VIRTUAL DESIGN AND CONSTRUCTION: Visualizing and Designing a Better Building

Virtual simulation has been a popular training tool for decades in industries ranging from aeronautics to medicine. Now, architects, engineers, and construction companies are venturing into the virtual world to improve the process of designing and completing building projects.

Virtual design and construction (VDC) systems allow the parties collaborating on a project to simulate the entire construction process in a 3D environment before beginning actual work at the physical job site.

continued on page 8 >>
PRESIDENT’S COLUMN

The “Super Bowl” Event of the Year

There is no doubt that SMACNA’s Annual Convention is our industry’s big event each year. And like the start of playoffs for the Super Bowl, the Stanley Cup, or the World Series, now is the time for SMACNA fans to get excited and focus on the trail to the convention and all it has to offer. This year in particular, I find myself filled with anticipation as we celebrate 75 years of knowledge and networking at the 75th Annual SMACNA Convention.

As you can tell, I am looking forward to attending SMACNA’s 75th Annual Convention this October 14-17, in San Diego, California. It will be an unforgettable event that I am sure will energize all attendees and keep us all well-informed and at the forefront of our industry.

If you are like me, you value the opportunities to attend many of the informative educational sessions, including the Market Sector Forums, which are some of my favorites. These sessions focus exclusively on architectural, industrial, residential, and commercial HVAC sectors and provide me (and others) with a valuable deep dive into specific topic areas. I also enjoy exploring the Product Show to learn about new companies and emerging technologies that are sure to make a difference in our industry.

SMACNA’s Annual Convention is a game-changer for me because it takes me out of my daily routine and opens my eyes to new opportunities while motivating me to focus on the future. It shakes things up for me and that’s something I value.

I cannot tell you how many times I have walked the halls of the convention, entered a conversation with someone and walked away thinking how fortunate I was to have bumped into him or her. It’s these serendipitous moments that add intangible value to this event.

I’ll be candid, I not only look forward to the business opportunities at the convention, I also enjoy the social aspects. Whether it is a golf tournament, a concert, or a chapter-sponsored event, I enjoy every moment I get to spend with my friends, my peers, my suppliers, and of course, my family.

This year, SMACNA has outdone itself, and I am particularly excited about the awe-inspiring Meet and Greet reception on the USS Midway Museum (which I am sure will be full of fun and surprises), and the Andy Grammer concert on the last day. My family can’t wait to hear songs like Fine by Me, Honey, I’m Good, and Gotta Keep Your Head Up.

Our 75th convention promises to be extraordinary—a Super Bowl event—so to speak. This year, you don’t want to be one of those that chooses to sit on the sidelines, out of touch, and missing all the important industry and competitive trends being discussed.

Just a bit of advice based on SMACNA intel, I suggest you register and make your hotel reservations as early as possible as registrations are setting a record-breaking pace.

I look forward to seeing you at SMACNA’s 75th Annual Convention!

Sincerely,

Jack Knox
SMACNA President

SMACNA Endorses and Urges Action on Master Limited Partnership Parity Act

The recently introduced Master Limited Partnership Parity Act (H.R. 4118), would greatly expand financing options for energy-saving performance contracts (ESPCs), building retrofits, industrial market efficiency projects, and combined heat and power/waste heat to power (CHP/WHP) systems.

This balanced legislation would level the playing field for energy-efficient facility rehabilitation and renewable and clean-energy technology while encouraging investment in ESPCs and needed energy infrastructure projects.

This bipartisan Master Limited Partnership Parity Act (MLP) reform will expand the definition of “qualified” sources for MLP investments to include ESPCs, clean energy resources, and a variety of infrastructure projects. Specifically included are energy technologies that qualify under Sections 45 and 48 of the tax code, including wind, closed and open loop biomass, geothermal, solar, municipal solid waste facilities, hydropower, fuel cells, and CHP/WHP, to name a few.

The legislation also allows for a range of substantial building efficiency investments to qualify including energy-efficient upgrades for buildings, electricity storage, carbon capture and storage, industrial retrofits, and ESPCs. The bipartisan legislation was introduced by Reps. Ted Poe (R-2nd-Texas) and Mike Thompson (D-5th-Calif.) with key
bipartisan co-sponsors. An identical bill, S. 2005, was also introduced in the Senate by Sens. Chris Coons (D-Del.) and Jerry Moran (R-Kan.) with more than a dozen bipartisan co-sponsors.

There are approximately 140 MLPs currently being traded on major exchanges, primarily focused on energy-related industries and natural resources. Of the estimated $565 billion in MLP capital currently in the market, about $467 billion (more than 80 percent) has gone into qualifying energy and natural resources. Of that, 85 percent has been restricted to midstream oil and gas pipeline projects.

If enacted, the MLP Parity Act will balance the federal tax code to specifically allow MLP qualifying energy sources to include a long list of renewable energy sources and currently allowed investments. While the legislation narrowly failed to make the tax extender package passed earlier this year, it is one of the tax options favored to make it onto upcoming tax legislation expected by the end of the year.

Members can show their support for this legislation by contacting their members of Congress through SMACNA’s Take Action web page, smacna.info/smacn667cf.

