

## **Innovations beyond the classroom**

*Ferris State University HVACR students complete energy audits.*

Students in an Energy Analysis and Audit class at Ferris State University have completed energy audits since 1986. An energy audit is a creative yet practical approach to energy conservation that can help an organization save thousands of dollars in energy costs.

As a part of the curriculum for HVAC 451, students are required to investigate a building by conducting research that allows them to analyze the design, operation, and performance of the structure's heating, ventilation air conditioning and refrigeration components and systems. The students then meet with the building's maintenance personnel to discuss operating procedures, review known system malfunctions and gather pertinent technical information.

The students, under the direction of Professors Mike Korcal, John (Eric) Quilitzsch, and Douglas Ford Zentz, analyze their findings by; investigating equipment issues and making recommendations for repair or upgrade, researching utility data and customer design proposals. reviewing technical drawings, schematics and computer-generated reports, researching and evaluating the design, installation, operation, and maintenance of equipment, systems, and processes, and finally, conducting research to test and analyze the design, operation and performance of proposed equipment, component and system modifications After their analysis, the students then provide the client with options for energy conservation and system efficiency.

Professor Mike Korcal comments, "This course offers the students three important functions. First, students have the opportunity to utilize their classroom learning. Second, they learn how to work as a team. And third, this is a project they can put on their resume and talk about in job interviews."

Energy Audit projects completed by Ferris State HVACR Students (by year) include:

2009

- Mecosta Osceola Career Center – Big Rapids, MI
- Racquet Facility, Ferris State University – Big Rapids, MI
- First United Methodist Church – Big Rapids, MI

2008

- St. Peters Lutheran Church and School – Big Rapids, MI

2007

- Amway Corp. – Ada, MI

2006

- Van Andel Museum Center – Grand Rapids, MI

2005

- Crossroads Charter Academy Elementary School – Big Rapids, MI

2004

- MasterTag. – Montague, MI

2003

- Cadillac Molding – Cadillac, MI

2002

- Victor F. Spathelf Building, Ferris State University – Big Rapids, MI

2001

- Student Recreation Center, Ferris State University – Big Rapids, MI

2000

- Middle School, Reed City Public Schools - Reed City, MI
- Norman Elementary, Reed City Public Schools - Reed City, MI

1999

- MDOT Bureau of Aeronautics – Lansing, MI
- Technology Transfer Center – Big Rapids, MI
- The Office of Dr. William A. Beattie – Mecosta, MI

1998

- Oliver Machinery – Grand Rapids, MI
- TruHeat Corporation – Allegan, MI

1997

- Victor F. Spathelf Building, Ferris State University – Big Rapids, MI
- New Era Canning Company – New Era, MI
- Weyerhaeuser Structurwood Facility – Grayling, MI
- Blodgett Kentwood Medical Facility – Kentwood, MI

1996

- Variable Concepts Inc. – Grand Rapids , MI
- Pharmacy Building, Ferris State University – Big Rapids , MI
- Assumption of the Blessed Mary Catholic School – Belmont , MI

