



case study

products

CITY MULTI

market

Office Building

location

Ann Arbor, Mich.



A Cool and Quiet Studio

Project Name:
WUOM Michigan Radio

Location:
Ann Arbor, Mich.

Completion Date:
August 2003

The Team

Owner
**O'Neal Construction, Inc.,
Ann Arbor, Mich.**

Lessee
**WUOM FM Radio, University
of Michigan, Ann Arbor,
Mich.**

Studio Architect
**Russ Berger Design Group,
Addison, Texas**

HVAC Engineer
**CFI Engineering, Inc.,
Troy, Mich.**

HVAC Contractor
**John E. Green Company,
Lansing, Mich.**

Michigan Radio has had its home at the University of Michigan, Ann Arbor since 1948. With today's call letters of 91.7 FM, Ann Arbor/Detroit, 104.1 FM, West Michigan, and 91.1 FM, Flint, Michigan Radio provides news and information, NPR and weekend entertainment programming for southern lower Michigan, northern Ohio and Indiana. Faced with the need to relocate in 2001, network managers began a search for a new home, which they found one-half mile off campus in the Argus Building, an historic structure in Ann Arbor and once former headquarters of the Argus Camera Company.

Project Description

To provide for the 10,000 square feet of Michigan Radio offices and studios, station managers turned to Russ Berger Design Group (RBDG), a firm that specializes in acoustical and architectural design for recording studios and broadcast facilities. Within the walls of the Argus Building, RBDG needed to design 5,800 square feet of sound-sensitive studios and control rooms. For the highly complex cooling and heating system needed for near silent operation, the design team contacted CFI Engineering, Inc., Troy, Mich.

Critical Design Challenge for Box-within-a-box

CFI Partner Edward Fischer, Jr., P.E. was the chief design engineer. "The construction documents for this sophisticated box-within-a-box were as

intense as they were detailed," he said. The acoustical, electrical, heating and cooling demands called for advanced engineering. The nine studios and control rooms needed to be cooled 365/24/7, while the pocket of air in the envelope between the studio and warehouse walls needed to be kept warm during Michigan's renowned, long winters. Fischer was not satisfied with any of the HVAC proposals received until a distributor friend of 30 years introduced him to the manufacturer's rep for Mitsubishi Electric HVAC's CITY MULTI® system.

A Timely, Innovative Solution for Michigan Radio

"As soon as I heard the presentation, I knew I had found the perfect answer and started immediately on the application design," Fischer said. What he saw, and key to the success of the intricate engineering, was CITY MULTI's extraordinary INVERTER technology and variable refrigerant flow zoning system (VRFZ). The first of its kind in the U.S., CITY MULTI engineering allowed Fischer to provide simultaneous cooling to the studio and heating to the walls outside the studio (inside the walls of the warehouse). For the sophisticated studio, Fischer designed all the ductwork, diffusers, coil units and wiring. A quick trip to Mitsubishi Electric HVAC's Atlanta Training Center helped Fischer—with the aid of CITY MULTI engineers—redesign the computer program governing the fan coils. Because of the infamous Michigan

WUOM Michigan Radio needed a cooling and heating solution that could keep its studios and equipment rooms cool and comfortable while keeping the surrounding warehouse walls warm during Michigan winters. CITY MULTI® proved to be an ideal solution because of its ability to simultaneously cool and heat different zones.



winters, his design called for one of the CITY MULTI coils to operate only on its heat pump mode for air circulation outside the studio.

Unique to CITY MULTI, HVAC Industry

Michigan codes required outside air to be pre-heated and pre-cooled. “Here, I discovered another great CITY MULTI innovation,” Fischer said. All CITY MULTI systems’ heat exchanger units are fitted with a special connector unit to bring in outside air. “This is totally unique to CITY MULTI as far as I know, and I find this really neat! With 1,200 CFM of power, I was able to pump in, and simultaneously exhaust, air from the outside.” Fischer also noted CITY MULTI’s distinctive ability to allow personalized, zoned comfort system controls for each of the studio rooms: the Mitsubishi Electric INVERTER technology varies the speed of the compressor to deliver the exact amount

Related CITY MULTI Equipment:

- PURY-100TMU-A R2-Series Outdoor Unit
- DDFY-P12NMU-E Ceiling-concealed Air Handler
- PDFY-P18NMU-E Ceiling-concealed Air Handler
- PDFY-P24NMU-E Ceiling-concealed Air Handler
- PDFY-P30NMU-E Ceiling-concealed Air Handler
- PDFY-P36NMU-E Ceiling-concealed Air Handler
- PDFY-P48NMU-E Ceiling-concealed Air Handler

of cooling or heating demanded by each zone, thus creating considerable energy savings.

The Sound of Silence

One year later WUOM is pleased with the system. WUOM’s Chief Engineer Robert Skon said, “CITY MULTI was a great choice for our technical spaces. The system is well suited for our nine rooms and multiple users needing various degrees of comfort throughout the day. And, the sound of silence is wonderful!”