

Finding ways to better serve our customers
and solve their problems.

number 5

Meeting multi-faceted performance requirements and stringent deadlines while maintaining the environmental and aesthetic goals of Herman Miller's The MarketPlace.

Ductwork for a new 100,000-square-foot office building developed by the Granger Group of Grand Rapids, Michigan had to meet stringent requirements. It had to be quiet, energy efficient, economical, and, of course, architecturally pleasing.

McGill AirFlow spiral ductwork filled the bill. Says Dale Larson, president, Northwest Kent Mechanical, "It looks cool. It's quiet acoustically. The U.S. Green Building Council has certified the building Silver LEED, and we blew everyone away with the price of the HVAC system. A LEED project can be double the cost that this system totaled."

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LEED stands for Leadership in Energy and Environmental Design. Certification is based on energy and environmental principles that identify environmental performance from a whole-building perspective. LEED certification was important to the building's tenant, international office furniture manufacturer Herman Miller. The company has a long-standing commitment to be a good steward of the environment.

Named *The MarketPlace*, the building houses 350 employees of the 12 departments responsible for creating first and lasting impressions for Herman Miller customers. It is Granger's first patented intelligisys® building. "Intellisys is a systemized approach to construction," says Jamie Pattullo of the Granger Group. "We assemble a team of subcontractors and suppliers that can meet our three areas of focus: quality, speed, and value."



McGill AirFlow's UNI-DUCT® program was used to design the entire duct system. It is 40 percent more efficient than the norm.

The building was constructed in just seven months, with occupancy in December 2001. "It's challenging for a supplier to provide such a rapid response," says Russ Swaney, president of Swaney Sales, the Michigan firm that supplied the McGill AirFlow ductwork system. "Questions need to be answered quickly and changes made immediately as the design changes. We don't want unneeded product on the jobsite."

The MarketPlace is a people- and environment-friendly building. White paint predominates. Recycled carpet, natural stone, and certified renewable wood are among the "green" resources used. Available natural light floods the building through its many windows, which created a challenge for the HVAC system.

An energy-efficient LEEDS building usually requires less ductwork because it moves less air without sacrificing comfort. The duct system at *The MarketPlace* is 40 percent more efficient than the norm, thanks to teamwork. "We were involved early and worked with the architect," recalls Swaney.

McGill used UNI-DUCT, its proprietary computer program, to design the entire duct system and map airflow and velocity. The new building has 60 zones created by 60 variable-air-volume boxes — 30 on each floor. Nearly all of the 6,500 lineal feet of spiral duct, ranging from 10 inches to 30 inches in diameter, is exposed in the 14-foot to 16-foot ceilings. Over 800 duct fittings were employed.

Exposing uninsulated ductwork is more economical compared to insulating ductwork in hot ceilings to prevent it from sweating in the summer. However, in this case, the 50 feet of duct extending from the four 50-ton air-handling units was insulated to ensure the required acoustical quieting.

UNI-DUCT helped identify locations for the 480 perforated diffusers used throughout the building. The faces of the diffusers are curved to match the spiral ductwork. "They look great and are efficient," says Doug Brandt, president of Beta Design, the firm that designed the facility. "They contribute to the clean architectural lines of the overall building."

All 10 sizes of McGill AirFlow's DUCT-D-DIFFUSERS® were used. The diffusers range in size from 10 inches x 6 inches to 16 inches x 8 inches. Each diffuser's airflow is tailored by adjusting the size of the hole cut in the spiral duct. The cut is to the exact size needed to achieve the required airflow for the specific area. "It's a computer-designed system with no need for additional balancing of airflow," Swaney says. "It's a one-time balance based on a constant airflow."

Geometric constraints for the duct system had to be addressed due to the building's unique structure and lighting system design. "The light source is tube lighting," Larson says. "The light is directed downward and upward to create a luminous ceiling effect. When we couldn't place the diffusers in their optimum locations, UNI-DUCT helped us customize their output of airflow and their throw patterns to achieve the required air distribution.

And the end result for Granger, Northwest Kent, Beta Design, and Herman Miller? Precisely what they were after: a building that is quiet, energy efficient, economical, and architecturally pleasing. And complete in only seven months.

McGill AirFlow Corporation

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