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SMAC NEWS

Introducing the 2021-2022 Board

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CAPITOL HILL UPDATE

Infrastructure Law a Big Win for SMACNA Contractors

On Monday, Nov. 15, President Biden signed into the law the largest infrastructure investment package seen in decades, the impact of which will be felt across the country. The SMACNA-supported $1.2 trillion law, The Infrastructure Investment and Jobs Act (IIJA), provides continued funding for infrastructure programs and also includes $550 billion over 5 years in new funding for physical infrastructure. It includes not only money for highways and bridges, but also for other transit spending, water infrastructure, airport projects, investment in energy infrastructure, and broadband. It expands Davis-Bacon provisions to energy-related work. SMACNA contractors can look forward to years of projects in every state that will improve quality of life, increase safety and boost the economy. Specifically, the new law includes $110 billion for roads, bridges and major projects; $39 billion for transit and $66 billion for rail; $65 billion for broadband; $65 billion for the electric grid; $55 billion to upgrade water infrastructure and $25 billion for airports.

The bill passed the Senate months ago with 19 Republican votes but stalled in the House where approximately 40 progressives were holding it hostage in an effort to secure a vote at the same time on the social infrastructure, Build Back Better. The final House vote included a "yay" vote from 13 House Republicans and lost only 6 Democratic votes from progressive members. Republican supporters of the infrastructure bill included many Congressional members with whom SMACNA has worked with closely on this and other issues. SMACNA members and chapters who diligently contacted Members of Congress on both sides of the aisle to get this bill across the finish line should be proud.

Over the coming months and years, the money will go out through federal agencies to states, which will have significant discretion over which projects will be funded. While the Administration expects spending to be pushed out with as little delay as possible, the Administration will face challenges getting funds out. The President signed an executive order that establishes an "Infrastructure Implementat ion Task Force" to coordinate implementation across the federal government. The task force will be co-chaired by Brian Deese from Biden's National Economic Council and Mitch Landrieu, former mayor of New Orleans. The job of the task force will be oversight of moving the funds out expeditiously and stopping fraud and abuse.

Build Back Better Passes the House

The infrastructure bill was part one of the Biden domestic agenda. The House passed part two, a 10-year, $1.8 trillion Build Back Better Act (BBB) social infrastructure package on November 21. The bill's future in the Senate is uncertain as it is not expected to get any Republican votes and the reconciliation process that will be required necessitates the vote of all 50 Democrats. As noted above, two Democratic Senators have opposed the cost and some of the policies in the House-passed bill. Negotiations are on-going and although Senate Majority Leader Schumer said he hopes to have a vote by Dec. 13, the path forward is not clear.

Government Shutdown Averted — Barely

At the last possible moment, the Senate passed a stopgap spending bill keeping federal government funding at current levels through Feb. 18, narrowly averting a government shutdown. The previous stopgap measure was scheduled to expire on Dec. 3. President Biden is expected to sign it expeditiously. A small group of Republican Senators tried to tie the funding measure to a failed amendment (48-50) to block the Biden administration's efforts to mandate vaccines for employers with 100 employees or more. The absence of two Republican Senators spelled failure. Some Republican Senators noted that winning the vote at the cost of a shutdown might have unwanted backlash. ▼

FROM THE PRESIDENT

Al LaBella

Did You Get Better Today?

For those of you who attended SMACNA's Annual Convention in Maui, Hawaii, you know how good it was to be back together, networking and enjoy the educational and thought-provoking sessions offered by SMACNA. The transition to in-person meetings was a pleasant one.

Transitions are a part of life, and we are all experiencing more than our fair share now whether its economic, personal or professional. But it is our adaptability that has made our industry thrive during the pandemic and during this emergence back to a "new normal." If I have learned anything, it's to trust transitions and look to them as opportunities.

The pending retirement of Vince Sandusky, CEO of SMACNA, is an opportunity for his successor, Aaron Hilger (who will assume the CEO responsibilities on Jan. 1, 2022) to bring a fresh perspective to SMACNA's industry stewardship and service. I look forward to working with Aaron on a variety of issues, none more important to me than engaging, educating and preparing the next generation of contractor owners, presidents and CEOs.

These future leaders will take the reins in an environment that is more competitive than ever, and they must have the knowledge and skills necessary to run a technologically advanced and highly efficient business. SMACNA should play an instrumental role in preparing the next generation to run our industry.

My transition to SMACNA President after two amazing years with Angie Simon serving in this role is my opportunity to help our industry grow more competitive. My deepest gratitude goes to Angie for her leadership, knowledge and guidance — past, present and in the future. Her commitment to improving our industry and making us all more competitive is pure selflessness that we all should recognize and applaud.

