

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

number 1

*Solving tough installation and tight deadline problems  
on a large, fast-track exhaust system project.*

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When a construction project has a tight schedule, meeting deadlines is an important part of the job. Contractors bidding on this type of fast-track job need to be sure that their suppliers will be able to keep them on schedule. The cost of falling behind can be high, to both the contractor and the building owner.

A good example of this type of project is a multi-million dollar paint hangar recently built for Delta Airlines. Located at the Hartsfield International Airport in Atlanta, Georgia, this building has three hangar bays and extensive shop space. Its 500,000 square feet is served by heat recovery units that use an exhaust/return duct system to remove paint fumes and a fresh air/supply duct system to provide the make-up air.



*By meeting tight delivery deadlines, United McGill helped the contractors keep the project on schedule.*



*Flanges were welded to the sections of duct produced by the mobile duct machine.*

Before bidding on the job, mechanical contractor Mallory & Evans needed to make sure that they would be able to handle the tight schedule. They lined up a team to work on the project: United McGill, who would supply the duct, and Sheet Metal Installers, who would install it. Working closely with general contractor Garrett Patton Construction, these three mapped out a strategy for meeting the project's requirements.

The original duct layout was designed by Rosser Fabrap, an Atlanta consulting engineering firm. The hangar's design made it necessary for the ductwork to be installed through openings in the roof structure. Rosser Fabrap designed the system using rectangular ductwork, with the option to convert to round ductwork. Art McGuire, president of Sheet Metal Installers, explains, "When I saw what the structure was and what the engineer had in mind, I automatically said let's go with round duct. It's a lot easier than rectangular to fit into the triangular spaces between the trusses."



*Engineering time was saved by using the UNI-DUCT® computer program to redesign the air handling system with round duct.*





*The mobile duct machine produced duct right on the jobsite, eliminating the cost of shipping duct as large as 88 inches in diameter.*

Mallory & Evans, with Rosser Fabrap's approval, decided to redesign because of the installation time and money that would be saved. United McGill was able to simplify this task by using its UNI-DUCT<sup>®</sup> computer program for designing duct systems. The exhaust, return, and supply air systems were redesigned for round spiral duct. The result was a duct system that was easier to install and offered better system performance than the one originally designed. In addition to these benefits, using the UNI-DUCT<sup>®</sup> program to design the system with round duct instead of rectangular saved about 60 days of engineering time.

Once the design had been completed, Mallory & Evans needed to find a way to supply the ductwork quickly enough to keep up with the installation schedule. Again, United McGill provided a solution: using one of its mobile duct machines. These self-contained mini-factories operate right on the jobsite, producing duct as it is needed. Scheduling is simplified and delivery costs are reduced dramatically. Fittings for the Delta project would be manufactured in nearby Fountain Inn, South Carolina. This convenient location allowed the contractors to visit the plant and inspect the fittings before they were shipped. United McGill also committed two more of its regional plants (in Florida and Texas) as backup suppliers. These additional resources, combined with the pre-shipment inspection and well-planned staging, made meeting the schedule feasible. Mallory & Evans credits these factors with helping them make a successful bid for the job.

The air handling systems called for large ductwork, some of it 88 inches in diameter. Galvanized steel was used for the supply air system. But because of the paint stripping fumes being conveyed, the exhaust/return system had special requirements. The most notable requirement was using aluminum ductwork and flanges because of their ability to resist corrosion.

As the job progressed, the tightness of the schedule became more apparent. The roof was installed in stages, with only 4 days allotted for each section. During those 4 days, the ductwork for the entire section had to be installed. Once a section had been completed, there was no way to go back and install the duct.

Very little storage space was available, so keeping to the delivery schedules was critical. The ductwork needed to arrive on site almost the day it would be installed. The mobile duct machine helped solve that problem. Jim Brock, project manager for Mallory & Evans, says, "We were able to make the duct right here on the job. My forklift picked it up, carried it over to the building, and put it right in the building. Without that machine here on site, we'd have had almost an impossible situation meeting these schedules. So it was a real advantage."

In all, nearly 800 lengths of duct needed to be installed. Delivering fabricated duct from the factory would have meant shipping more than 100 truckloads. With the mobile duct machine at work, delivering the materials needed to fabricate duct on site required fewer than 10 truckloads.





*With its mobile duct machine, United McGill was able to set up a self-contained production facility on the jobsite.*

In addition to reducing delivery costs, the mobile duct machine helped solve installation problems. Last-minute changes in the layout could be made without any holdups. When a special piece of duct was needed, the mobile duct machine was able to produce it on the spot.

United McGill's project managers worked closely with Jim Brock and Art McGuire to coordinate delivery of the fittings. Jim Brock explains, "With only 4 days for each sequence, we needed delivery timed so that we could take the fittings off the trucks and put them up in the building. United McGill was able to get the truckloads of fittings here within the critical 4 days."

Installation of the ductwork proceeded smoothly throughout the project. The round spiral duct was manufactured in lengths of up to 25 feet, five times the longest rectangular length available. As the duct rolled off the machine, each length was piece-marked and flanges were welded onto the ends. With the significantly fewer joints required for the lengths of round duct, savings on installation time and materials were dramatic. Art McGuire said, "I believe that United McGill's duct system is an economical system. It's a lot easier to put in and work with."

**United McGill**  
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