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## Choosing The Right HVAC System: Energy Efficiency Is A Major Factor

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Do you personally drive one of the three cheapest cars in America? Does your customer drive one of the cheapest cars? Although people are looking for a good value when they make their car purchase, they normally consider many factors in addition to price. Successful pre-engineered contractors fully understand

more than simply calculating BTU's and CFM's. It involves getting the right information about how the building owner will actually be using the building. The advancement of well insulated, pre-engineered metal buildings has greatly reduced the amount of heating equipment required. Today, the most critical component of HVAC design for most industrial applications is to accurately assess the need for exhaust ventilation and makeup air.

To fully maintain the energy efficient benefits that are built into the pre-engineered building structure, it is important to minimize the amount of heated makeup air that is brought into the building. It is especially important that unnecessary makeup air is not brought into the building when the building is unoccupied and the production processes are not operating. It is equally important to maximize the recovery of "waste" heat that is generated by lights, motors and industrial processes while production is in operation. In many cases, the fresh air required for ventilation processes can be effectively heated for "free" by recovering the heat normally wasted at the ceiling of a building. Building comfort, air quality and energy efficiency all can be improved by sensibly recovering this generated heat.

A floor mounted Thermo-Rotation system can be an ideal solution to energy efficient heating and ventilation requirements in many pre-engineered warehouses and industrial buildings. A properly designed Thermo-Rotation system can maintain a temperature variance of just 2-3 degrees throughout an entire facility. The system greatly reduces stratification within the building and effectively recovers the "waste" heat generated by lights, motors and processes—heat that is left unrecovered by wall-mounted and ceiling-hung heating equipment. With the continuing escalation of fuel prices, the energy

cost savings can be dramatic.

For example, in January 2004, a facility in Wisconsin replaced 17 suspended unit heaters with a Thermo-Rotation system consisting of five Thermo-Cycler units. While the suspended unit heaters were only able to maintain a temperature of approximately 45 degrees at floor level, the Thermo-Rotation system maintained a comfortable 65 degrees. In addition to greatly improved comfort for employees, the building area was increased by 11% and the natural gas fuel consumption was reduced by 22%. Equipment maintenance also has been reduced and product quality improvements have resulted from the uniform temperature distribution.

Choosing the right HVAC system starts with a very simple step—just ask the right questions. On your next project, ask your heating contractor to give you some options for the HVAC system other than just the cheapest equipment. Ask your contractor for an option which involves an energy efficient HVAC system. Ask for projected operating costs. Ask for a written, money-back satisfaction guarantee. Your customers, who are responsible for the ongoing operating costs of the HVAC equipment you choose, will be most appreciative that you are looking out for their best interests—and you just may be asked to do more projects in the future.



and appreciate the differences in pre-engineered building components, but generally are much less familiar with subtle differences in HVAC equipment. That lack of understanding may cause some general contractors to go shopping for only low price when it comes time to choose an HVAC system for a project.

Unfortunately for the building owner who may have thought the best building was purchased from the best contractor, deficiencies in the HVAC equipment purchased may cause a building environment that is uncomfortable and very costly to operate. Over the life of the building, the few thousand dollars in initial savings may result in hundreds of thousands of dollars in extra operating costs, maintenance costs, or lost productivity to the building owner.

Choosing the right HVAC system involves