The year ahead will be an opportunity for me to challenge all our members with the question one of my mentors used to ask to challenge me, "Did you get better today?" This question has motivated me most of my life. I make every attempt possible to answer that question each day with, "Yes, I did."

My advice to every SMACNA member is to challenge yourself to get better each day. At the end of each day, ask yourself, "Did I get better today?" Learn something new and useful that will make some aspect of your business more competitive. Sharpen a management or business skill you know needs some work. At the end of the day, it's you and that person staring back at you in the mirror, so make the most of each day by challenging yourself to improve. ▼

Sincerely,

Al LaBella, SMACNA President

THUMBS UP

Aaron Hilger Named CEO of SMACNA

Beginning Jan. 1, 2022, Aaron Hilger will assume the role of SMACNA's CEO upon the retirement of Vincent Sandusky, who has been the association's CEO since 2008.

Serving as executive director of SMACNA Rochester and SMACNA New York State, Hilger brings more than two decades of leadership experience to SMACNA. He plans to advance the association's mission of creating a competitive advantage for members while also serving as an advocate for contractors. ▼

Key highlights from FMI's 4th Quarter, 2021 North American Engineering & Construction Outlook:

- Total engineering and construction spending for the U.S. is forecast to end 2021 up 3%, compared to up 6% in 2020.
- Strong growth across the residential sector, especially within single-family and improvements, will continue to uphold industry spending levels in 2021. No segments within nonresidential building or nonbuilding structures are expected to realize spending growth exceeding 4% this year.
- Commercial, health care, manufacturing, sewage and waste disposal, and water supply are all expected to end the year with low growth, between 0% and 4%. While these low growth rates are considered stable, they are now meeting or slightly below anticipated inflationary levels for 2021.

The latest Nonresidential Construction Index (NRCI) feedback suggests ongoing, albeit challenged, optimism heading into the fourth quarter of 2021, at 53.8, down from 59.7 in the quarter prior. The NRCI reflects short-term weakening economic and industry sentiment but remains expansionary and suggests increased opportunities ahead.▼

Back on track

Landmark train station is reborn thanks to Ford Motor Co. and CASS Sheet Metal

At 11:30 a.m Jan. 5, 1988, an Amtrak train left the Michigan Central Station for the last time, bringing 75 years of passenger service in Detroit to a permanent halt.

It seemed like the end for the station, a National Historic Landmark that in its heyday brought thousands of new residents each day to the city to look for work in the city's auto plants and parts factories.

Fast forward to 2018, when the Ford Motor Co. announced that it was buying the facility, its adjacent 13-story office tower and the surrounding buildings with the intent to spend $740 million restoring the abandoned station and making it their heart of an "innovation hub" where 2,500 employees would work on autonomous and electric vehicles.

Among the many construction companies working on the station is SMACNA member Custom Architectural Sheet Metal Specialists of Detroit. Better known as CASS Sheet Metal, CASS is no stranger to high-profile projects in the region. The company's architectural portfolio includes the Michigan State Capitol and Perry's Victory and International Peace Memorial, a 350 foot-tall Ohio tower commemorating the Battle of Lake Erie during the War of 1812.

Christman-Brinker, the train station's construction manager, awarded CASS an approximately $2 million contract to fabricate and install a new, historically accurate double-lock batten-seam copper roof above the main waiting room, and a 8,000-square-foot, standing-seam double-lock prefinished Galvalume roof above the adjacent concourses.

Originally designed in 1912 using the ornate Beaux-Arts style by some of the same architects who were also involved in the construction of Grand Central Terminal in New York City, the Michigan Central Station features multiple copper roofs including 20 copper-framed skylights in its barrel-vaulted ceiling. There are also several massive floor-to-ceiling windows. As part of the refurbishment, which is scheduled to finish by the end of next year, everything from the masonry to the ornamentation is being recreated or restored.

Overseeing CASS' work on the station is company owner and President Glenn Parvin. About eight of his employees are working on the project. Using over 35,000 square feet of 16-ounce Revere copper, they'll be fabricating the roofing panels, in shop and on site, in preparation

"WE RELY HEAVILY ON THE SMACNA ARCHITECTURAL MANUAL, REVERE'S COPPER & COMMON SENSE, AND BEST PRACTICES FROM OUR YEARS OF EXPERIENCES." — GLENN PARVIN

LEFT: CASS Sheet Metal workers are putting in a historically accurate double-lock batten-seam cooper roof.

MIDDLE: CASS Sheet Metal will use 35,000 to 40,000 square feet of Revere copper for the roof. This exterior shot was taken with work underway in 2021.

INSET: This is a Ford rendering of what the site will look like.

for installation. The battens are 3 ½ inches wide by 1 ½ inches high. Twenty-ounce copper will be used on the deck and gutters at the roof's perimeter.

