

INDUSTRIAL INSIGHTS



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Industrial Contractors Council

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Inside Insights...

Featured Projects of SMACNA Contractors

**Venture Industries
Grand Blanc, Mich.**
Expert Air Inc., Grand Blanc,
Mich. 1

**Mesa Motorola
Semiconductor Products
Sector, Mesa, Ariz.**
J.B. Rodgers Mechanical
Contractors Inc./KINETICS,
Phoenix, Ariz. 3

**National Semiconductor,
Arlington, Texas**
Construction Mechanical
Systems Inc.,
Grapevine, Texas 4

**Shop Profile:
Budde Sheet Metal
Works**
Dayton, Ohio 2

Pollution Abatement System Installed In Four Months

Venture Industries, Grand Blanc, Mich.

Sheet Metal Contractor: Expert Air Inc., Grand Blanc, Mich.

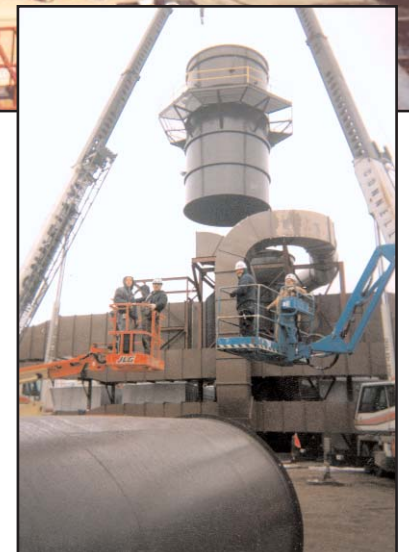


The impressive maze of 10-gage metal ductwork was installed on the exterior of Venture Industries during the cold Michigan winter.

A tight four-month deadline during a harsh Michigan winter, presented a large challenge to the crew of Expert Air Inc. during the installation of the pollution abatement system for Venture Industries.

The \$2 million project required Expert Air to install 600,000 pounds of 10-gage metal ductwork. The average duct size was 80-inch round and required continuous welded flange. Installation was performed without an interruption in plant production and in compliance with Environmental Protection Agency (EPA) guidelines.

In addition to the ductwork installation, a 65-foot tall discharge stack measuring 16-feet in diameter was installed. The project required the fabrication of 5,000 linear feet of duct.



The crew of Expert Air takes special care during the installation of the 65-foot tall discharge stack.

Shop Profile

Making an Investment in the Equipment of the Future

Staying in business in today's competitive climate means making investments in the equipment that will make you the customer's first choice.

"The customer desires one-stop service and we want to be able to offer the capabilities to fill all their needs," commented Steve Budde, of Budde Sheet Metal Works, in Dayton, Ohio.

Founded in 1922, Budde Sheet Metal Works is a family-owned business that specializes in precision specialty sheet metal work and industrial ventilation systems. They strive to provide custom service, on-time delivery, quality craftsmanship and professional management, while offering competitive pricing. Their specialties include machine guards, control boxes, tanks, pans, chutes, chassis, frames, ventilation/exhaust

systems, particle/fume management systems as well as all manner of ductwork.

In the last two years, Budde Sheet Metal Works has made several investments in new advanced equipment to allow them to better serve their customers. "It started in early 1999, when we installed a new server to link our network of 14 personal computers. We, then, started to evaluate our shop equipment," Mr. Budde said.

As many sheet metal contractors experience, the time to replace pieces of equipment was coming near. "It had been almost 20 years since we invested in a major piece of shop equipment. We were concerned that a breakdown could shut us down while we searched for replacement parts."

Considering many options over the course of a year, the Budde shop made a

decision that many contractors would view as risky. They purchased a Trumpf L3030 3000 watt laser cutting center and a Trumpf TC2000R punch press. "A number cruncher may not be able to justify the investment we made, but we believe if you want to stay in business then you make the investment."

"In our area, there are several shops that just perform laser cutting and we are not trying to compete with them directly," Mr. Budde explained. "Although, we were finding that customers were bringing us their laser cut materials and asking us to finish and form the final product. Our goal, with the new equipment in place, is to bring that customer to us from the beginning and have total control over the finished project." ▼



The Trumpf laser cutting center, installed in the Budde Sheet Metal Works shop in 2000, features a 60-inch by 120-inch flat sheet pallet changer.