**CEA National Issues Conference: Doing Nothing is Not an Option!**

SMACNA members, along with other specialty construction member groups in the Construction Employers of America (CEA), participated in the annual CEA National Issues Conference, May 8-10, in Washington, D.C.

The program brought together an impressive group of legislators, policy experts, and contractors to share opinions and strategies on multiemployer pension plans, infrastructure investment, paid family and sick leave, energy efficiency, tax reform, and more.

The packed 2-1/2-day agenda facilitated face-to-face meetings between contractors and legislators where all sides expressed their sense of urgency for Congressional action on pension reform and infrastructure, with a uniform opinion that doing nothing will take us all down. Rep. Norcross noted that too many of the 1,400 multiemployer plans, covering 10.6 million people, are seriously underfunded.

**Pension Reform**

Rep. Donald Norcross (D-1st-N.J.), an original co-sponsor of the bipartisan Giving Retirement Options (GROW) Act (H.R. 4997), which would authorize the use of hybrid or composite plans to strengthen the multiemployer pension plan system, addressed the group, emphasizing the urgent need to give plans the voluntary Composite Plan option.

Norcross is also a member of the Joint Select Committee on Solvency of Multiemployer Pension Plans—a bipartisan, bicameral committee tasked with finding solutions for failing plans and addressing funding issues for the PBGC by the end of November, in time for consideration in the lame-duck session of Congress.

Rep. Norcross, the only IBEW card-carrying electrician in the U.S. House, thanked the audience for hiring union men and women, saying “I go to the union hall every weekend and listen to what they have to say.”

**Infrastructure**

The need for Congressional action on infrastructure spending, was addressed by both Rep. Dingell and newly elected Sen. Doug Jones (D-Ala.). Jones stated, that like all states, “infrastructure is something Alabama would like to see.”

Dingell said she surprised people last year when she agreed to work...
New ITI Strike Force Wall Paneling Training Makes Major Projects Possible

What do architectural sheet metal contractors do when a project comes along, and they have the craftspersons, but they need to immediately increase specific skills levels to install certain types of metal wall paneling? Where do SMACNA architectural sheet metal contractors turn?

They call-in the Strike Force training instructors of the International Training Institute (ITI).

“Today’s wall and roofing assemblies are much more sophisticated and complex, and are typically designed as a system, not just individual components,” said the ITI’s Daniel McCallum, who leads the Strike Force training program. With 30 years of experience in architectural sheet metal work and business ownership experience, McCallum says he “understands systems and what our members need for training.”

“Strike Force training can be used to deliver tailored training for various types of architectural wall/roof systems,” he said. “The objective of this type of tailored training is to increase the individual’s knowledge base of a skilled worker and develop new skill sets and new techniques for existing skills so workers are more knowledgeable, effective, and efficient on the project.”

Strike Force training includes metal composite material (MCM) systems, metal roofing, insulated material metal wall panel (MWP) systems, single skin MWP systems and more. Strike Force training is also available in a wide range of sheet metal applications, Page noted. ITI works with a number of manufacturers of such systems as part of its training resources.

ITI announces its training schedule every November, but projects come up when local unions might not have training in place and no time to wait for a scheduled offering,” said IT administrator James Page. “It’s no different from when you have a wildfire and send in the hotshots. Strike Force training teams offer immediate mobilization versus something planned months in advance—we take it to another level.”

For Strike Force training, ITI identified 11 styles of architectural work from the training materials for its 480-hour, four-year program, and pulled out topics that were specific to various manufacturers. The training materials includes drawings and mock-ups.

The Strike Force program serves immediate needs by showing contractors how to apply what they already know and use new tools or techniques. Training only takes three to four days.

“We can train a crew to put a system together in 10 to 20 hours,” McCallum said. “We leave them with training, drawings, models, and an instructor.”

Strike Force Training adds another resource to about 150 Joint Apprentice Training Center (JATC) schools and SMART training centers in the U.S. and Canada. The Strike Force program has “12 Strike Force instructors who travel to provide this specialty training.”
Powering Up the Historic Power and Light Building

Retrofitting older buildings often comes with a host of challenges, and at least a few surprises. Not so much for the MacDonald-Miller Facility Solutions team that upgraded the HVAC mechanical systems in the historic Power and Light Building in Portland, Oregon.

Having served as the preventive maintenance contractor for the property, MacDonald-Miller staff were familiar with the structure and existing systems, including potential obstacles. “The timeline of the job was the most difficult detail,” said Kristen Killen, a service special projects account manager for SMACNA member MacDonald-Miller. “We got a notice to proceed with the design the first week of January 2018, with an anticipated completion date of May 15 for the first of three floors.”

The tight deadline was from the tenant WeWork, a company offering custom-shared office space in urban locations around the world. WeWork proceeds with a project only when tenants have signed to their space. When We-Work called, MacDonald Miller had to act quickly to propose, design, and immediately commence work on schedule to build this nearly $2-million, 50,000-square-foot, fast-tracked project.

“It really benefits being a one-stop-shop design-build contractor,” Killen added. “That made it easier, because we had more control over all the processes.”

MacDonald-Miller is the largest service provider in the Northwest. They can service every part of a building including equipment, building automation, and conduct energy studies/incentives.