"It's a very, very detailed job," Parvin said.

As of late October, CASS was installing the waiting room's underlayment, which includes 2-inch insulation, plywood, and the ice and water shields that protect the roof's concrete deck structure.

Copper work on the waiting area roof is slated to begin in spring of 2022.

At the rear concourse, underlayment work has been completed. The standing-seam roof installation will begin after work is done on the station's skylights — likely mid-November.

The existing roof and its support structure is in bad shape, Parvin said.

"You have to remember that this building has been sitting vacant for the better part of 40 years," he said. "The copper was all pillaged off the roofs by scrappers. They're actually replacing a lot of structural steel in certain places."

Although CASS has worked on many historic restoration projects in and around the Detroit area, the batten system used on the station's copper roof is a type that CASS hasn't done before.

Parvin said they'll be consulting industry publications, along with their knowledge, to figure out the best way to install it.

"We rely heavily on the SMACNA architectural manual, Revere's Copper & Common Sense, and best practices from our years of experience," he said.

CASS will be using a roll former to produce the roof panels, along with a custom-made seamer. Workers will be using hand tools they designed themselves to make it easier to create the folds the copper panels require.

Although he's worked with many types of metal, Parvin said he always prefers copper.

"I love it," he said. "Copper is great to work with, as opposed to trying to deal with stainless or titanium, which is very springy. You can do a lot more with its pliability. It's a roof system that generally (lasts) 75- to 100-years plus. So bar none, it's the superior system of choice for lifecycle cost and protecting a building of this magnitude."

As a lifelong area resident with a passion for the city's early 20th century architecture, Parvin said he's honored to play a part in bringing back a major piece of Detroit's history.

"I have been blessed to do many historical restoration projects," he said, "(but) this project is near and dear to me. My mother grew up blocks away from the station. I needed to be involved in this project." ▼

Phoenix is booming

Manufacturing, technology and semiconductor sectors are driving economic growth

As manufacturing and semiconductor businesses return stateside, the Phoenix economy is booming as a result. This is good news for SMACNA members in the area.

"There is a huge influx of data centers and microchip manufacturing facilities," says Robert Dustman, project director for Bel-Aire Mechanical in Phoenix. "Intel announced a $20 billion expansion project that is expected to create 3,000 construction jobs." Taiwan Semiconductor Manufacturing Company, one of the world's largest manufacturers of semiconductors, is building a new $35 billion facility in North Phoenix, and Bel-Aire is currently working on various components of the project. "Construction is well underway for the new TSMC facility. Many smaller support businesses are popping up all over the valley. Reports claim that the collateral impact of this project could be in the range of $150 billion or more."

"Meanwhile, Facebook, Yahoo, and Google are building data centers in Arizona because of the warm, dry climate, and because we don't have natural disasters here," Dustman adds. Bel-Aire constructed about 85 percent of the data centers around Phoenix and provides service maintenance at many of these campuses.

At the current time, "we do not have a large enough labor pool to meet local demand," Dustman says. "We have travelers coming in from different states to do some of this work. There have been calls out for qualified workers for months, and I expect it to stay open for many months to come. We also see mechanical contractors, some from as far away as Minnesota, trying to capitalize on some of this work."

FAR LEFT: This is a medium pressure horizontal supply duct terminating at the mechanical shaft. This duct will feed several terminal units and chilled beams in individual patient rooms.

LEFT: The new Women's Tower will house Labor and Delivery services and include medical-surgical patient rooms. Bel-Aire is providing all sheet metal duct, hydronic piping, plumbing and medical gas systems for the facility.

Bel-Aire has seen an uptick in the healthcare market segment as well. "Banner Health, Dignity Health, and the Mayo Clinic are major providers. They're all expanding right now, and Bel-Aire is currently under contract at several of these facilities."

One of Bel-Aire's projects is Banner Desert Medical Center. Bel-Aire is providing all sheet metal duct, hydronic piping, plumbing, and medical gas systems for the 210,000 square foot build out. The work includes a new seven story Women's Tower, Cardon Children's 3rd Floor build out, Sophie's Place Forever Young renovations, expansion of the central plant, and upgrades and renovations at existing Towers A, B & C. The project began in August 2020 and completion is slated for November 2023. "We've topped out with our field crew of about 50. That team is comprised of sheet metal workers, pipe fitters, plumbers, and certified medical gas installers."

Currently Banner Medical is in Phase 3, the construction of the 150,000 square foot women's tower. The tower will house labor and delivery services with additional medical, surgical and patient rooms. The expansion adds about 168 new patient beds.

