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## CASE STUDY

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# McQuay Donates New Enfinity™ Horizontal Water Source Heat Pumps To Ferris State University for HVACR National Education Center

Students and staff of Ferris State University's Heating, Ventilation, Air-Conditioning and Refrigeration (HVACR) Engineering Technology program will soon benefit from all the modern amenities a new 75,000-square foot technology building has to offer, including an exposed HVAC system that is accessible for study and analysis. Scheduled for completion in December 2003, the \$18 million HVACR National Education Center will be a showcase for HVAC technology and instruction. McQuay International is assisting with this educational effort by donating 14 new Enfinity™ horizontal water source heat pumps for a ground loop geothermal heating and cooling system.



“Geothermal systems are integral to energy-efficient cooling and heating, and they are an important part of our curriculum,” said Mike

Feutz, department chair. “In fact, our students have won first place in the ASHRAE Student Design Project Competition using geothermal system design and technology for the past three years. So we are especially excited to receive McQuay’s donation; the water source heat pumps will be a valued addition to our program for on-site observation.”

The Enfinity water source heat pumps will be installed in the faculty and administration corridor of the new building. One of the ceiling-mounted heat pumps will be visible through plexiglass, and all of them will have extra gauges and monitoring devices so students





can study their operation. “The units will be especially efficient for cooling individual offices during the summer when the rest of the building is not in use,” said Feutz.

New McQuay Enfinity™ horizontal water source heat pumps give engineers—and students—the flexibility to design efficient, cost-effective geothermal or boiler/tower heating and cooling systems for schools, offices, healthcare facilities and other buildings. Standard range (55° F to 110° F) and extended-range/geothermal (25° F to 110° F) models in 1/2 to five-ton capacities are available in four small-footprint

cabinet sizes to meet space requirements in new or replacement applications. Energy-efficiency ratios (EER) up to 17.5 deliver economical operation. Units sized from 19,000 to 60,000 Btuh use environmentally safe, non ozone-depleting HFC R-410A refrigerant, which has also been given an A1 safety classification from ASHRAE.

The heat pumps are part of a larger HVAC system that includes VAV with reheat and thermal ice storage for supplemental cooling. Heat pumps, unit ventilators and in-floor radiant heat provide heating and cooling in smaller, zoned areas.

The mechanical room is visible through interior and exterior glass walls, while equipment in other areas will be left exposed. The building’s plumbing, electrical and structural components will also be visible in some locations. Other instructional features of the new building include seven advanced instructional labs dedicated to heating, basic air conditioning and refrigeration, direct digital controls, and other HVAC systems.

Albert Kahn Associates Inc., Detroit designed the building and the HVAC system. Thermal-Netics Inc., Berkley, MI provided design assistance for the McQuay Enfinity water source heat pumps. AirTech Equipment Inc., Wyoming, MI, donated the pumps on behalf of McQuay.

Founded in 1945, the HVACR Engineering Technology program grants four-year bachelor of science degrees and two-year associate in applied science degrees. Students study and apply load calculation, energy audit and analysis, design, installation, and servicing of residential, commercial and industrial equipment, systems and buildings in preparation for careers in HVAC engineering technology.