:
955 North Lively Boulevard
Wood Dale, Illinois 60191
630 860 1439 Telephone
630 860 1442 Fax

Southeast Regional Office:
2354 Wimbledon Circle
Franklin, Tennessee 37069
615 599 5368 Telephone
303 444 4304 Fax

www.archenergy.com

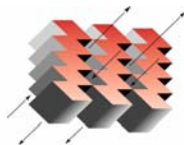
The University of Memphis FedEx Institute of Technology consists of a four story building housing classrooms, presentation rooms, computer laboratories and offices connected to a two-story full media lecture hall. The project included the commissioning of four floors conditioned by an underfloor variable air volume (VAV) air distribution system, two traditional overhead VAV systems, one constant volume system, four computer room air conditioning systems, an 800 ton variable speed centrifugal water-cooled chiller with primary-secondary pumping, four variable flow high efficiency boilers, a campus tie-in to steam and chilled water and a full DDC building automation system.

Project Information: University of Memphis FedEx Institute of Technology

Project Type	University Laboratory and Classroom
Client / Commissioning Services Team	<i>Client:</i> Flintco Construction Services Memphis, Tennessee <i>Commissioning Authority:</i> Architectural Energy Corporation Boulder, Colorado
Size	95,100 ft ²
Location	Memphis, Tennessee
Cost	\$23 million
Year Constructed / Occupied	2003 / 2004

Project Highlights The building incorporates an innovative and complex mechanical system including an underfloor air distribution VAV system on four floors, two traditional overhead VAV systems, and one traditional overhead constant volume system on other floors. In addition, four computer / electronic laboratories had dedicated air conditioning systems, with all cooling being provided by an 800 ton variable speed centrifugal water-cooled chiller with primary - secondary pumping. Heating was provided by four variable flow high efficiency boilers, and the entire building is tied into the campus-wide steam and chilled water system.

Challenges arose to effectively seal the plenum space of the underfloor air distribution system, and design and implement an appropriate and effective control strategy to provide optimal comfort and energy efficient operation. The on-site chiller was significantly oversized for the building's cooling load, anticipating that it would be used for future campus building cooling requirements. This created noise problems as the chiller operated at the low end of the part-load efficiency curve. However, with proper run-in and maintenance the chiller performance has improved.



ARCHITECTURAL ENERGY
CORPORATION
Integrated Engineered Solutions