“Being a regional contractor like this with a true design-build culture makes MacDonald-Miller different,” Killen said. “We know their buildings inside and out from our service relationship and we can use that knowledge with our special projects team and in-house engineering to identify problems before the customer even knows about them. We can help plan future growth or replacements, and truly make their buildings run better.

Justin Kopta, a project manager with MacDonald-Miller, made sure to get ahead of potential issues with a lot of in-person coordination.

“As a team working under pressure, it is critical that everyone communicates,” he explained. “Appropriate individuals need to be made aware of issues as they arise, and questions need to be answered as quickly as possible to prevent schedule disruptions. During these pressure situations, I prefer to get frequent progress reports from our field crews to ensure that the crews have everything they need to succeed.” Such communication was important to coordinate crossing trades, for example, when everyone was working around an elevator bank in the center of the building.

MacDonald-Miller also updated an existing hydronic system on three separate floors by upgrading the existing original hot water/chilled water perimeter radiators with four-pipe heating hot water and chilled water fan coil units on the perimeter, and variable air volume (VAV) boxes for the internal zones. Additionally, they upgraded the existing pneumatic controls systems with a new Honeywell WEBs building automation system.

Killen attributes their success in landing this job to being involved in the preventive maintenance of the Power and Light building’s boilers and chiller.

“We replaced two 200-ton chillers in the basement with a new 400-ton chiller last summer with property management company JLL,” she said. “They recommended us to their new tenant’s general contractor HST Construction.”

Now Kopta, Killen, and the rest of the MacDonald-Miller team are well underway with a second phase of the project—upgrading mechanical systems for other floors in the Power and Light Building.

“We’ve done the work, so we know what needs to happen and the work moves faster,” said Kopta. “Working under pressure often underscores the strength of our team and commitment to our customers.”
The Beauty of Maintenance Programs and Why Contractors Should Offer Them

Many residential service business can start, grow, and profit handsomely by implementing a solid maintenance agreement program. It will produce work and steady cash flow year-round. But starting a successful maintenance program takes commitment and consistent focus.

Once a residential firm begins and continues to execute they should experience more:
- Consistent cash flow.
- Work all year long.
- A loyal, growing customer base.

There’s a big bonus with a planned maintenance program. In 10 years, the company would have the cash saved up that they can use, as well as a valuable client base. They will also have predictable revenue and cash flow that a potential purchaser would covet. If an owner wants to sell their business, they will receive a premium price for the work they have put into it via maintenance agreements.

Maintenance Agreements Cultivate Trust and Loyalty

Maintenance agreements are the real equity of a residential company. With maintenance agreements, owners build trust and loyalty with their clients.

During planned maintenance visits the technician should always educate the client. If the client’s heating and cooling equipment is reaching the end of its expected lifespan, he or she should tell this to the client.

Replacing older equipment can make economic sense and be a smart investment. Let the client make the choice. If the trust is there, the client will probably take the suggestion and at least look at the options presented.

The more maintenance agreements a company has, the larger the loyal, committed client base. And this evens out revenue seasonality. The valleys won’t be as low because the company has work to do in taking care of maintenance for their agreement clients.

How many agreements should a company have? As many as possible. Aim for 1,000 agreements for every $1,000,000 in residential service and replacement sales. (This does not include new construction sales or commercial sales.)

The magic number is 3,000 agreements. As the company approaches this number and beyond, they will see more work flow, more even cash flow, and a more stable field employee base. The more maintenance agreements the more loyalty, stability, and cash flow the business will experience.

One last benefit of maintenance agreements: The company can be its own bank. Every month, when accounting receives the maintenance revenue, they should deposit that revenue in an interest-bearing savings account. This decreases the company’s dependence on a bank line of credit. These funds accumulate quickly and can be a source of funding when the company is short of cash.

Maintenance agreements can build equity in residential companies by growing the business, cash flow, loyal customers, and intrinsic value. What’s not to like?

Editor’s note: Ruth King contributed to the article and is the author of SMACNA’s Successful Customer Service Practices for HVAC Service and Residential Retrofit and Service Operations Management Program. Find them in SMACNA’s store: www.smacna.org/store.
Hawaii Hotel Co-gen Plant Produces Electricity From Waste Heat

A new co-generation plant is supporting energy conservation and savings by producing electricity and hot water for a beachside hotel in Waikiki, Hawaii.

SMACNA contractor Alaka’i Mechanical Corporation (AMC) of Honolulu has been working on the new co-generation and central plant upgrade at the Sheraton Waikiki Hotel in Honolulu since 2016. Completion of all phases is scheduled for early August 2018. AMC is a member of SMACNA’s newest chapter—SMACNA Hawaii.

“To my knowledge, this co-generation plant is the largest in the state, with a maximum capacity of about 2.2 megawatts (MW) when the two units are running,” said Darryl Kanno, AMC’s vice president-business development.

“In a nutshell, the co-generation equipment, electric generators, will burn synthetic natural gas (a gas fuel produced from fossil fuels such as lignite coal, oil shale, biofuels, or renewable electrical energy) to produce electricity for the hotel,” said Kanno. “The waste heat from burning the gas is then used to make hot and chilled water for the hotel. Waste heat from the absorption chillers’ condenser water will also be used for pool heating.”

