When American Constructors, Inc. utilized a dehumidification system for the first time when building a school, the company coincidentally realized unexpected benefits to the construction process beyond the intended goal. Initially, the construction firm sought only to control moisture content inside the building to ensure against any possibility of formation of mold or mildew during construction.

The project team discovered, however, that removing moisture aided drying times of concrete, wallboard compound and substrate surfaces. That allowed them to accelerate the schedule for painting, installation of ceramic tile and applying epoxy flooring material.

American Constructors is a respected, 30-year-old commercial construction management company headquartered in Austin, Texas. Among many other types of struc-

Dehumidification Ensures Against Mold and Mildew

Dehumidifiers Used in Texas School Building Construction Also Have Added Benefits
It is difficult to maintain consistent temperature and humidity levels through the use of an HVAC system.

A procedure usually employed by contractors is to warm the building by operating the HVAC system, which helps to reduce moisture and aids in drying interior surfaces. However, it is not as effective as dehumidification.

Trying to maintain consistent temperature and humidity levels through use of the HVAC system during construction can prove difficult. “In the Austin area, running the heating unit is...
tricky because there are many days when temperatures are not cold and adding heat to the building also makes it uncomfortable,” Taylor said. “When the heat isn’t running, the humidity levels begin to climb.”

Coupled with that, the engineers on the project specified that the contractor not use the HVAC system until after the building was turned over to the owner.

**A New Twist**

American Constructors had never before used dehumidification as an alternative. The company consulted with the Moisture Control Services division of Munters Corporation. MCS is a water damage recovery/temporary humidity control company that also provides emergency services throughout the United States and Canada.

MCS’s parent company, Munters, is an air treatment company manufacturing products that humidify, dehumidify, control emissions and dry water-damaged environments.

Taylor explained the needs to Tim Young, the San Antonio district manager for MCS’s Gulf Coast region. After reviewing the building specs, Young recommended a mixture of desiccant dehumidifiers and indirect fired heaters.

The system was powered by a propane-fueled generator to operate the heaters and the blower fans on the dehumidifiers, eliminating the need for electrical connection.

The units were installed in November 2001, as soon as the building was fully enclosed and protected from external elements. A flexible air distribution system was installed into various sections of the building, including the crawl space under the floor.

Young explained that the system functioned differently than
that of a usual dehumidification application. “In a typical sys-
tem, air inside a building flows through a dehumidifier, which
removes the moisture and re-circulates the air back into the
building,” Young said. “In this case, we used outside air, dried
it through the dehumidifiers, ran it through the heaters and
moved it through the air distribution system.”

Reaping the Rewards

Taylor said the system has met his expectations to maintain tar-
geted temperature and humidity levels. “With an outside air
temperature of 30 degrees Fahrenheit, the climate controlled
space inside is at 50 degrees Fahrenheit,” he said.

“The humidity may climb during certain operations, but then
be quickly reduced. For example, after completing wallboard
texturing, the humidity climbed to 70 percent because of the
moist conditions of the wall compound, but by the following
morning it was at 50 percent and on its way down to a main-
tenance level of about 30 percent,” Taylor said.

Taylor said the pilot project has been encouraging and has
helped American Constructors gain the trust of the building’s
owners to utilize the procedure in future school construction
projects.

“The use of [the dehumidification] equipment helped us speed
the construction progress and prevent any mold problems,” said
Rick Conrad, project manager for the Round Rock Independent
School District. “I can rest easier knowing that mold would not
develop before we installed the building’s HVAC system.”