

INDUSTRIAL INSIGHTS



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Industrial Contractors Council

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Delivering the Best in Modern Convenience

Ingersoll Cutting Tool Marketing and Technology Center Cherry Valley, Ill.

Sheet Metal Contractor: Miller Engineering Co., Rockford, Ill.



*The tool manufacturing facility features
exposed 60-inch spiral duct fabricated
by Miller Engineering.*

Assisting the client to achieve the best in modern convenience, safety and appearance was the primary objective of Miller Engineering's crew during the construction of the \$40 million state-of-the-art Ingersoll Cutting Tool Marketing and Technology Center.

Completed in December 2002, construction of the facility required the cooperation of several trades working on a compressed schedule.

See **Modern Convenience** on page 2

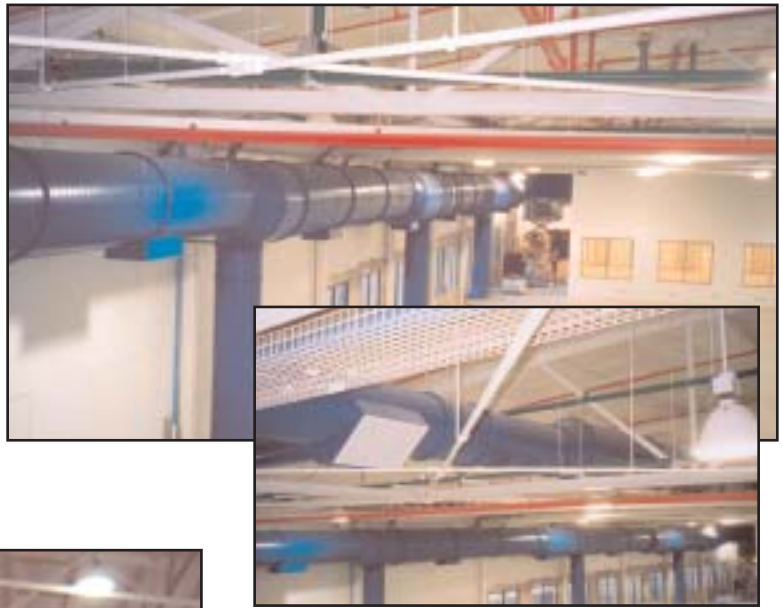
Modern Convenience

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“With a one-year schedule to complete three buildings, all the trades contributing to the project were cooperative and professional,” commented Todd Byxbe, project manager.

The 30-acre site is now the headquarters for Ingersoll’s marketing offices, tool production division offices and a production facility. The crew of Miller Engineering designed and installed the HVAC systems for all three facilities. In addition to fabricating the duct used on the \$4 million project, the crew installed 28 roof top units, more than 100 variable air volume (VAV) controls and 700 grilles, registers and diffusers.

On The Cover



“While there were numerous challenges on this project, the architect’s desire to maintain 10-ft. 6-in. ceilings within the office buildings presented the largest challenge for our team,” Mr. Byxbe explained. “In certain areas of the building it didn’t leave much room for intersections, but we made it work.”

Stored in an adjacent facility until needed, the 60-inch spiral duct is nearly as tall as Miller Engineering Job Superintendent Mark Shelly.

Drug Testing Guidelines Distributed

“SMACNA Guidelines on Substance Abuse and Testing Policies for the Sheet Metal Industry” is now available to chapters. Developed as a result of a recommendation from the Council of Chapter Representatives and approved by the Board of Directors, the guidelines are intended to assist local chapters in negotiating a drug testing policy that incorporates random testing provisions.

The guidelines include a state-by-state summary of laws regulating drug testing programs, legal guidelines for negotiating a

drug testing policy, statistical information on the prevalence and seriousness of drug abuse for use in supporting proposals for a strong drug testing policy, summary of SMACNA chapter drug testing programs and policies, and a discussion of how drug testing policies can help to reduce workers’ compensation premiums, etc. An example of general contractors’ and owners’ drug testing requirements is also included. ▼

Michigan Contractor Ensures Pharmaceutical Client Meets Stringent FDA Requirements

Project: Pfizer Technical Development Facility, Ann Arbor, Mich.

Sheet Metal Contractor: Limbach Company, Pontiac, Mich.

When Pfizer Pharmaceuticals needed state-of-the-art technical laboratories and offices for more than 400 scientists and staff, they turned to the Limbach Company, in Pontiac, Mich., to deliver \$50,000,000 worth of piping, plumbing and industrial sheet metal fabrication and installation.

The overall project is one of the largest of its kind in the United States and brings all functional components of Pfizer's Pharmaceutical Sciences Group in Ann Arbor under one roof in a 425,000-square-foot mixed-use facility. According to Mike Kotubey, operations manager, Limbach crews fabricated and installed almost two-million pounds of ductwork from 10 gage to 24 gage.

