CASE STUDY

Munters

Munters´ drying room saves energy in many ways

Phistergården day care drying room, Denmark

The drying room is easy to use, and the children's clothes are now dried thoroughly, and energy efficiently. Ready for the next time in the playground or nearby forest.

Located in Gentofte, Denmark, the Phistergården day care is an independent institution with forty children from three to six years old. It´s housed in a beautiful old villa and has served as a day care since 1992.

Drying facilities upgrade

As part of a general energy optimization in 2010/2011 the old gas heating system was replaced with district heating, and Head of the institution Jens Peter Rolf Jacobsen thought it would be a good time to also update the drying facilities.

Drying room chaos

Drying of children's outerwear was previously carried out in an 20m² large basement room where two drying cabinets were installed. Drying capacity was far from satisfactory. The two drying cabinets did not provide sufficient drying capacity for forty sets of overalls and footwear. The energy consumption for the drying cabinets was very high.

It was nearly chaos when the cabinets had to be filled. The staff had to use resources to pick out clothes that could not withstand the high temperature in the drying cabinets (for example outerwear with membranes and GoreTex).

They were often not even able to dry the clothes from one day to the other, and the complete drying process was very time consuming, wasting time and human resources that could be used for other, better activities.

Case study

- Air treatment drying room upgrade at Phistergården day care

Advantages:

By installing Munters dehumidification Phistergården got:

- Efficient drying of clothes and footwear
- Easy handling of clothes to dry and an energy efficient solution
- Gentle drying method compared to high temperature drying found in drying cabinets

Drying room replaces drying cabinets

In cooperation with the Municipality of Gentofte, Force Technology consultants were implementing energy optimization for several day cares, and they suggested that the day care replace their current drying room with a Munters´ drying room. The room in the basement was the perfect place. In the autumn of 2012, while the wet autumn season began, a Munters´ MH270 desiccant dehumidifier and two Munters´ circulation fans were installed.

After a wet day outside, the children are now brought indoors in smaller groups and they all place their wet clothes on a hanger, which is then placed on a clothesline under the ceiling by the staff. Fixed racks will soon replace the lines, making it possible for most of the children to hang their own clothes.

Easier to use

When all the clothes are hung, the two circulation fans located in the ceiling are turned on. The fans maximize air movement, so water is released from the clothes to the air as fast as possible. Then, the dehumidifier automatically switches on (humidistat-controlled) and this effectively removes the water from the air.

The absorbed moisture is fed from the dehumidifier to the outside as warm, moist air. The fans are in operation at certain times of the day (controlled by a timer-box), and the dehumidifier stops automatically as soon as the clothes are dry.

As all outerwear is now thoroughly dry and not just warm, it is a pleasure to dress again, getting ready for another excursion to the playground or forest.

Dehumidifier and fan power consumption totals around 2 kW, which is almost the same amount of energy used for a single drying cabinet. The dehumidifier operation time, as opposed to a drying cabinet, is 100% demand-driven, driving hefty savings for the day care. An example of energy savings includes Laerke School in Egedal, Denmark, where a Munters´ drying room replaced eight drying cabinets and energy consumption was reduced by 85%.

Munters mimics nature

The Munters´ dry room concept mimics the conditions of a dry and breezy summer day, when your laundry quickly dries outside. Circulating fans mounted in the ceiling blow lots of air onto the clothes. This releases water from the clothes, enabling the dehumidifier to eff iciently remove the water and dry the clothes quickly.

A Munters´ drying room requires no heating of any kind since the desiccant dehumidification systems work efficiently even at low temperatures. A Munters´ drying room around 10m^2 (dehumidifier + fans) consumes only 1-2 kW. This can replace eight drying cabinets with a total connected load of between 5-12 kW.

The Danish Defense Construction Service (FBE) has conducted experiments proving Munters´ drying rooms have an efficiency of about 1 kWh per liter of water removed, where the traditional drying method with heating and ventilation uses 3-4 kWh per liter of water removed.

For many years military staff has enjoyed the benefits of Munters´ drying rooms. The solution is also used with great satisfaction by military special forces and divers, and helps efficiently dry rescue helicopter equipment.

Today, many private companies benefit from the concept in employee changing rooms, just like many day care centers, like here in Phistergården, replacing energy-intensive drying cabinet solutions with the Munters´ drying room concept.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com

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