A developer sold the idea of a co-gen project to the hotel owner and brought in Penn Power Group (PPG), who brought AMC onboard, Kanno said. “AMC, as the acting general contractor, is responsible for design-build and installation, with help from PPG.” PPG provided the equipment and chillers. AMC’s piece of the project was a little over $8 million, he said.

Phase one involved constructing a new hot water generation and storage plant in a new location. “The sheet metal work involved installing two new flues, one for each of the two existing boilers in new termination locations. The installs involved about 250 feet of 16-inch inside diameter (ID) flue, and various elbows and tees with 4-inch-thick insulation,” said Kanno. AMC installed Selkirk Metalbestos 316 inner and outer walls for the rerouted boiler exhaust flue.

The hot water storage tanks were removed in the second phase to make room for the new co-generation equipment. Sheet metal work in phase three included installing 16-inch ID flue from the co-generation units to the oxidation catalysts, heat exchangers, and silencer to the existing flue. Providing co-gen to the oxidation catalysts (OCs) involved about 102 feet of 16-inch ID flue and fittings with 4-inch-thick insulation.

In phase four, AMC installed a mechanical screen, also called architectural louvers, to conceal radiators on the roof that eject excess heat from the co-gen equipment. The fifth phase involved installing 8-foot-high, 4-inch-thick sound panels, which mitigates the noise generated by the co-generation units. Inside the enclosure, the sound is about 110 to 120 dBA (a-weighted decibels) with the two units running. Outside, the sound is about 85 to 90 dBA in four walls, each 25 feet long, and two doors for the enclosure along with intake ventilation ductwork from outdoors.

“The co-generation units are currently operational, generating electricity and producing hot water for the hotel,” said Kanno.

The electric utility handled phase six, and AMC is now in the seventh phase, which involves replacing two 1,400-ton centrifugal chillers with two new 1,500-ton centrifugal chillers and a new 300-ton absorption chiller.

“There were so many challenges that accurate three-week schedules were not possible for a majority of the project and scheduling was constantly revised,” Kanno said of the complex project. Their primary challenge included making the least possible impact on the hotel, so it could remain operational throughout the work.

However, “having good subcontractors on this project made it a lot easier,” Kanno said.

Thanks to AMC’s co-generation installation, the Sheraton Hotel co-generators are humming along, creating electricity and hot water for its guests on Waikiki Beach.
VISUALIZING AND DESIGNING A BETTER BUILDING

He says that VDC helps develop trust between partners and gets them invested in seeing the project as a whole is successful, not just delivering on their individual areas of responsibility. Zahner authored the SMACNA white paper Virtual Design and Construction Practice: Benefits, Challenges, and Proven Strategies for AEC Teams and serves as chair of SMACNA’s Architectural Sheet Metal Council Steering Committee.

“You are collaborating instead of coordinating,” Zahner says.

“Because this is a collaborative modeling effort, all the smart people are sitting at the table at the same time seeing the issues. It is getting people in touch with issues immediately.”

The Zahner team used VDC to create The Chrysalis Amphitheatre at Merriweather Park located in Symphony Woods in Columbia, Maryland. The Chrysalis is a multi-purpose performance center designed by Marc Fornes with Living Design Lab. Zahner manufactured and installed the exterior structure and skin system.

The Chrysalis is made of tubular steel knitted together to form a structure that houses a performance stage. Completed in the spring of 2017, its name references the transitional stage of a butterfly; its form resembles the enormous roots of the cypress tree, supporting an array of performances and events.

Some contractors are even using sophisticated virtual reality applications as part of their VDC processes.

Among its many benefits, VDC facilitates communication and cooperation between the participating stakeholders in a project right from the start, according to Tom Zahner, chief operating officer of SMACNA company A. Zahner Co., Kansas City, Missouri, an architectural metalwork company considered to be a pioneer in VDC.

The VDC Process: Communicating and Prefabricating

VDC starts with building information modeling (BIM), where all partners on a project participate in creating a digital model of the facility. The participants then interact on a virtual project site to simulate the construction process.

“VDC is associated with prefabrication,” says Kyle Watson, Zahner’s VDC technical lead. “You are also doing the coordinating, the planning ahead of time with the model provided to us—taking digital files from
all the stakeholders and making sure what we want to do with them, so it meets all our deadlines on time and on budget.”

The collaborators work together to achieve a specific level of development (LOD) for their model, which measures its reliability. A higher LOD indicates the participants have a greater degree of confidence in how different systems within the project will work with each other.

That includes parts such as supports and connections necessary for coordination between the different systems in the project. If the LOD is high enough, the partners can identify potential problem spots in the project and work to address them before they start construction.

“We build all the checks, all the quality control and fabrication details, so we are doing everything with a pretty high degree of accuracy,” Watson says. “It saves a lot time.”

The final 3D model offers a foundation and reference point for all decisions throughout the project. Minnesota-based SMACNA sheet metal contractor MG McGrath Inc. has used VDC on hundreds of projects since the early 2000s.

Around the company, the final model is referred to as “the single source of truth” for a project, according to Mike McGrath, the company’s president and a former member of SMACNA’s Architectural Sheet Metal Council Steering Committee. “Everything is generated from that model,” he says.

