

## CASE STUDY

# McQuay Rooftop Units Teach Two Schools A Valuable Lesson In Humidity Control

*This patented fully modulating gas burner is the most advanced in the industry—offering continuous modulation for precise control from start to finish.*

Since the early 1970s, when their original HVAC equipment was installed, Hollenbeck Elementary and Barnwell Middle School in St. Charles, Missouri, experienced humidity problems. Because of the nature of their cooling systems and the amount of outside air they were required to bring in, the air in the schools was always too humid in the warmer months.

In addition to affecting comfort, the humidity got so bad that it was causing significant mold and mildew growth—which in turn created the potential for health related indoor air quality problems. For years, the Francis Howell School District battled the symptoms of poor humidity control including repainting the ceiling tiles in both schools every three to four years.

Finally, the district realized that the only way they could solve the humidity problems was to replace



*Barnwell Middle School, St. Charles, MO*



*McQuay RPS Rooftop Unit.*

the existing HVAC equipment. Working with K-2 Consultants, the district searched for a way to provide the higher required ventilation rates that the school needed without the resulting humidity.

K-2 Consultants contacted Thermal Mechanics, the McQuay Representatives in St. Louis, about

the existing HVAC equipment. Working with K-2 Consultants, the district searched for a

the McQuay Applied Rooftop system. They found McQuay rooftop units could be easily configured to remove the excess humidity from the outside air as it is brought into the building. The exact amount of reheat could be precisely controlled by McQuay's new SuperMod™ Burner because of its unique ability to modulate its heating capacity anywhere between 100% to 5%.

This patented fully modulating gas burner is the most advanced in the industry—offering continuous



*McQuay RPS Rooftop Unit atop  
Hollenbeck Middle School*



modulation for precise control from start to finish. Even under low heating loads, McQuay's SuperMod burner can provide the right amount of heat to maintain the proper discharge air temperature.

K-2 Consultants were so impressed with the capabilities of the burners and the flexibility of the McQuay Rooftop units, that for the basis of the design of the project, K-2 specified a combination of McQuay rooftop units with either constant or variable air volume, and fully modulating gas burners.

The McQuay units even included a customized section so K-2 could install a special heat wheel energy recovery unit, further cutting the district's energy costs.

One by one the other manufacturers failed to be competitively priced on the rigorous design requirements. When it came time to purchase equipment for the project, no one could match McQuay's highly flexible roof mounted units with their customizable features.

The district made the decision to go with McQuay in April of 1997, and

they wanted the units installed in August. When the units arrived in St. Charles, the contractors had 10 days to get them up and running. Due to the fact that they were fully factory assembled and tested, the units were installed with no problems.

The school district is very happy with the McQuay equipment, and is looking forward to many years of cost-effective humidity control.