

Latrobe Area Hospital Uses Blenders To Prevent Coils Freezing

PROJECT:
Latrobe Area
Hospital

ENGINEER:
Art Ross,
Latrobe Area
Hospital

**PRODUCT
SELECTIONS:**
Blender Products,
Blender Box

Project Description:

The heating/cooling and ventilation air handling unit at Latrobe Area Hospital was shutting down due to a low temperature safety device. Since, in the winter months, the outdoor air required for ventilation was cold and would not mix with the return air, the result was stratification in the mixed air plenum causing the freezestat to shut the unit down to protect the water coils from freezing. This problem had existed from the time the unit was installed in 1988.

UNIT CONFIGURATION:

The outdoor air came into the back of the unit and the return air came in from the top. The unit was configured with three freezestats; one at the top, one in the middle and one at the bottom. It was always the bottom freezestat that tripped. Mr. Ross had investigated the problem and made several temperature measurements inside the air handler. He discovered that there was a large temperature difference between the air at the top of the unit and the air at the bottom.

THE TEMPORARY SOLUTION:

In the winter months, cooling for this area of the hospital was provided by an economizer mode. However, because of the freezestat trips, the outdoor air dampers had to be indexed to a minimum position and the chillers had to be run to provide sufficient cooling. The cost savings associated with using economizer mode instead of operating the chiller was lost.



Blender Products® Series IV Air Blenders



Latrobe Area Hospital

THE PERMANENT SOLUTION: THE BLENDER BOX

Jim Reed and Curt Marsh of Pittsburgh Air Systems met with Mr. Ross to discuss the problem and potential solutions. With the very tight space constraints, the only practical solution was the installation of a Blender Box. Pittsburgh Air Systems worked with factory engineers at Blender Products to design a custom Blender Box to solve temperature stratification issues. The custom design included provisions for the Blender Box to be shipped in sections to allow the unit to fit through existing doorways. Additionally, the Blender Box was designed to fit the existing York CS unit exactly.



Blender Products®
Blender Box

RESULTS:

After installation of the Blender Box, the return air and the outdoor air mixed thoroughly. The homogeneous air mixture no longer trip out the unit on low temperature and the chillers no longer need to be operated in the winter months. This provided Latrobe Area Hospital with a 1-2 year payback on the Blender Box installation.