The Trumpf punch press enhances the production at the Budde shop by performing up to 900 hits per minute.



The Trumpf punch press performs intricate, accurate cutting.

Industrial Insights

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Executive Editor
Rosalind P. Raymond

Editor
Danielle A. Dobiesz

Communications Specialist
Denise J. Ladd

Council Liaison
Thomas J. Soles, Jr.
James F. Pierzynski

Sheet Metal and Air Conditioning Contractors' National Association
P.O. Box 221230, Chantilly, VA 20153-1230 • Phone: (703) 803-2980 • FAX: (703) 803-3732
www.smacna.org • E-mail: info@smacna.org

Mesa Motorola Semiconductor Products Sector, Mesa, Ariz.

Sheet Metal Contractor: J.B. Rodgers Mechanical Contractors Inc./KINETICS, Phoenix, Ariz.

The crew of J.B. Rodgers Mechanical Contractors/KINETICS recently installed a 420,000 cubic-foot-per-minute, seven scrubber system in the Mesa Motorola Semiconductor Products Sector (SPS) complex in Mesa, Ariz. The new system will remove acid and ammonia exhaust from a clean room.

During the project, which began in July 2000, sheet metal workers, pipefitters and ironworkers retrofitted the scrubbers into

an existing exhaust handling system. As part of the effort, Motorola provided 1,240 linear feet of acid duct, which was assembled onsite in major sections, then transported to a crane and lifted to the roof of the complex. The installation features an expansive array of ductwork, supports, scrubbers and industrial waste handling systems.

During the first of three phases, the KINETICS team installed an industrial waste network below the scrubbers. This portion of the system will transport overflow drainage from the scrubbers into the existing industrial waste system. During phase two, the acid and ammonia roof supports

and ductwork were installed on the roofs of four Motorola modular manufacturing areas.

The work was a joint effort of the sheet metal workers and ironworkers. Just as impressive, the work was completed with the use of a 300-ton Link-Belt crane. Extensive structural supports were erected so the acid exhaust could be conveyed from the factory area via four existing stacks, which were connected to the new exhaust system. The ammonia system will be connected to the ammonia ductwork system with penetrations and connections installed to the sub-fab at a later date.

Reprinted courtesy of J.B. Rodgers Mechanical Contractors Inc./KINETICS Inc.



Crew members carefully installing a segment of the 1,240 linear feet of acid duct.



Detailed view of a portion of the Motorola plant ductwork.

Meet the New Industrial Contractors Council Member

Mike Clark

Matherly Mechanical Contractors Inc., Midwest City, Okla.

For more than 20 years, Mike Clark has been a part of the sheet metal industry. Beginning as an apprentice in 1977, he now serves as sheet metal operations manager for Matherly Mechanical Contractors in Oklahoma.

Matherly Mechanical was founded in 1962 with a workforce of four. Now the company employs an average of 200 craftsmen, office and management personnel. The company performs work in every phase of commercial and industrial piping and sheet metal work with specialized expertise in construction within operating

facilities such as hospitals, industrial plants and production facilities.

“More and more our industrial customers are compressing the duration of their projects to the point where there is a short time for the bidding process and limited time for the procurement of material and fabrication,” commented Mr. Clark about the challenges that his organization faces. “This is also compounded by the amount of skilled labor required to complete a project in a reduced amount of time.” ▼

National Semiconductor Arlington, Texas

**Sheet Metal Contractor: Construction
Mechanical Systems Inc., Grapevine, Texas**

The installation of two scrubbers and associated duct as well as a make-up air unit and its associated duct was a challenge that required the crew of Construction Mechanical Systems to complete the installation without production interference.

The system required the fabrication and installation of fiber glass reinforced plastic duct as well as galvanized and stainless steel duct. Structural steel supports were installed at the roof.



The two scrubbers along with the respective fans, stacks and manifold were installed at National Semiconductor without creating an interference in production.



Above: The scrubber fan and stack is one of 13 that services the Arlington facility.

Left: The make-up air unit feeds air back into the system.

ITI/AWS Custom Certified Welder Program Guarantees Competitive Workforce

When the job requires that the welder is AWS certified, SMACNA Contractors have the competitive edge.