Bel-Aire is installing over 600 chill beams in the new tower. These active chilled beams are ducted to provide outside air and slight room pressurization. "This outside air supply is conditioned, because 130-degree air taken right into the hospital would overwhelm the chill beams," Dustman said. "The HVAC system consists of three large dedicated outdoor air system units. The rooftop DOAS units supply tempered, dehumidified air and connect to vertical sheet metal duct risers that travel from the roof to each floor. Horizontal ducts will branch out from these vertical risers throughout the floor to provide conditioned outside air to terminal units and chilled beams."

For maximum efficiency, the majority of the duct and fittings are assembled and sealed in the shop. The controlled shop environment improves comfort and safety for the workforce. "A good portion of the duct and fittings are pre-assembled and shipped to the site in 25-foot sections," Dustman says. "These sections are rigged to the respective floors and installed."

Bel-Aire will move to Phase 4, the expansion of the central plant building, in January 2022. The company is providing and installing two new 1,374-ton centrifugal chillers with associated piping and control systems, all of which must be integrated into the existing system.

Bel-Aire will produce some of that duct in-house but teamed up with Superior Duct Fabrication out of Pomona, California for the bulk of the project. "Once we complete the modeling and coordination process, we generate electronic files and send them directly to Superior," Dustman says. "We've used them on some of our larger jobs in the past. Between Bel Air and Superior Duct, we're fabricating 235,000 pounds of rectangular and spiral ducts for this project." Most of the ductwork is fabricated from cold-rolled galvanized steel, but all patient shower rooms will use aluminum ductwork.

To better serve its customers in the Phoenix market, Superior Duct is setting up a new 50,000 square foot fabrication facility in Phoenix. The company expects to begin operations in October. "Superior Duct is one of the new contractors in town, and it's a SMACNA member. We look forward to working more closely with them in the future." ▼

Heavy work

Steel town industrial contractor is a heavy metal hit

Location, location, location.

The owners of Vidimos Inc., a SMACNA member in East Chicago, Indiana, know the old real estate adage also applies to the business of custom steel fabrication. Scott Vidimos, president of the family business, can look out his back door and see a Northwest Indiana industrial landscape where more steel is produced than anywhere else in the U.S. Vidimos Inc. has operated within this steel territory since the early 1970s. They have no more room for expansion, but Vidimos also has no intention of relocating.

"We are in a wonderful location for shipping large pieces locally, including into two of the large, integrated steel mills in the area." he said. "Although it wouldn't be easy, we can also ship by rail or barge. There are also a tremendous number of manufacturing plants with whom we've built lasting relationships."

The benefits of having industrial customers as neighbors was clearly visible in early September 2021, when Vidimos Inc. loaded three huge steel fabrications onto truck trailers for a local delivery. The cylindrical pieces are three parts of a replacement tank-shaped receiving hopper that will be used to process valuable slag — a byproduct of iron production. The largest section was 28'-2" in diameter, and 20'-2" high. The loaded weight was 122,000 pounds. The three hopper tank pieces were shipped approximately one mile to a nearby steelmaking facility where the slag is being processed.

Even though the tank only traveled a mile to its destination, arrangements had to be made to move loads

"THE GRANULATED SLAG IS A VALUABLE GREEN PRODUCT FOR CEMENT COMPANIES. IT HAS SIMILAR CHEMISTRY TO PORTLAND CEMENT AND IT CAN BE GROUND AND USED AS A REPLACEMENT FOR PORTLAND CEMENT." — DAVID BERDUSCO

FAR LEFT: Top conical section leaving our shop.

LEFT: Top conical section and middle cylindrical section staged outside plant awaiting escorts to move pieces inside plant.

that were oversize and overweight. The loads, which protruded 10' off both sides of the trailer, were obstructed by overhead signs and power lines, and required special routing due to their weight. The loads were accompanied by escorts, bucket trucks, and a crane to clear the obstructions. "Although the shipments were tedious, there is not another local fabricator better situated for a job of this magnitude."

For the project, Vidimos Inc. fabricated the tank for Paul Wurth Inc., which provided an improved structural and process design, including accommodation for high temperature service. While slag is incredibly hot when it is cast from a blast furnace, a large volume of water is added to the slag to rapidly cool it down before it reaches the receiving hopper. The granulated slag slurry is rerouted from the hopper to dewatering drums, and then conveyed out to a storage area.

"The granulated slag is a valuable green product for cement companies," said David Berdusco, VP of Business Development for Paul Wurth, the company that designed the receiving hopper and hired Vidimos Inc. "It has similar chemistry to Portland Cement and it can be ground and used as a replacement for Portland Cement."