Benefits of VDC: Collaboration, Clarity, Purpose

In addition to fostering a greater sense of collaboration and common purpose among the contractors working on a construction project, Tom Zahner cites improved communication as one of VDC’s primary benefits. Because the parties are all using a shared platform, it offers greater clarity between the participants. The growth of cloud-based computing has further streamlined information-sharing between collaborators.

VDC also enables contractors to plan out their timelines and budgets for projects with a greater degree of precision, according to McGrath. Those improvements trickle down to smaller tasks on projects, such as measuring dimensions in the field, he says.

Arguably the biggest plus for VDC is the ability to identify problems on the front end of a project before work is actually done on it. “We see the challenges that we may not see on a (two-dimensional) drawing,” McGrath says.

Ultimately, that reduces the risks associated with a project, according to Zahner. In turn, he says, that yields lower costs and shorter durations. “Change orders become obsolete,” Zahner remarks.

“The things you can do with 3D modeling are so powerful,” Watson says. “If you can get people to agree on everything, you can fly on a project.”

In terms of potential pitfalls, McGrath warns that maximizing the value of VDC requires “100 percent buy-in from all stakeholders.” That can be difficult, especially when the contractors on any given project tend to come from a variety of trades.

On the other hand, McGrath notes that VDC software systems have become more affordable in the last 10 years. They also offer better customization capabilities now, he says, which makes VDC even more effective.

So, look for the use of VDC to become even more widespread on construction projects in the near future, says Zahner. “It greatly enhances your ability to define and engineer the right product for both you and the customer.”
“Focus on What’s Important”
SMACNA Board Member:
James M. Morgan of Ashland, Massachusetts

When SMACNA Board member James M. Morgan, president and CEO of Worcester Air Conditioning LLC, Ashland, Mass., bought the company ten years ago, he had little experience in construction, but plenty of experience as a successful entrepreneur. With a history of running several businesses, he credits the technical expertise of his staff with helping make his transition to construction a success.

Construction is the industry Jim considers his favorite. “It is very much people business, populated by practical individuals whose job is to execute every day. Another reason I enjoy it is that the products we produce are tangible, easy to be proud of, and long-lasting.”

Worcester Air Conditioning has a fully-automated production facility to assist with fabricating and installing ductwork for commercial and industrial construction projects around New England. They use building information modeling (BIM) and integrated project delivery (IPD) tools on every project, which, Jim says, means, “the more complex the project the better.”

We asked him to share what excites him about the industry and the advice he would pass on to those new to the industry.

• **The best business advice you ever received:** A board member once told me I should never have any meeting that exceeds two hours. He advised me to always pare down the agenda and focus on what is important.

• **Advice you give newly-hired employees:** If you focus on the right thing for the company, your decisions will also be good for customers and staff.

• **The most rewarding part about being in this industry:** I think it is one of the few industries left where relationships are important.

• **The most challenging part of the industry:** Ensuring we are the best company possible every single day.

**• What most people first notice about your shop and office:** It is clean and organized. We are big lean practitioners. We believe that everything has its place and all equipment and tools should be properly organized to make the workplace safer and more efficient.

• **The technology you are the most excited about:** Putting iPads, iPhones, and highly portable laptops into the hands of our field foremen and teaching them the ease with which they can access our data stored in the cloud and on our servers.

• **Something you look forward to:** Every summer, I look forward to putting a boat in water and enjoy wake surfing with the family.

• **Some of your outside interests:** Boating, golfing, playing tennis, and reading novels. Every summer, I look forward to putting a boat in water and enjoy wake surfing with the family.

• **Sports teams you cheer for:** I am a total Boston Bruins fan and ice hockey devotee. I am a total Boston Bruins fan and ice hockey devotee.

• **What you are most proud of:** My two college-aged children.

Morgan was appointed to the SMACNA’s Board of Directors last July and is serving a two-year term. Previously, he was president, CEO, and director of ClearSource Inc.; founder, editor, and publisher of Colonial Publishing; and senior vice president of Trifoods International Inc.

On the national level, Morgan is a member of SMACNA’s HVAC Contractors Council Steering Committee and the Congressional Insiders Club. He supports SMAC PAC at the Chairman’s Club level. Locally, he is president of SMACNA Boston and is on the chapter’s Scholarship Committee. Also, he was elected to serve on the Local 17 JATC board.

Members can learn about Worcester Air’s use of technology at smacnews/worcesterair.

**To help influence the industry, members may join a SMACNA committee by visiting the “Board/Committee Application Forms” web page smacnews/login37353.**

SMACNA Adds Senior Project Manager

Patrick J. Brooks, MBA, PE, new senior project manager with SMACNA’s Technical Resources Department, brings more than 30 years of industry experience to SMACNA National. With his extensive knowledge, Brooks is an exceptional resource for SMACNA members and staff.

As a senior-level manufacturing and product development expert, Brooks has developed successful production, productivity, sales, and market share growth for industry-leading companies such as United McGill Corp. and Eastern Sheet Metal Inc., both located in Ohio.

Specializing in innovative solutions, Brooks has increased production and performance levels by leveraging new leadership philosophies including lean production principles and Kaizen improvement methods. His depth of experience includes managing production plants, product development, fabrication, and sales teams.