Meeting the strict U.S. Food and Drug Administration (FDA) guidelines required the Limbach team to use ingenuity and creative thinking. "FDA and customer requirements dictated that each section of duct was cleaned and sealed at our facility," explained Pat Meisenheimer, project director.

This turned out to be a bigger challenge than originally anticipated. Various methods of fastening end covers were tried and proved unsuccessful. Finally, the Limbach general foreman, Jack Knapp, suggested using liner clips for swimming pools, which solved the problem of fastening the plastic end covers to the duct. The liner was inexpensive, easy to remove, and reusable.

Limbach fabricated the duct using galvanized steel, aluminum and Type 316 stainless steel. All ductwork was cleaned and sealed at a special "duct clean room" at the Limbach facility before being

transported to the jobsite. "Both the FDA and customer representatives performed cleanliness verifications at the Limbach facility and a second time at the construction site," explained Steve Beaudry, Limbach project manager.



Limbach employee Charlie Mack stands next to the 144-inch-by-72-inch square throat supply air elbow rated at 10-inch wg. with turning vanes.



Limbach craftsman Scott Sneddon seals a piece of cleaned, fabricated duct using swimming pool clips.



The completed lab/office roof exhaust plenum with the fans tied in after assembly.

Equipment Upgrades

Reap the Return on Your Investment in New Market Opportunities

Is hanging on to out dated equipment actually costing your firm more money in maintenance, repairs and downtime than buying an upgrade? Could new shop equipment open up new market opportunities?

A decision to invest in upgrading shop equipment is not made easily. A shop owner could spend months comparing prices and capabilities to available budget and shop needs. But then there's the moment when you realize you can't afford not to make the investment.

That moment came for Randolph Sheet Metal, in Pasco, Wash. when the constant repairs on the shop's shear nearly cost the firm a lucrative project as well as threatened to stop production.

"Our firm had been experiencing material and labor cost overages on many of our fabrication projects," explained Khris Judy, president. "The old shear was the problem – it was continually out of tolerance and had to be adjusted. In the midst of deciding whether the firm could afford a new shear, we were scheduled to begin installation of more than three miles of flashing in three weeks. In order to make that schedule we needed to begin shearing and fabrication within the next week."

The firm's management team began exploring their options to either repair the existing shear or purchase a new one. Unfortunately due to the current shear's age, a guaranteed fix was not an option. The mechanic offered Randolph a "band-aid" but, the "band-aid" cost was comparable to a down payment for a new shear. On top of that, during the repair the shear



The old shear (below) was replaced by a new 12-foot shear (above). The new shear has helped Randolph Sheet Metal establish a stronghold in their area for shearing and press broken shapes. The investment in the new equipment has increased the firm's productivity while reducing overages in material expenses.



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Equipment Upgrades

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would be out of service for at least a week and the mechanic who would make the repairs would not be available for at least four weeks.

“The results of the new shear are nothing short of astounding.”

After reviewing maintenance records and rework expense reports for the shear, the managers learned that these costs had increased almost 50 percent from the same six-month period two years ago. “We were shocked at the amount of money invested in operating the shear,” Ms. Judy commented. “Our shop foreman compared it to putting spare change into a jar at the end of the day. It doesn’t seem like much at the time, but it adds up at the end of the year.”

With all the evidence compiled, the decision was made. Randolph Sheet Metal needed a new shear and fast. So the managers went shopping. “Our equipment distributor suggested a 10-foot shear with CNC controls and an automatic back gauge,” she explained. “He said the increased production capabilities would help offset the overall price tag and more than pay for the CNC upgrade.”

But then another hurdle was placed before the Randolph team. A shear and price had been decided upon, but the new machine would not be available for eight weeks. The distributor, anxious not to lose a sale, found a similar shear being repossessed by a leasing company and it would be available in less than a week. The only problem – it was a 12-foot shear.

In the end, the managers decided on the larger shear because Randolph would be the only shop with a 12-foot shear in the area, giving them an exclusive local capability.

“The results of the new shear are nothing short of astounding,” raved Ms. Judy. “The CNC controls and automatic back gauge allow us to program in a shearing succession record with counting capabilities. This boosted shearing production by approximately 30 percent on our school proj-

ect. It’s extremely easy to program and a less experienced craftsman can perform complex shearing sequences without a lot of oversight.”

At first the shop foreman was very unsure of working on equipment with CNC controls and automatic functions. He soon realized the tremendous advantage Randolph now had over the competition. With the ability to fabricate faster, more accurately and with less waste, Randolph was able to secure more work and increase shop profitability. This brings more work which in turn helps keep the craft personnel employed. The new equipment doesn’t take the place of a worker. It adds to the value of the hours being utilized.