Vidimos Inc. was contracted in early May 2021 to fabricate the 51' tall hopper tank from 5/8", 7/8", 1", and 1-1/2" steel plate including internal deflectors and drain trough. "We burned the plates on our 10'x40' high-definition plasma table. The cylindrical sections were rolled on a 1"x10' plate roll," Vidimos added. "Beams with holes were processed on our beam line. The pieces were assembled using 10- and 15-ton overhead cranes in the shop and our 20-ton crane outside in our yard."

The assembly interior and exterior were sandblasted and painted. A significant portion of the lower area received shop welded refractory anchors and hex mesh to accommodate refractory, which is being field installed by

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Coming up short

Residential contractors face equipment delays and price spikes as the HVAC industry adjusts to ongoing inventory problems

It's not just automakers and semiconductor manufacturers that have been hit by surging prices, material shortages and other supply chain problems in the last year and a half. The residential HVAC industry is also grappling with many of the same issues.

In the 20 months since the COVID-19 pandemic swept the world, disrupting long-established production and delivery schedules, manufacturers say they're struggling to source the steel and components necessary to make furnaces, air conditioners and other HVAC equipment. The problem, which is unlikely to improve anytime soon, has led to backlogs, significant price increases, and homeowners impatient for their equipment to be repaired or replaced.

Contractors have responded by raising prices where they can, stockpiling components and just trying to figure out how to navigate a market that often doesn't make sense.

Just ask Paul Heimann, the vice president and controller at St. Louis-based Welsch Heating & Cooling Co. "We've been seeing price increases for everything in our business," Heimann said. "The flat metal that we buy to make our ductwork is probably two-and-a-half to three times higher than at the start of the year."

UNPRECEDENTED INCREASES

Major HVAC equipment makers such as Trane, Lennox and Carrier have raised prices anywhere from 2% to 30% this year on systems or parts. In some cases, the price hikes — which were historically annual — have become almost quarterly events.

For their part, manufacturers say they have little choice, with the price of many materials spiking 30% to 50% in the last year.

"As raw materials prices have continued to rise considerably, this is also driving a 3% to 4% increase in our component costs," said Aaon Inc. President and CEO Gary Fields when he announced a June 1 price increase. "We intend to stay ahead of these inflationary pressures and must increase the price of Aaon equipment."

Price changes are also a regular occurrence at GP Sys-

LEFT: Major equipment makers have raised prices from 2% to 30% this year on systems and parts.
TOP: Supply shortages have affected nearly every industry, and HVAC is no exception.
BOTTOM: Homeowners understand the situation in the market, although delays in service can be frustrating.

tems, a residential HVAC contractor in Chillicothe, Ill., that recently became part of The Waldinger Corp.

Project manager Bill Goad said GP's costs on some materials have almost doubled.

"I just noticed that flat-stock sheet metal went up from $45 a sheet to $75 a sheet," he said. "It's a $100 hit, maybe a $200 hit on a job. It's not a big deal, but at the same time, when your net profit on a job is thin to start with, that's not what you want to see. That can be a big number off the bottom line."

As if the increase in costs wasn't enough, many residential contractors say they're starting to experience delivery delays as well.

"Our Carrier dealer has a major facility here in town, and usually it's like call them up and pick it up," Goad said. "(Now) we're seeing some significant shortages in key movers, like 2 ½-, 2-ton, 3-ton stuff — the standard stock items.

"We don't even quote it until we see what's available," he added.

Heimann said Welsch has taken to stocking more materials, equipment and components than it normally would to ensure that customers don't have abnormally long wait times.

"We're busting at the seams, let's put it that way," he said. "We've actually taken on some additional space this year, just to bulk up our inventory because of material shortages and equipment shortages."

CUSTOMERS ACCEPT NEW PRICES

If there is good news buried beneath the never-ending headlines about shortages and escalating costs, it may be that they don't seem to be affecting consumer demand. Homeowners are still eager to install new equipment or fix malfunctioning units. And that means that price increases can usually be passed along without much complaint.

"Customers seem to be more willing to spend money than we've ever seen them," Goad said.

Not all contractors are suffering with shortages of materials or equipment. Jeff Laski, the owner of S&M Heating and Air Conditioning in Southfield, Mich., said his company had more supply chain problems last year than in 2021.

"Anything that I need, I haven't had a problem getting," he said. "This summer, we didn't have any issues at all."

But that doesn't mean his costs haven't increased. Like most HVAC contractors, Laski said he's endured multiple price increases from manufacturers in the past year, but he said he's used to it. "It's like every commodity," he said. "They're finding reasons why it has to go up."

Sometimes they blame steel prices or a shortage of other raw materials or components, such as fittings or copper. "It's like this is their chance to raise prices," he said.