1995

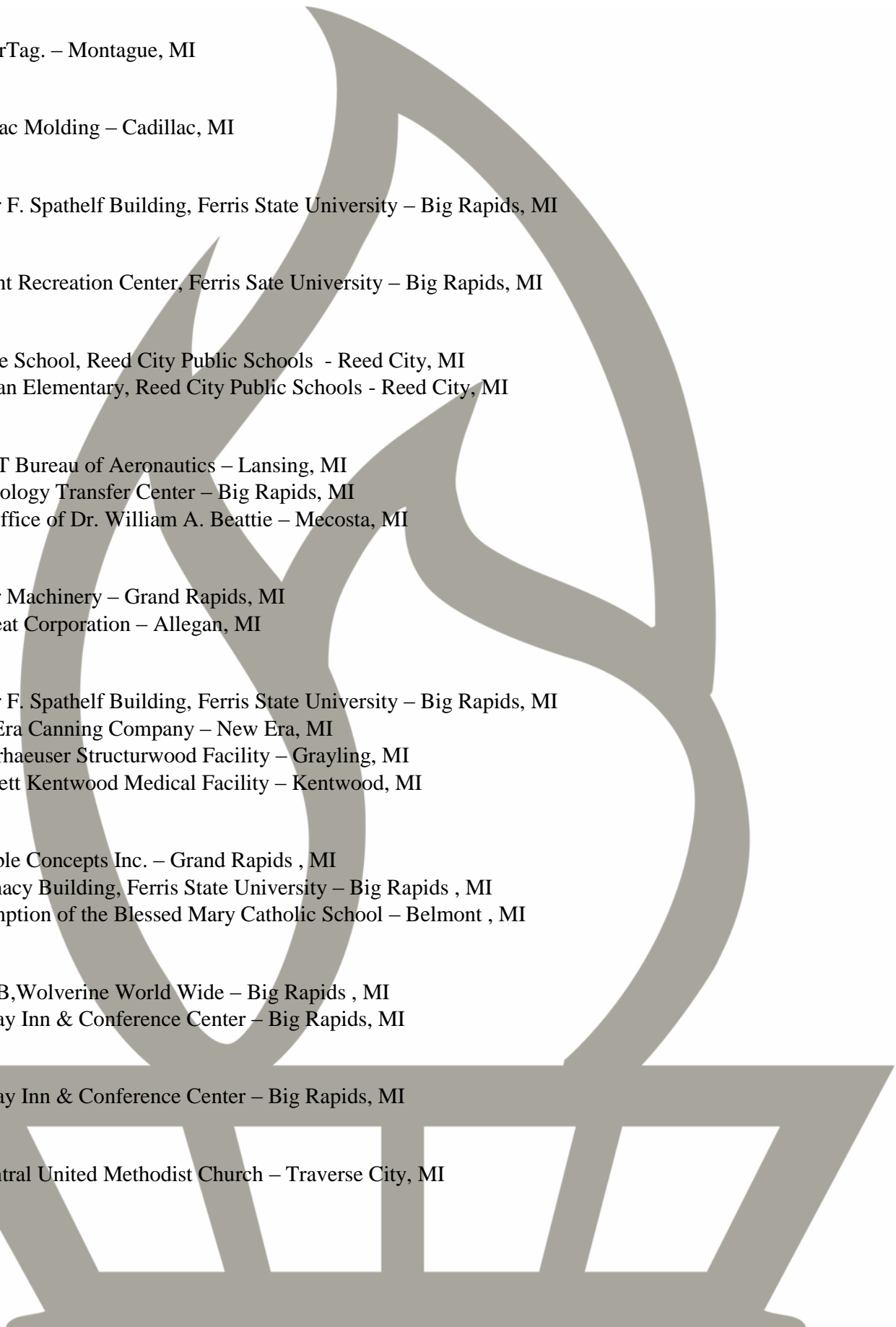
- Plant B, Wolverine World Wide – Big Rapids , MI
- Holiday Inn & Conference Center – Big Rapids, MI

1994

- Holiday Inn & Conference Center – Big Rapids, MI

1993

- Central United Methodist Church – Traverse City, MI



- Fitzsimons Manufacturing Company – Big Rapids, MI
- Racquet Facility, Ferris State University – Big Rapids, MI
- Traverse City All Faith Chapel – Traverse City , MI

*1992*

- International Furniture Technology – Big Rapids, MI
- St. Paul’s Campus Parish – Big Rapids, MI
- AAR Brooks & Perkins – Cadillac, MI

*1991*

- Meijer Store – Mt. Pleasant, MI
- Middle School, Big Rapids Public Schools - Big Rapids, MI
- Community Library – Big Rapids, MI

*1990*

- Ice Arena, Ferris State University – Big Rapids, MI
- Construction Technology Building, Ferris State University – Big Rapids, MI
- New Hope United Methodist Church – Mecosta, MI

*1987*

- Hillcrest Elementary School, Big Rapids Public Schools – Big Rapids, MI

*1986*

- Mecosta County Building – Big Rapids , MI