At United McGill, Brooks directly managed three plants and directed production managers at seven plants across industrial and mechanical engineering, procurement, and plant management, while negotiating union contracts, managing transportation logistics, handling cost analysis, and developing cost and sales pricing strategies.

Brooks also served as general manager, northeast operations, with McGill Airflow in Bennington, Vermont, where he implemented transformative business plans and managed sales and plant operations.

Brooks earned his master of business administration, master of science, and bachelor of science degrees from The Ohio State University and served as an instructor in duct design and acoustics at the University of Wisconsin, Madison. He is licensed in engineering in the state of Ohio. A member of ASHRAE, he is chair of the Duct Design Guide Committee. He serves on the board of the Spiral Duct Manufacturers Association.
Welcome 2018 Associate Members

Being a SMACNA Associate Member increases your visibility and opportunities to engage SMACNA members.

To learn more about becoming an Associate Member, visit smacna.org or contact Scott Groves at sgroves@smacna.org.

MEMBERS

Welcome New SMACNA Members
SMACNA welcomes these new members, including some from the newest chapter, SMACNA Hawaii:

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Meets with...
Rep. Dave Loebsack of Iowa

Paul Elgatian (right), executive director of the Iowa Sheet Metal Contractors Association, discussed issues facing the construction industry with Rep. Dave Loebsack (D-2nd-Iowa) at a meeting on Capitol Hill during the CEA National Issues Conference in Washington, D.C.

They discussed pension reform, the Giving Retirement Options to Workers (GROW) Act in support of composite plans, and retrofitting energy efficiency issues. Rep. Loebsack also expressed interest in how the industry’s apprenticeship program worked and the types of continuing education available for sheet metal and HVAC workers.

June 2018 11
Becoming a Person of Influence with New Advanced Project Managers Institute

SMACNA’s new Advanced Project Managers Institute is being held in Raleigh, N.C., this October. The course takes project managers beyond the basics and helps them learn how to proactively lead others, work from their personal strengths, manage productivity, and resolve project issues more effectively.

“This course fills in the gaps and goes up to the next level,” said Andrew Patron, senior consultant with FMI. Patron, who has already taught the Project Managers Institute and is the primary developer of the advanced course, said “project managers should attend if they want to continue to understand how to be a more effective project leader.” He added, “managers will work in teams to learn more ‘hard skills’ and will study leadership by developing their influencing skills.”

Students will utilize real case studies to measure the impact of productivity on profits, track project lifecycles using key performance indicators, forecasting, and change order management. In addition, the course will show students how mentoring and coaching, performance management; conflict management; and negotiation skills can increase project management performance.

“We are using a case study that will focus on a sheet metal project. This should create a more realistic experience for the participants,” Patron noted. “To successfully pass the course, students must prepare as a team using real-world project documents to reinforce the learning.”

The course is designed for project managers with two or more years of project management experience, as well as graduates of SMACNA’s Project Managers Institute.

Participants will have the chance to practice new skills learned during the program and receive individual performance feedback and coaching. “Self-awareness and objective personal feedback is very helpful for those participants who want to improve their leadership and management effectiveness,” Patron said. “We will be giving them at least two assessments to support this time in the class.”

Participants will also develop their own personal action plan. “The most important part of the program is the action planning session,” Patron said. “We walk them through the action planning process and help them select the most impactful ‘next steps’ in their development. They will leave with a personal plan of how they intend to implement what they learned when they return home.”

Registration will be opening soon. Visit SMACNA’s Events and Education web page for the latest updates. For more information, contact Bridgette Bienacker, SMACNA’s director of business management and membership at bbienacker@smacna.org.

LABOR

Members: Have a Say in SMACNA’s Economic Response Plan

Recent history demonstrates that, more often than not, economic corrections are a certainty—and hindsight proves that the time to prepare for the next downturn is after a long period of sustained growth as we are now experiencing.

SMACNA is requesting that members share their thoughts and experiences by July 27 with their chapter executives on what labor and management need to work on together, so the industry can survive and thrive during challenging economic times.

Both small- and large-sized businesses develop strategic plans that take economic downturns into account—so too should local industry leaders. SMART General President Joseph Sellers and SMACNA President Jack Knox have therefore asked their local business managers and chapter executives to collaborate in an effort to work collectively on this important issue.

During these discussions, business managers and chapter executives should address the issues that contractors and local areas can work on to prepare for an inevitable downturn in the economy and the construction market—whether the downturn happens next year, in five years, or fifteen.

Just as it would be impractical for a firm to wait for a natural disaster to take place before preparing for one, members’ local areas can’t afford to wait for a change in the economy to develop a response plan.

Members are urged to engage in this process and share their thoughts with their chapter executives, so labor and management can work collaboratively to find solutions to this issue.

Members may find their chapter contacts under “Chapters” on the SMACNA website, smacna.org. Members can read the Knox and Sellers memo on smacnews/loginee0ca.
with the Trump administration on infrastructure funding. “We have to do something about infrastructure in this country—it is broken.”