Fortunately, S&M's suppliers have been holding the price of equipment needed for the company's long-term projects, Laski said. But for most residential items, that's not the case

"Right now, going into furnace season, the prices are going up. Air conditioners went up again last month: 4%, 5%, 6%. And we just add it on to the price. If someone wants a new furnace or air conditioner, we just automatically add in the new prices," Laski said.

And most homeowners accept it.

"We really haven't lost any (business) because of the price," he said. "I mean, we don't get everything that we bid, but we do pretty well." ▼

Al LaBella, SMACNA's 2021–2022 president

COVER STORY

A New Day

SMACNA welcomed attendees back in person with new guidance, lessons and insight on how contractors can improve themselves and their businesses after two years of pandemic-induced changes.

The Sheet Metal and Air Conditioning Contractors' National Association welcomed 825 attendees Oct. 24 – Oct 27 to Maui, Hawaii for its first in-person annual convention since the COVID-19 pandemic struck in early 2020.

"The pandemic changed who we are and how we do business," emphasized SMACNA's immediate past president Angie Simon.

"But we all pulled through the past couple of years and learned about ourselves, the industry and our processes," added Vince Sandusky, SMACNA's CEO. "I was impressed by the level of common sense and flexibility our contractors and labor partners showed to keep work moving and our workforce safe in the process."

The industry showed tremendous resilience, adapting quickly to the changes necessary as the pandemic deepened. "One positive we experienced from the pandemic was the huge kick in the pants we got when it came to technology," said Angie Simon, SMACNA's immediate past president. "From virtual platforms to embracing prefabrication to having fewer people on job sites to working in more controlled shops to 3-D cameras helping us work at job sites without being there – I'm really impressed with how we found ways to get the jobs done and deal with the shutdown, supply chain issues, workforce issues, the price of steel, and now vaccine mandates. Regardless of the issue, we have adapted and thrived and that is inspiring.

In addition to a golf outing, a trade show and lots of opportunities for networking and interaction, here is a look at some of the insights gained during the annual convention.

FAR LEFT: Angie Simon, SMACNA's immediate past president

LEFT INSET TOP: Steve Pemberton, speaker on diversity, equity and inclusion

LEFT INSET BOTTOM: Joseph Sellers Jr., general president of SMART

BELOW: Josh Sundquist, a keynote speaker

2021 Award Winners

Contractor of the Year: Randy Novak, president, Novak Heating & Air, Cedar Rapids, Iowa

Legislative Contractor of the Year: Tom Martin, president, T.H. Martin, Cleveland, Ohio

Chapter Executive of the Year: Jon Sindyla, CEO, SMACNA–Cleveland, North Royalton, Ohio

Chapter Executive Legislative Advocate of the Year: Ginger Slaick, executive vice president, Georgia-SMACNA, Hoschton, Georgia

EMBRACE DIVERSITY, EQUITY AND INCLUSION

Steve Pemberton kicked off the general session on Oct. 25, with a look into diversity, equity and inclusion, giving attendees some ideas to ponder about the challenges and opportunities the industry faces and how overcoming them can enable future growth.

"Diversity, equity and inclusion is going to be necessary and essential to the growth of our businesses," Pemberton pointed out. "We must find the connected story in our organizations."

HOW TO MINIMIZE RISKS IN TODAY'S MORE CONNECTED WORLD

"I have yet to walk into a corporation or an organization – and I work with Fortune 100 companies – that is fully defended against cyber-attacks," explained Nick Espinosa, an expert in cybersecurity and network infrastructure and founder of Security Fanatics.

He kicked off his SMACNA General Session by hacking into phones and computers in the room through a fake conference Wi-Fi he set up to show attendees that a successful cyber-attack happens every 39 seconds.

It takes on average 192 days for a company to even realize they've been hacked, Espinosa added. He offered attendees tips for how they can better defend their businesses against these threats:

1. Never use free or public Wi-Fi. Bring your own hotspot.
2. If you must use public Wi-Fi, firewall your devices or use a virtual private network (VPN). Espinosa says lazy hackers won't take the extra time to try and get through these blocks.

Introducing the 2021–2022 Board

President: Al LaBella, owner and president of Blue Diamond Air Systems, Medford, New York
President-Elect: Tony Kocurek, owner of Energy Balance & Integration, LLC, Albuquerque, New Mexico
Secretary-Treasurer: Carol Duncan, CEO and owner of General Sheet Metal, Clackamas, Oregon
Vice President: Tom Martin, president, T.H. Martin, Cleveland, Ohio
Immediate Past President: Angie Simon, CEO, Western Allied Mechanical, Menlo Park, California
New Directors:
Todd Byxbe, Miller Engineering Co., Rockford, Illinois
Matt Hildreth, The Waldinger Corp., Wichita, Kansas
Mitch Golay, Corn States Metal Fabricators, West Des Moines, Iowa
Roy Jensen, MechOne, Colorado Springs, Colorado

3. Use multifactor verification, such as text or voice verifications or a temporary code that changes regularly.
4. Have good backups.
5. Change up your passwords; they should not be the same for your social media and your bank or other more important log-ins.
6. Companies need both IT and cybersecurity staffs. Those teams should educate all users at the company on best practices and how to avoid threats.
7. Change up your cybersecurity plan every 18 months to two years, so they don't become outdated.