With the ability to fabricate faster, more accurately and with less waste, Randolph was able to secure more work and increase shop profitability.

While there were several hurdles for Randolph to jump during this critical time, the decisions they made have helped the firm attract new customers and gain additional projects. Since the purchase of the shear, they have bought two new presses with CNC controls and automatic back gauges.

“With the addition of the new equipment, we have secured the local market for shearing and press broken shapes,” Ms. Judy said. “Looking back, I don’t know how we ever survived with the old equipment. The only reason I can come up with is our local competition didn’t have the upgraded capabilities either. I would encourage anyone that has equipment without such devices to take a close look at your processes, maintenance costs and material overruns on your projects. Then compare those costs, on an annual basis, to the production efficiencies you gain and cost of a new machine. Even using conservative numbers I think you’ll be surprised.” ▼

Welding Certification Program Offers Stromberg Metal Distinct Advantage Over Competition

When customers of SMACNA industrial contractors demanded certified welding inspections as part of project specifications, the International Training Institute (ITI) answered with the Welding Certification Program. The ITI has taken that successful program one step further by providing training to allow each contractor to have a Certified Welding Inspector (CWI) in-house.

SMACNA member, Stromberg Metal Works Inc., is among the first contractors taking advantage of this exciting new opportunity.

In December 2002, Stromberg added three ITI/American Welding Society (AWS) CWIs to their staff. These in-house CWIs allowed Stromberg to fulfill AWS Welder Certification requirements on demand, as required by various specifications. With the ability to perform welding certification in-house, Stromberg has increased its total welding man-hours. "We've had to hire two more welders just to keep up with the welding," commented Richard Thompson, company president.

Certified Welding Inspector Training Program Dates

July 20-27	Allentown, Pa.
Nov. 16-23	Las Vegas, Nev.

Robert Gawne, chairman of Stromberg and SMACNA board member, believes having CWIs in-house provides his firm a distinct advantage over his competitors. "Our firm can quickly and efficiently facilitate required AWS welding certifications on-site as needed," Mr. Gawne said. "The sooner the Construction Specifiers Institute (CSI) incorporates welding and TABB certifications into the standard specification form, the sooner we will secure even more work"

Founded in 1940, Stromberg has shops in Beltsville, Md., Raleigh, N.C. and Richmond, Va. Employing close to 450 sheet metal workers, the firm has been actively involved with the ITI welding program for nearly 10 years.

For more information on the ITI/AWS welding program please contact James Shoulders, ITI administrator of training, at jshoulders@sheetmetal-iti.org or (703) 739-7200. ▼



Sheet Metal Workers' International Association (SMWIA) Local 100 member Bob Hampl, one of three in-house CWIs, works to keep up with increased welding demands thanks to the ITI's stepped up Welding Certification Program.

Certified Welder Training is Available Near You

There are currently 85 accredited test facilities (ATF) available for SMACNA members. Each ATF is required to have at least one American Welding Society (AWS) Certified Welding Inspector (CWI). In addition to the ATFs, there are currently three regional assessors covering the United States and Canada. These assessors have been trained by the AWS to accredit the local JATC welding lab.

Contractors interested in having a CWI on staff should begin by contacting an ATF in their area. The CWI training program, administered by the International Training Institute, is an intensive week-long program with a pre-qualification process. Candidates for CWI training must be members in good standing of the Sheet Metal Workers' International Association (SMWIA). ATF staff may be able to assist with selection of the best qualified candidates for certification training.

The next CWI training program will be offered July 20-27 in Allentown, Pa. The program provides an in-depth review of the topics tested on the AWS certification exam. Preparation for the exam is treated very seriously, with 62 percent of students passing the AWS exam – well above the national average of only 42 percent.

For more information about the ITI/AWS Certified Welder Program and CWI training visit the ITI Web site, www.sheetmetal-iti.org or contact James Shoulders, ITI administrator of training, at jshoulders@sheetmetal-iti.org or (703) 739-7200. ▼

Meet the Newest Members Of the Industrial Contractors Council

Welcoming four new members, the Industrial Contractors Council Steering Committee strives to develop high-quality programs and services to SMACNA members performing industrial sheet metal work.

The newest Committee members include:

- James Cesak, Tal-Mar Custom Metal Fab, Crestwood, Ill.
- Michael Corrigan, Lyon Sheet Metal Works, St. Louis, Mo.
- Khris Judy, Randolph Sheet Metal, Pasco, Wash.
- Nick Seraphinoff, Allied Ventilation, Warren, Mich.