The International Training Institute's Certified Welder Program is recognized and approved by the American Welding Society. This program is available free of charge to all SMACNA Contractors.

SMACNA Contractor Kirk and Blum utilizes the ITI/AWS Certified Welder Program. It is their experience that engineers

more frequently are specifying welders that are AWS certified.

According to Kevin Harris, shop superintendent for Kirk and Blum, in Indianapolis, Ind., "Engineers used to ask for a certified welder. However, today more and more engineers are specifying AWS certification of welders."

See **Welder Program** on page 6

Industrial Council Member to Participate in Ventilation Conference

Focusing on the principles of air flow, controlling airborne contaminants and system testing, the 23rd Annual Industrial Ventilation Conference will feature Industrial Contractors Council Chairman William Fay, of H.M. White Inc., Detroit, Mich., during a session on replacement air.

The conference, scheduled for Oct. 15-18 at the University of Alabama, Birmingham School of Engineering, will use lectures and hands-on problem solving sessions to instruct attendees how to design various types of systems step-by-step. Conference attendees will learn how to select appropriate exhaust hoods, determine air volume and minimum duct velocity, how to size duct, calculate system pressure loss and the selection of fans, air cleaning devices and several other ventilation topics.

Each attendee will also select a specific problem session to attend. The problem sessions will offer the student the opportunity to work through the problem applying the lessons learned during the conference. The problem sessions will review several topics including an introduction to ventilation systems design as well as intermediate and advanced systems design. Other problem sessions will review non-standard air design and plant engineering/ventilation systems.

For more information on the 23rd Industrial Ventilation Conference visit www.eng.uab.edu/apd/ or call the Professional Development Department at the University of Alabama, Birmingham School of Engineering at (205) 934-8994. ▼

SMACNA Offers Products To Keep You Safe!

The hazards of industrial work include the potential for encountering confined spaces, the need to lock out dangerous moving parts and sometimes even the need for respiratory protection. Spending more than nine million man-hours last year performing industrial work, SMACNA industrial contractors reported a 3.70 lost workday incident rate on the 2000 Safety Statistic Evaluation and Survey. To maintain that safety record it is necessary to have safety materials available to help meet the industrial sector's needs.

SMACNA's Department of Safety and Health has developed a number of items that can be used to assist the industrial contractor in complying with OSHA and keeping workers safe from the dangers of industrial work.

Safety Products Available from SMACNA

All SMACNA safety products may be ordered through the SMACNA Web site at www.smacna.org or by contacting the publications department at (703) 803-2989.

Safety Excellence Plus Software – This award-winning software provides a basic foundation for a company's entire safety program and covers more than 20 safety topics ranging from a basic safety program, fire prevention, stairways/ladders, and confined spaces to vehicle safety and more. An alarm system within the software can alert the user when training needs to be performed, medical exams are required, or when inspections should be conducted. The software also contains more than 200 toolbox talks, OSHA written programs, compliance forms, and management guides and checklists. All SMACNA Contractors received a complimentary copy of the software and may purchase additional copies for \$50 each.

Permit-Required Confined Space Training Video – A 12-minute training video explaining OSHA's Permit-Required Confined Space Standard. This Standard (29CFR 1910.146) calls for employers to identify all permit-required confined spaces in their workplaces, prevent unauthorized entry into them, and protect authorized workers who work in designated confined spaces. Member price is \$10.

Hazard Communication Video Training Kit – This 30-minute video developed specifically for the sheet metal and air conditioning contractor reviews the requirements of the OSHA Hazard Communications Standard. The video package includes a presenter's guide and 10 employee handbooks (additional handbooks may be purchased from SMACNA's publications department). Member price is \$49.

Guide to Control of Hazardous Energy – This 54-page guide is designed to assist contractors in determining their need to control hazardous energy, as well as development of a hazardous energy control program. The manual contains toolbox talks, a copy of the OSHA standard on control of hazardous energy, and a program audit checklist in the appendices. Member price is \$7.

Guide to Respiratory Protection – This manual enables contractors to comply with OSHA's standard on respiratory protection. It includes a guide to developing a

See **Products to Keep You Safe** on page 6

Products to Keep You Safe!

Continued from page 5

written respiratory protection program and a “plain English” version of the standard. Checklists, information on training and fit testing, and a number of toolbox talks are also part of the manual. A flow chart is included to help contractors determine which requirements of the standard they must complete. Member price is \$11.