Rep. Dingell did focus on the Democrats’ “Better Deal” plan, which would invest $1 trillion in infrastructure. She urged attendees to return home and “scream to their legislators about the broken infrastructure and hold them accountable.” Sen. Jones agreed, saying, “it is time to put aside partisan issues and find common ground and expand opportunities for all.”

**Problem-Solvers Caucus**

In a refreshing evening of bipartisanship, Reps. Josh Gottheimer (D-5th-N.J.) and Tom Reed (R-23rd-N.Y.), co-chairs of the bipartisan Problem-Solvers Caucus took to the mic at the All-Association Congressional Reception on Wednesday, May 9, and jovially explained their personal friendship as legislators, as well as the purpose of the 48-member bipartisan group which is split evenly among Democrats and Republicans.

Admitting that partisanship had gotten out of control, this group is developing a culture of trust and is committed to getting to “yes” on important issues, realizing that it is far too easy to get to “no,” the Congressmen explained. “Let’s focus on what we can get done. People want us to get things done.”

**Military Construction, Davis-Bacon, and Apprenticeship**

On the final day of the conference, the attendees heard from Rep. Don Bacon (R-2nd-Neb.), multiemployer pension experts, and a U.S. Department of Labor (DOL) deputy outlining the DOL’s apprenticeship policy review process.

Rep. Bacon, a former U.S. Air Force general now serving on the House Armed Services Committee, discussed base construction plans and the need for skilled labor and experienced contractors on military construction.

Well-known to SMACNA members, multiemployer pension experts Randy DeFrehn, former director of the NCCMP, and Cary Franklin, Horizon Actuarial, presented a detailed and methodical case for the GROW Act to strengthen multiemployer plans to prevent further weakening of the plans, employers, and the Pension Benefit Guarantee Corporation (PBGC).

DOL Deputy Molly Conway closed the conference, explaining the Trump Administration’s Apprenticeship Task Force, its goals, and progress to date. Ms. Conway also spoke of the skilled labor needs for the nation, Department efforts to establish a long-term policy to increase apprenticeships and expressed hope that the task force report will support industries and workers seeking a skilled training option to achieve a middle-class lifestyle.

**Stay Informed. Stay Active.**

All members, even those who did not attend the CEA National Issues Conference, can make a difference on issues that matter most to our industry by reaching out to their Members of Congress through SMACNA’s Take Action webpage. SMACNA works every day for members on Capitol Hill, but it is members’ action supporting SMACNA’s legislative objectives that pays off for SMACNA and members’ businesses.
Executive Leadership Development Program is Developing Future SMACNA Stars

Industry executives and business owners from around the country learned how leaders can effect meaningful change in their organizations during SMACNA’s recent Executive Leadership Development Program at the University of North Carolina at Chapel Hill.

“You cannot lead others unless you first know yourself and your style,” said Carol Duncan, chief executive officer of General Sheet Metal. From this course, “I learned how to successfully implement change and how to capitalize on my company’s unique brand and experiences to attract and retain talent to my business.”

Working alongside senior industry leaders and through group discussions and interactive exercises, participants learned how to manage change, how their leadership style impacts others, how to create a purpose-driven organization, and how to use power and influence to manage conflict and positively influence others.

“This program was designed specifically to maximize the leader’s contribution to their company and to prepare him or her for future advancement,” said Heather Freeland, program director of the UNC Executive Development program.

The course helped participants develop new ways of thinking and increase capabilities critical to their success such as “developing the talent within their organizations, leading critical change, and a deliberate and strategic approach to leading others,” Freeland added.

“SMACNA already provides a deep portfolio of training opportunities for contractors’ operational personnel, from foremen to project managers,” said Vince Sandusky, SMACNA chief executive officer. “This program is specifically designed for executive team members looking to fully develop critical leadership skills that impact the success of the entire business enterprise.”

The four-day program was led by Mabel Miguel, MBA, PhD, professor of organizational behavior and director of the Global Business Center Kenan-Flagler Business School; executive trainer Jennifer Giordano, MA, EdM; and Matthew Pearsall, PhD, UNC associate professor of organizational behavior.

Watch for the 2019 Executive Leadership Development Program, which is planned for next spring.

Know How to Protect Your Workers from Falling

Falls are one of the most common causes of serious work-related injuries and deaths in construction—yet are very often preventable.

By law, employers must set up their work places to prevent employees from falling off platforms, ladders, and elevated work stations or into holes in floors and walls. The height at which fall protection is required varies by workplace (shops and construction sites) as well as by state regulation.

OSHA also requires that, regardless of the fall distance, fall protection must be provided when working above dangerous equipment and machinery.

To prevent employees from being injured in falls, members need to:

• Ensure ladder safety is part of an effective fall-protection program.
• Guard every floor hole, including skylights, that a worker can accidentally fall through, using a railing and toe-board or a floor hole cover.
• Provide guardrails and toe-boards to prevent workers from falling and being injured if a worker can fall into or onto dangerous machinery or equipment (i.e., a vat of acid or conveyor belt), regardless of height.
• Provide additional fall protection that may be required on certain jobs, including safety harnesses and lines, safety nets, stair railings, and hand rails.

OSHA requires employers to:
• Provide working conditions that are free of known dangers.
• Keep floors in work areas clean and dry.
• Provide required personal protective equipment (PPE) at no cost to workers.
• Train workers about job hazards in a language they can understand.

