

Munters puts school back on track

Mold in schools is getting a lot of attention at local, state and federal levels — and it's getting expensive. For example, in 2002, an Austin, Texas, school district passed a \$49.3 million bond issue to pay for mold removal and preventive maintenance in 91 schools. That same year, the Texas Department of Health said at least 10 school districts had reported mold problems in the last year. In addition to climate, changes in how schools are built are a contributing factor. Gypsum wallboard, now widely used in place of plaster, allows a fertile environment in which mold can grow. While older school buildings did not have carpeting, it is common today, and that too can be a breeding ground for mold. Flat roofs, which make it harder to detect leaks, also contribute, says Quade Stahl, chief of the indoor air quality branch of the Texas Department of Health. And there are no state or federal air quality standards for mold. Indeed, the problems are widespread and expensive. A solution that economically controls humidity to prevent mold growth is ideal. In the Rio Grande Valley, mold discovery has sent thousands of students to temporary classrooms, cost school districts millions and generated lawsuits, the Houston Chronicle reported in 2002.

School Problem

Wide variations in temperatures and humidity levels in South Texas make it difficult to maintain internal atmospheric conditions to minimize the formation of mold or mildew. Pharr-San Juan-Alamo School District's Memorial High School, a \$23 million project, had been open less than three years when toxic mold issues reached crisis stage.

Mold grew on ceilings, walls, equipment and books. Students and staff complained of allergic reactions, respiratory infections and, in some cases, neurological responses to the poor air quality. On two separate occasions, students staged a walkout to protest the conditions.



Pharr-San Juan-Alamo Memorial High School's mold problem was resolved with Munters' desiccant dehumidification equipment.

Case Study: PSJA Memorial High School



BENEFITS

- Mold-Free
- Healthy, Clean Dry Air
- Reduced Liability/Risk
- Reduced Operating Costs
- Independent Humidity and Temperature Control

As with many schools, the indoor air quality at the three-year-old school was poor due to high ventilation and people loads in classrooms, high intermittent ventilation loads and carryover from showers in gyms and locker rooms and long periods where the building was unoccupied. Unconditioned and uncontrolled hot, humid outside air from ventilation and infiltration had brought in so much moisture, the building had reached a saturation point. Small roof and window leaks also contributed to the problem, and mold proliferated. Desks and floors were wet; humidity inside the building was as high as 90 percent.

“We had a lot of complaints from teachers and from staff and from students – some staff and students were becoming ill,” says Arturo Guajardo, superintendent of PSJA School District.

Two air quality studies recommended replacing ceiling tiles and cleaning up the mold, but did not address the source.

The school district filed a lawsuit with the contractors, which was reported by the Houston Chronicle for settling for more than \$20 million. Students and school personnel filed more than 1,600 health claims.



The above Munters system was used to dehumidify PSJA Memorial High School.

Solution

The district contracted Assured Indoor Air Quality Inc. from Dallas, Texas, (AIAQ) to identify the problem, cut off the source of moisture and clean up the mold.

Large volumes of fresh outside air are drawn into the building to meet heat and ventilation codes; unfortunately this outside air is also the main source of humidity. AIAQ brought in Munters equipment to begin supplying dry air to the building via temporary desiccant dryers. While the mold was removed and materials replaced, the company designed a permanent system using Munters desiccant dehumidifiers.

The permanent drying equipment conditions outside air efficiently and

pressurizes the building to keep humid air from being drawn inside.

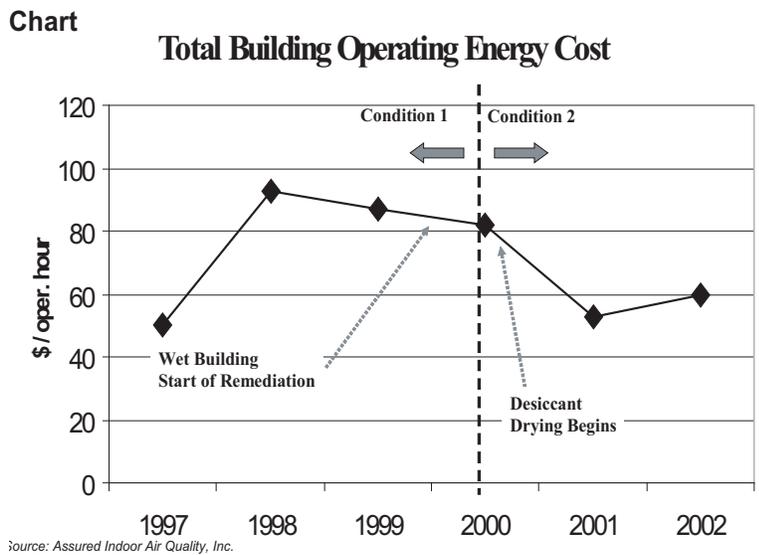
Prior to incorporating Munters Desiccant Dehumidification, these schools used conventional refrigeration based ventilating systems which were operated to meet set point 12 hours a day, five days/week. During nights and weekends the humidity rose and the building absorbed moisture. When the equipment turned back on, the energy required to dry the building was significant (See Condition 1 in Chart). By incorporating Munters dehumidifiers and controlling humidity at all times, the building remained dry and significantly reduced the total building energy cost (See Condition 2 in Chart).

Results

Over a three-month period, the desiccant dehumidification system dried the building. Today, the school is kept at 45 percent relative humidity and 75°F, and the building is mold free.

Teachers no longer have to show up early to clean books and other classroom materials, and attendance has increased because kids are healthier.

“Two previous studies offered solutions that didn’t address the source of the problem,” says Bill Holder, senior vice president of AIAQ. “The most effective way to control a high-humidity environment is to employ desiccant dehumidifiers. Today Memorial High School’s hourly operating costs have decreased 50 percent.”



Source: Assured Indoor Air Quality, Inc.

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