HOW TO BECOME A LEADER THAT INSPIRES EMPLOYEES

When Marine sniper Jake Wood came back to the U.S. after two grueling tours in Iraq and Afghanistan, he watched his unit lose more men to suicide than to enemy hands overseas. Wood talked to attendees about how they can build a more dedicated following at their companies.

Becoming a better leader starts by looking at the largest group of people in your organization. "Many of your employees are a mindless flock that go about their days," Wood explained. "They aren't bad or untalented. They are just uninspired by the leaders they are following."

The big question is: "How do we unlock the potential within this group?" Wood asked.

He gave the leaders in the room some tips on how to better structure their organizations to tap into this talent.

1. Establish a vision. "Every organization is a story – it has a beginning, middle and end with plot twists and heroes and villains," Wood explained. "How can you craft your final chapter that shows what you're trying to do?
2. Write your final chapter first." Your vision then serves as a magnet for the talent you want to recruit and retain.
3. Treat people in your organization like heroes. "If you think of your organization as a story, "and you treat people like unnamed characters on page 56 of your story, that's how they will act," Wood pointed out.
4. Create a culture that counts. Wood defines culture as the intangible sum of everything you do and all you believe at your company. "When you build an ethical leadership organization, the vision, people, policies, processes, pay and practices must all match," Wood said. "If you have a policy that contradicts your values, you immediately make them null and void." And this can destroy your company culture.

DEVELOP A MOTTO TO KEEP YOU GOING THROUGH LIFE'S CHALLENGES

Josh Sundquist is a Paralympian and bestselling author of "Don't Just Fall: How I Grew Up, Conquered Illness, and Made It Down the Mountain." At age 9, Josh Sundquist was diagnosed with a rare form of bone cancer. At age 10 his leg was amputated, gaining him a life free of cancer.

Sundquist decided nothing was going to stop him from his dream of ski racing. At 16, he began training. It took him six years, but in 2006 he was named to the U.S. Paralympic Ski Team.

Falling down and getting back up multiple times was how Sundquist survived, cycling through stages of disappointment and commitment. But he kept crossing the finish line. "Sometimes falling is a setback, but we also learn something. When we get back up, we have a slightly wiser outlook. When

SMACNA CEO Retires

After 14 years of serving as SMACNA's CEO, Vince Sandusky is retiring from the association.

"We have strong chapters and a committed staff," Sandusky said. "I'm confident that with determination, vigor and the will to succeed, they will continue to serve you well."

"To say that you will be missed is an understatement," added SMACNA President Al LaBella to Sandusky. "You've dedicated so much time and have done an amazing job here. I wish the best to you and your family in the next phase of your life."

Sandusky concluded, "It has been my privilege to serve all of you."

Rick Hermanson promoting the Heavy Metal Summer Experience at the Product Show.

Delta Update: How HVAC Systems Impact COVID-19 Transmission

In light of the new Delta variant of COVID-19, Steve Taylor, principal of Taylor Engineering, and Eli Howard, executive director of technical services and research for SMACNA, highlighted new research on how HVAC systems impact the probability of COVID-19 transmission for SMACNA conference attendees.

The biggest change is what we've learned about how COVID is transmitted. "Last year, when discussing this topic, this was still a mystery. But it's clearer now," Howard said.

"The CDC originally assumed the big droplets were the main cause, but now they may not be a part of the whole picture," he added.

Large particles (100 microns or bigger) are where the 6-foot social distancing rule came from. Larger particles generally don't go further unless they are forced to travel longer distances, such as through a sneeze.

Then there are medium-sized droplets that start between 5 and 10 microns and go up to 100 microns. Particles larger than 15 to 20 microns settle very quickly, while particles less than 10, 7 or even 5 microns are light enough that they can float around a bit. Aerosols and those less than 5 microns are light enough to behave like a gas. "And that's important to note because these are the particles that can actually leave the room and be affected by ventilation," Howard said. "Ventilation does little for the larger droplets."

A challenge for the industry is whether or not we can filter virus particles traveling from one floor to another. So far, there isn't a lot of proof that the virus-laden particles travel from one floor to the other. The reason? "Aerosols are small to begin with, so they don't carry a lot of virus," Howard explained, "and their viability gets less and less over time."