For more information on fall protection, visit the OSHA Fall Protection web page or contact Mike McCullion, SMACNA’s director of market sectors and safety at (703) 995-4027 or mmccullion@smacna.org.
Financial Boot Camp: Taking the Mystery Out of Financials

Participants at SMACNA’s June Financial Boot Camp in Tempe, Arizona, learned that good financial health is critical to a company’s survival.

“I try to take a lot of the mystery out of the financial process, so attendees can play with financial information, and really make it work for them,” said John Murdough, CPA, MBA.

“Over the course of several years teaching this course, I find the most effective objective is to teach fundamental financial concepts and to give non-financial managers, owners, and accountants enough suggestions, examples, and direction that they can apply these practical concepts in their businesses.”

By having attendees analyze their own company’s finances while examining case studies, participants learned how to better manage their businesses.

“I have a better understanding of how to interpret balance sheets and financial statements,” noted Paul Popowich of Crosstown Heating and Ventilating (Calgary) Ltd. “I now have more confidence when dealing with our bonding company and bank.”

“We went over a hypothetical case with a fictitious construction company. This was eye-opening because it showed how growth should not be mistaken for success.”

SMACNA offers a variety of university-level business and financial programs to help members master running a business. Members can learn more and sign up on SMACNA’s National Education web page.

Business Insurance for Contractors

An Interview with Jack West of Federated Insurance

SMACNA is partnering with Premier Partner, Federated Insurance, to offer SMACNA members a wide range of coverage tailored specifically to the needs of contractors. Federated is offering specialized coverage to members including property and casualty insurance, workers compensation insurance, bonding, and errors and omissions protection. Headquartered in Owatonna, Minnesota, the company has more than 2,300 employees.

SMACNews asked Federated Insurance National Account Executive Jack West how they can meet SMACNA members’ business insurance and risk management needs.

Tell us about the history of Federated Insurance:

In 1904, a small group of Minnesota business owners, concerned about the high cost of fire insurance, formed a mutual fire insurance company. A group of farm implement dealers also were addressing the high cost of insurance, and the two groups formed what would become Federated Insurance.

During the 20th century, Federated became one of the country’s first multi-line commercial insurance providers, developing a national presence with a strong financial foundation. Today, we are a leading provider of insurance products and risk management services.

We believe our value is measured by the success of our clients. Our mission statement “It’s Our Business to Protect Yours” sums up the reason we exist.

How are insurance claims handled?

We operate through a direct model, which gives us a unique advantage. From the sales process to claims service, SMACNA members can expect to work directly with Federated employees.

We provide fast, fair, and direct claims service with highly trained adjusters, appraisers, and rehabilitation specialists. We have claims offices located throughout the U.S., including Owatonna, Atlanta, Dallas, Indianapolis, Kansas City, Minneapolis, Phoenix, Sacramento, and Tampa Bay.

How do you help contractors determine if their current insurance policy is suitable?

Our representatives can help members with every aspect of their insurance requirements, custom designing an insurance and risk management program that is tailor-fit to meet their business needs.

We help build members’ insurance programs from the ground up rather than just copying their current coverages. Contractors should understand what their policies include and what is excluded. Knowing this upfront helps owners decide what to cover rather than finding out about an exclusion when filing a claim.

How can you help with risk management policies?

We offer loss prevention training needs for owners and risk managers through the Federated Insurance Risk Management AcademySM.

What additional insurance packages do you offer?

We can handle contract bonding through our wholly owned subsidiary, Granite Re Inc.

How can members establish a relationship with Federated Insurance?

Members can contact their local Federated marketing representative directly, and with 550 representatives around the country, we are never far away. Members can visit the “Locate Your Representative” section on Federated Insurance’s home page or call our Client Contact Center (888) 333-4949 to learn more.

Federated also provides SMACNA members with a complimentary review of their current insurance coverage. For more information, contact Jack West at (800) 533-0472.
SMACNA CALENDAR

JULY 2018
July 15
Convention Registration Discount Expiration Date

SEPTEMBER 2018
Sept. 9-11
NJAB
Minneapolis, Minnesota

OCTOBER 2018
Oct. 8-10
Advanced Project Managers Institute
Raleigh, North Carolina

Dec. 2-4
Council of Chapter Representatives
Miami, Florida

Dec. 4
Industry Fund Seminar

JANUARY 2019
Jan. 27-29
Chapter Executive Institute
Austin, Texas

MARCH 2019
March 3-7
Business Management University
Tempe, Arizona

March 12
Collective Bargaining Orientation
Dallas, Texas

March 14-15
Association Leadership Meeting
Dallas, Texas

MAY 2019
May 19-22
Financial Boot Camp
Tempe, Arizona

FUTURE SMACNA CONVENTIONS

Oct. 14-17, 2018
75th Annual Convention
San Diego Marriott Marquis and Marina, San Diego, California

Oct. 20-23, 2019
76th Annual Convention
JW Marriott, Austin, Texas

Sept. 27-30, 2020
77th Annual Convention
The Broadmoor, Colorado Springs, Colorado

Front cover photo courtesy Frank Hecker.