

Think Patented

MIAMISBURG, OH.

► When **Think Patented** – an award winning graphic communications company located in Miamisburg, Ohio – needed to expand the production capacity of the midwest's largest privately-owned printing companies, they decided it was time to build a new facility to better serve their clients' needs. **Rieck Services** provided design/build services for the heating, ventilation and air conditioning (HVAC) for their new 13,000-square-foot office and 62,000-square-foot production facilities.

In order to reduce upfront capital expenses in package rooftop equipment and reduce duct work that is normally required, a concentric ductwork package – one diffuser for supply and return air flows - was used for this project. This eliminated the cost of having job-specific, custom designed duct work manufactured and helped to maximize space for production, floor area, shelf height and crane booms.

“One of the challenges we faced was creating an environment with neutral air pressure,” said Paul Brown, Rieck’s Engineering Director. “At their previous facility, Think Patented had a building negative air pressure due to the constant running of production exhaust fans. This made controlling space humidity and temperature difficult.” Humidity control is extremely important in the printing business in order to maintain paper and printing quality. With a building negative, when the outside air temperature is below 32 degrees Fahrenheit, the air is dry and lessens the relative humidity to below 45 percent. At this humidity level, static electricity is created making the paper stacks stick together and paper begins to warp and buckle greater than 45 percent. In addition, cold air infiltration makes it difficult to meet constant space design temperature.

In order to reduce excessive building infiltration, the new HVAC design put all exhaust streams into one remote location, allowing the separation of the main facility from the process exhaust. This reduced the entire facility infiltration area from 63,000-square-feet to 420-square-feet and temperature and



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— Mike Staas, Think Patented’s Director of Production Services

humidity are much easier to control where it is required. The new system also reduced the cooling load by approximately 60 tons and eliminated the need for two 30 ton rooftop units, saving Think Patented approximately \$125,000 in up front capital equipment costs.

“We are enjoying our new facility,” commented Mike Staas, Think Patented’s Director of Production Services. “Rieck’s HVAC design has met our special space conditions required for premium printing and maintaining paper stock while also maintaining our office comfort needs.”

The new, installed equipment is covered under Rieck’s preventative maintenance program which is designed to meet Think Patented’s operational and financial goals and enhances the longevity and performance of HVAC systems.



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