

Restore Comfort, Save Energy with HCU

People who live in or have visited locations of the country with high humidity know that the combination of excessive air moisture and warm temperatures can be extremely uncomfortable. Air conditioning is an easy solution to combat high humidity, particularly for homeowners. But not if you're running a business that involves different temperature zones and people's differing needs. For a business establishment, such as a restaurant, discomfort from temperatures that are too warm, or uncomfortably cold can be disastrous, annoying employees and driving away customers, which results in lost revenue.

THE PROBLEMS

Such was the prospect of a fast-food restaurant chain in St. Louis, a city well-known for high levels of humidity. It was here that Lion's Choice was founded in 1967, and where they serve thin-sliced hot roasted beef sandwiches with "secret seasoning" on a buttered and toasted bun. They have 20 locations in Missouri and Illinois.

The chain's stores utilize two rooftop air conditioning (A/C) units for climate comfort. But providing uniform indoor temperature and humidity levels proved difficult in some locations with high humidity climate. The units would automatically turn off when the temperature set-point was reached. At that point, there was no control of humidity until it again became warm enough for the units to restart.

The store managers only had the option of raising or lowering the thermostat. When they decrease the temperature to 68°F to keep employees comfortable and productive in the food production area, the colder air in the seating area chilled the patrons. Conversely, if they set comfort levels for customers, the kitchen heat "withered" the employees.

Aside from creating inconsistent levels of human comfort, the constant cycling exacerbated condensation on the coils of the A/C units, as well as on glass surfaces in the restaurant. Also, because the units had to work longer to re-establish set-point temperatures with each cycle, the cost of electricity was greater than it could have been using a more efficient system.



At the Lion's Choice restaurant, the HCU 2000 has independent humidity and temperature control, allowing comfort for both patrons and employees. The HCU 2000 is shown on Lion's Choice rooftop.

Commercial Dehumidification Restaurant Case Study:



Facts:

- Cost Effective Investment
- Increased Customer and Employee Comfort
- Independent Humidity and Temperature Control



The Humidity Expert

The Solution

Brian Jones, sales engineer with Waites Company, an air engineering firm in St. Louis, worked with management of Lion's Choice to resolve the problem.

Jones knew from experience that air conditioning alone was not adequate to alleviate the high moisture condition to the point that consistent temperatures could be maintained in the Lion's Choice restaurants. The situation called for a supplemental system that would adequately dry the air.

"These A/C units processed return air from the building and also brought in fresh outside air. Both were humid and, as condensation began to form on the coils, the units would become less and less efficient," Jones said. "Sometimes HVAC engineers design systems only by considering outside air temperatures and not humidity levels."

Jones recommended installation of the new Munters Humidity Control Unit (HCU 2000) to control humidity on an as needed basis, running only when humidity levels threaten comfort.

Installation of the unit was quick and easy. After the unit was hoisted onto the roof, it was wired and ducts were attached between it and the two air conditioners.

The HCU 2000 provides a "packaged" system that applies two technologies - refrigeration and desiccant dehumidification. Unlike cooling-based dehumidifiers, which cool the air to condense moisture and then drain it away, desiccants attract moisture molecules directly from the air and release them into an exhaust air stream.

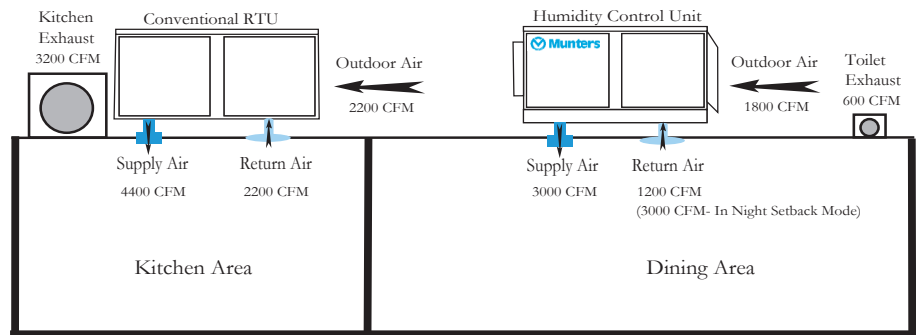
The Munters unit draws outside air, cools and dries it and feeds it into the air conditioners. The dried air then is circulated through the structure by the A/C units.

Munters Corporation
Commercial Dehumidification Division
16900 Jordan Road Selma, TX 78154
Tel (210) 651-5018 or (800) 229-8557
Fax (210) 651-9085
www.munters.us

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Typical Restaurant Humidity Control Layout



The above diagram is a typical restaurant design utilizing the Munters HCU.

Benefits

Independent Humidity & Temperature Control

The humidity control system provides the restaurants with the ability to create the desired climate by providing independent control of temperature and humidity.

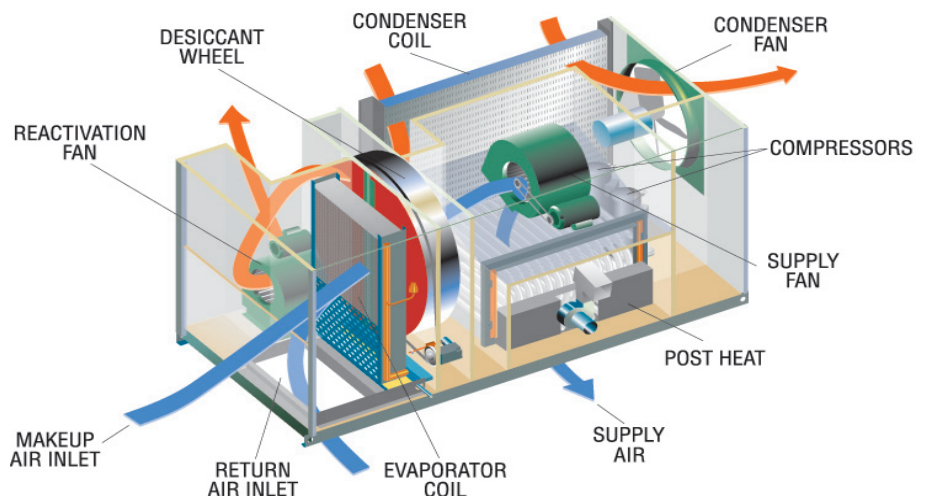
By utilizing the air conditioning and dehumidification systems in tandem, the restaurant's managers have been able to stabilize comfort for customers and employees at a thermostat set point of 74°F with a relative humidity level of 48 percent. That is far above the 68°F setting required before dehumidification was employed.

Cost Effective

"The HCU 2000 controls humidity on an as-needed basis, running only when humidity levels threaten comfort. And, the system operates cost effectively because all of the energy required for the operation of its desiccant dehumidifier is recycled from its cooling components," Brian Jones said.

"We tried other options to control the climate in our restaurants to no avail," said Jim Tobias, president of Lion's Choice. "Munters came in and solved our problem. The installation of the units went smoothly and they provided us with the desired climate immediately."

Humidity Control Unit



The Humidity Expert