HEAT PIPE TECHNOLOGY

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CaseStudy

Public & Private Schools

CENTRAL INDIANA PUBLIC SCHOOL REPLACES HEAT WHEELS WITH ENERGY RECOVERY HEAT PIPES

THE OPPORTUNITY

When a public school in central Indiana looked to replace its inoperable heat wheels, it decided to look at alternate energy recovery technologies. HPT's local representative, Clay Davis of Validated Custom Solutions, worked closely with the school and its maintenance technicians to offer a reliable, cost-effective replacement. Besides future maintenance requirements, the ability to easily retrofit the AHUs was also important. The new energy recovery solution would have to be compact and customized in order to allow for trouble free installation.

THE SOLUTION

HPT's side-by-side energy recovery module (HRM) is a passive device that utilizes a phase change in its working fluid to pretreat outside air before entering the cooling coil or heating coil. Because of the HRM's passive nature, which means little-to-no maintenance, the heat pipes were an easy choice. Additionally, the HRM would provide the pretreated outside air required by local building code.

The project comprises two AHUs, each with an average outside airflow of 11,050 CFM. Each AHU contains two HRMs – one positioned upstream of the cooling coil, and the second positioned downstream. The upstream heat pipe preheats outside air during winter and precools the air stream during summer. The downstream heat pipe provides reheat during spring, summer, and fall operation.

THE RESULTS

Conditions

- Two AHUs: 22,100 CFM Total Air
- 480 FPM Air Velocity
- Energy Rates:
  - Natural Gas $0.6 per therm
  - Electric Rate $0.08/kwh
- M – Sat: 6am to 6pm; 12 Months

Savings Summary

- Precool & preheat: 940 MMBTU
- Re-heat: 310 MMBTU
- TOTAL NET SAVINGS: $10,000 per year per system

In addition to the savings, the heat pipes meet the school's requirement for a product that needs little-to-no maintenance after a long period with inoperable heat wheels.

For more information, visit www.heatpipe.com