Personal Protective Equipment Manual – This 85-page book contains everything needed for a personal protective equipment (PPE) program, including a sample policy statement, guides to choosing and purchasing the proper PPE, recordkeeping tables, and toolbox talks for training. No contractor should be without this SMACNA manual. Member price is \$10.

Safety Toolbox Talks Volumes 2 and 3 – Each book contains 100 toolbox talks covering a variety of hazardous exposures in the sheet metal industry. The talks allow a supervisor/trainer to present refresher safety training sessions on a weekly/daily basis. Attendance forms are included on the back of each talk to assist contractors with keeping training records. Member price is \$6.

Hazard Communication Toolbox Talks – This book contains 28 safety training Toolbox Talks covering the Hazard Communication Standard (the most frequently cited OSHA standard). Each talk is presented in a one-page tear-out form which includes an attendance roster. Member price is \$6.

Safety Products from the Sheet Metal Occupational Health Institute Trust (SMOHIT)

To purchase these programs contact Gary Batykefer, SMOHIT administrator, at (703) 739-7130.

Welding Safety Wheel – This durable slide chart with step-by-step instructions, enables the user to match the relevant applications or electrode with the corresponding health hazard/symptoms. Control measures are on the reverse side of the wheel. The wheel includes everything from the elimination of the hazard to personal protective equipment.

Confined Space Training Program – This CD-ROM program includes an instructor manual, student manual, test and certificate of completion and is designed so an authorized Occupational Safety and Health Administration (OSHA) instructor can deliver the training either in the classroom or on a jobsite. Upon completion of the 4-hour course, students receive certification in the OSHA Confined Space Entry Standard for General Industry 1910.146 and Construction 1926.21(b)(6).

SMOHIT Hoisting and Rigging by Design – This video training kit tackles pertinent issues facing workers and contractors from the use of rope falls, come alongs, and chain falls to lifts using a helicopter. The five-module video focuses in particular on load calculations and the proper use of wire and fiber rope. Also available is a hand signals chart and quiz booklets to test students’ knowledge. ▼

Welder Program

Continued from page 4

“Requiring AWS certification is costly and inconvenient for our non-union competition,” Mr. Harris explained. “However, for SMACNA members, it is convenient, timely because we have many JATCs that are accredited test facilities that can administer an AWS test.”

The ITI/AWS Certified Welder Program makes it easy to get sheet metal workers AWS certified quickly. If the job requires six welders certified to weld GMAW short circuit with stainless, a half-day testing session at the JATC or the shop is all it takes.

“In the beginning, I was concerned with all the weld requirements of the job,” Mr. Harris said. “However, the ITI/AWS program put my concerns to rest. After getting their AWS welder certification our employees approach with increased pride and they produce a better welded product.”

A list of ITI welding assessors is also available on the ITI Web site at www.sheetmetal-iti.org

There are numerous standards being specified on jobs today. Each one has different requirements for welder certification. The requirement for certification is not a problem for SMACNA Contractors thanks to the ITI/AWS Certified Welder Program, which can certify to any standard.

Kirk and Blum has used the AWS certified welder to secure work with many of its customers. Some of their customer requirements are so stringent that they require the welding inspector to be an AWS certified welding inspector. All of ITI welding inspectors are AWS certified.

For more information about the ITI/AWS Certified Welder Program contact your regional ITI welding assessor at (703) 739-7200 or your local SMACNA Chapter. A list of ITI welding assessors is also available on the ITI Web site at www.sheetmetal-iti.org. ▼

SMACNA Members Only

Customized Industrial Insights Newsletters Available!

The Industrial Insights newsletter is a great opportunity for SMACNA industrial contractors to promote the specialized large-scale projects they complete. This four-color newsletter features projects ranging from industrial HVAC systems to clean room installations.

As an additional benefit, SMACNA Contractors whose projects appear in Industrial Insights may now purchase a one-page featured edition newsletter. The special edition disk will feature the project that appeared in this issue with the Industrial Insights masthead and SMACNA logo. The special edition disk costs \$500 and is available to SMACNA Contractors featured in this publication.