Although from different regions, these contractors are aware of the challenges facing the industrial sector and offered some insight into their business philosophy and background in the industry.

Q: How did you first enter the sheet metal trade?

A: Mr. Cesak: “I came up through the SMWIA Local 73 apprenticeship program. Then six years ago, I partnered with several other union co-workers to start our own firm where I serve as vice president of operations.”

A: Mr. Corrigan: “My first job in the industry was as a draftsman. I worked my way up the ladder to now serve as president of the firm.”

A: Ms. Judy: “My sister and I grew up with a passion for this industry as we hammered duct together for small side jobs our father was doing. Now I’m proud to be president of a women-owned and operated firm.”

A: Mr. Seraphinoff: “I’ve been a part of this industry since I was 18 and started apprenticeship training. I opened my own firm in 1981 with the help of my wife, Mary.”

Q: Could you describe your firm’s business philosophy?

A: Mr. Cesak: “We strive to build long-term relationships with our customers. All our employees are dedicated to deliver the best to the client.”

A: Mr. Corrigan: “A family-business since 1923, we work to consistently satisfy our customer’s expectations by building quality mechanical systems using the best resources.”

A: Ms. Judy: “Randolph employees are encouraged to continually perfect their abilities, strive for perfection and achieve exceptional customer relations.”

A: Mr. Seraphinoff: “At Allied, we strive to provide a quality product on time and at a competitive price.”

Industrial Contractors Forum

Managing Fast Track Industrial Projects – Keys to Success

Challenges facing SMACNA industrial contractors on fast-track projects range from effectively communicating with owners, engineers and other contractors to documenting the changes discussed in those meetings. The scheduling constraints of a planned or emergency plant shutdown along with added pressures of adhering to stringent government guidelines plus meeting specific deadlines provide even more challenges. Additionally, the industrial contractor often acts as the primary contractor for the project, increasing his responsibilities significantly.

This year’s Industrial Contractors Forum, “Managing Fast Track Industrial Projects – Keys to Success,” during SMACNA’s annual convention in Washington, D.C., will feature an interactive discussion of the challenges of industrial projects from both the owners’ and contractors’ perspectives. Led by Roger Hoover, of Non-Crisis Management, the session will address communicating effectively, recognizing safety issues, identifying scope of work, clarifying engineering data, documenting change orders and making sure you get paid.

In addition, examples of how SMACNA Contractors have effectively worked with owners under demanding circumstances will be discussed. Forum attendees may share how they have dealt with project challenges.

The forum, scheduled for Monday, Sept. 29, will conclude with a 45-minute roundtable discussion, conducted by members of the Industrial Contractors Council Steering Committee, on such issues as training, drug testing and industrial software.

SMACNA’s annual convention, Sept. 28 - Oct. 1, will be held at the Marriott Wardman Park Hotel in Washington, D.C. For more information visit www.smacna.org and click the “SMACNA annual convention” icon or contact Mary Lou Taylor, director of meetings and convention at mtaylor@smacna.org or (703) 803-2998. ▼

Tech Tip

Welding Dissimilar Metals

Dissimilar metals, as the name implies, are chemically or metallurgically different alloys. One of the most common combinations is carbon steel welded to stainless steel. Once dissimilar metals are joined by fusion welding the complexity of the resulting behaviors can be significantly different from that of either of the base metals, requiring that the designer give these differences careful consideration.

Following are some of the issues to consider and evaluate:

- The microstructure of a weld can be considered equivalent to that of a casting with lower fatigue strength, reduced ductility and chemical segregations, all of which can have an impact on the service life of the weldment.
- The effects of metallurgical alloying within the weld itself
- The heat affected zone of each base metal
- Melting temperature differences
- Thermal conductivity differences
- Thermal expansion differences
- Magnetic effects

Source: American Welding Society (AWS) "Welding Handbook, Volume 4 - Materials and Applications - Part 2," eighth edition. Chapter 6: Clad and Dissimilar Metals.

Illinois Contractor Completes Installation of Largest Commercial Oven

Commercial Oven Installation Chicago, Ill.

Sheet Metal Contractor: TAL-MAR Custom Metal Fabricators Inc., Crestwood, Ill.

When this client needed to be assured that all the components surrounding the largest stone commercial oven in the U.S. would be installed properly, they turned to the multi-faceted craftsmen at TAL-MAR Custom Metal Fabricators.

With all the necessary equipment purchased by the client, the \$300,000 project required the experienced crew install the components and fabricate additional machine guards, handrails and crossover platforms.

The additional guards, handrails and platforms were fabricated using Type 316 and 304 stainless steel.



Installing the largest stone commercial oven in the U.S. required the expertise of the multi-talented TAL-MAR staff.



All machine guards and handrails were fabricated by TAL-MAR.

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