All SMACNA Contractors with a featured project in this issue will receive five complimentary copies of the issue with a request form to purchase the customized special edition disk. Contractors with projects featured in previous issues of Industrial Insights may also purchase the special edition disk.

For more information on the special edition disk of Industrial Insights contact Danielle Dobiesz, SMACNA communications manager at (703) 995-4036 or ddobiesz@smacna.org.



The Industrial Insights Featured Edition may be used as a creative promotional flyer to publicize your recent work.

Industrial Duct Design Provides Focus for Industrial Contractors Forum

Industrial duct is a broad classification of ductwork used for many diverse applications. Air pollution control systems, industrial exhaust systems, general plant process ventilation and systems outside the pressure range of commercial system standards are classified as industrial systems.

This year, the Industrial Contractors Forum, on Monday, Oct. 22, during SMACNA's annual convention, in Boca Raton, Fla., will focus on industrial duct design and SMACNA's Round Industrial Duct Selection Software.

"Industrial Duct Design and Construction Utilizing SMACNA's Round Industrial Duct Construction Standards" will be led by Industrial Contractors Council Steering Committee Chairman William Fay,

SMACNA Web Update

Discover What Software Other SMACNA Members Are Using

Selecting and using the appropriate software for your firm is essential to stay competitive. But, how do you know what to select? The help and advice of your fellow contractors could greatly enhance your ability to select the appropriate software for your firm or maximize the software you already have.

In order to help SMACNA members in their search for software, SMACNA has developed a real-time online version of the SMACNA Computer Software Survey, located on the SMACNA Members Only Web site at www.smacna.org. To access the survey, you must be registered for the Members Only site.

The Online Software Survey, which replaces the hard copy version, last published in 1997, offers members a convenient way to stay up-to-date with current software, which constantly changes.

This networking tool enables you, as a SMACNA member, to locate and contact other contractors who either use the same software or who use software that you may be interested in. The survey categorizes software packages into ten different types. The categories are:

- Accounting
- CAD/CAM/CADD Calculation-Heat, Pressure
- Calculation-Heat, Pressure
- Cutting/Fabrication
- Duct-Layout/Sizing/Estimating
- Facility Management
- HVAC
- Networks
- Project Management/Scheduling
- Service

To access the data, you must complete the survey. To do this, go to the SMACNA homepage, www.smacna.org, select "Members Only" from the menu on the left side of the page. If you have not registered for access to the "Members Only," you will be prompted to complete the member registration. A drop down menu will appear and you select "software survey." Once you are at the survey, click on "complete software survey."

Completing the survey will enable you to access the query software applications section. You may search this section by selecting a software package for any category, inputting a user's name, city, state or primary work category to find out what they are using. Selecting more than one criterion puts a higher constraint on the result set. If you do not find any matches, consider searching for fewer specified software packages.

If you have any questions on the software survey or how to access SMACNA's Members Only site, contact SMACNA's member services department at (703) 995-4024 or e-mail at info@smacna.org. ▼

Industrial Contractors Forum

Continued from page 7

president, H.M. White Inc., of Detroit, Mich. The session will examine round and rectangular duct construction based on SMACNA's "Round Industrial Duct Construction Standards," second edition, 1999.

The successful design of an industrial duct system begins with an accurate appraisal of the characteristics of the material to be conveyed. During the session, Mr. Fay will review how the material being conveyed through the duct will affect the duct design.

The second portion of the forum will be led by G.A. "Bill" Navas, project manager, SMACNA technical resources department. During this session, Mr. Navas will review the many timesaving features of SMACNA's new Round Industrial Duct Selection Software (RIDCS).

The software was developed by SMACNA Contractors to automate the duct selection process for complex systems consisting of multiple duct sizes or when the design parameters fall outside the

range covered by the tables or for outdoor systems subject to wind, snow and ice loads, as the manual calculations can be challenging, as well as very time consuming, even for someone familiar with the calculation process. During this session, Mr. Navas will demonstrate the many ways the software eases the complicated design process with labor-saving calculation tables and creation of project documentation.

The forum will conclude with a group roundtable that will offer contractors an opportunity to discuss issues of importance to their market share and growth.

For more information about SMACNA's 58th annual convention, Oct. 21-24, Boca Raton, Fla., and to register, contact the Meetings and Convention Department at (703) 803-2980 or register at www.smacna.org. ▼

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