This could potentially have huge implications for our industry because if this isn't happening, then we're not going to have any impact on transmission. Bringing in more outside air, which has been recommended, or having better filters may do nothing to impact transmission. "How much ventilation do I need to dilute the impact of aerosols? No one knows," Howard said. "It's very complicated."

With masks, this 62.1 rate appears to be sufficient. "Using LEED 62.1 rate plus 30 percent outdoor air helps a bit," Howard said. "For those vaccinated, the 62.1 rate appears to be well more than sufficient."

While improving indoor air quality through ventilation and filtration can help remove and dilute virus-laden particles from indoor air, ventilation and filtration are not sufficient on their own to control the risk of transmission, and particularly from close contact exposures.

Howard said the best ways to improve air quality (in order of effectiveness, cost and energy impact) are:

- Source control – vaccinate, test/quarantine, masks, distance, etc.
- Source removal – masks, filtration
- Dilution – ventilation

"WE ALSO NEED TO STOP DISCRIMINATION, HARASSMENT AND BULLYING IN OUR ORGANIZATIONS. DOING THIS TODAY WILL MAKE US BETTER TOMORROW."
— JOSEPH SELLERS JR.

we cross that finish line, we feel accomplishment."

The motto that constantly guides Sundquist, and that he offered to conference attendees: "One more thing, one more time."

FURTHER STRENGTHEN THE SMACNA-SMART PARTNERSHIP

With any continued partnership, the important thing is growth, explained Joseph Sellers Jr., general president of SMART, the international association of sheet metal, air, rail, and transportation workers.

Sellers spoke to the SMACNA conference group about how strong labor relationships are crucial, as is building on that partnership trust.

A continued area of focus will be diversity, equity and inclusion, Sellers said, adding that while these goals aren't new, the industry could be doing better.

"One of our goals in 2019 was to double the women in our organizations," he said, "but two years later, words proved not enough. We need an action plan.

"We also need to stop discrimination, harassment and bullying in our organizations," Sellers added. "Doing this today will make us better tomorrow."

Additionally, the industry continues to evolve, and as air quality becomes more important, "we have the expertise to offer," Sellers pointed out.

Sellers' goal is to continue to identify and address areas of concern. "Using our collective knowledge, we should be able to take our industry to another level."

WELCOME A NEW SMACNA PRESIDENT

During the convention, attendees got the chance to welcome SMACNA's new President Al LaBella.

LaBella, owner and president of Blue Diamond Air Systems, Medford, New York, shared some of his life lessons with the group. He told the story of a football coach he had growing up. "The first thing he would say to us every day was, 'Did you get better today?'" he says. "At the time, we thought he was talking about football, but he was actually talking about life.

"My advice to this group is to ask yourself on a regular basis, 'Did I get better today? Did I become a better leader? A more effective communicator? A better listener?'" ▼

A Politics, Tax & Construction Update

Stan Kolbe, executive director of legislative and political affairs at SMACNA, and Ron Eagar, COO, Grassi & Co., gave SMACNA annual conference attendees insight on various federal updates that could impact construction businesses.

He started by reviewing PPP loans. The SBA approved more than 11.5 million PPP loans. Of the $953 billion available, approximately $800 billion in loans were made.

Borrowers are now in the forgiveness phase of the program. Companies can apply for forgiveness any time up until the maturity date of the loan.

Eagar also mentioned Employee Retention Credits (ERCs) are refundable credits that businesses can claim on employees' qualified wages, including employer paid health insurance costs. "Even if a business received a PPP, it could claim ERCs as long as the same wages and health insurance costs are not used for PPP forgiveness purposes and ERC calculations," Eagar said.

Eager predicted income tax rates will increase. "One of the great tax axioms has always been to defer income," he said "But with the impending individual income tax rate increases, this thinking has changed 180 degrees. Now you may want to accelerate income into 2021."

Consider doing the following for year-end tax planning:

- Convert your traditional IRAs to Roth IRAs to shelter future growth from income tax. You'll also benefit from more flexibility in retirement since Roth IRAs are not subject to retirement plan distribution rules. These are also great assets to pass to your heirs.
- If you're working, change 401(k) contributions to Rot 401(k) contributions for the same reasons as above.
- If your business is a cash-based business, accelerate cash receipts in 2021 and delay paying vendors until 2022.
- Sell appreciated marketable-equity securities, pay tax on the gain at lower rates and reinvest in the same stock at a higher basis.
- Maximize contributions to your HSA. HSAs are triple tax-advantaged accounts, which means contributions are tax-deductible, the money grows tax-free and withdrawals are tax-free for qualified medical expenses.

A moment of lively conversation during one of the SMACNA conference breakfasts.

FEATURE STORY

AGUARDIA RANSFORMATION

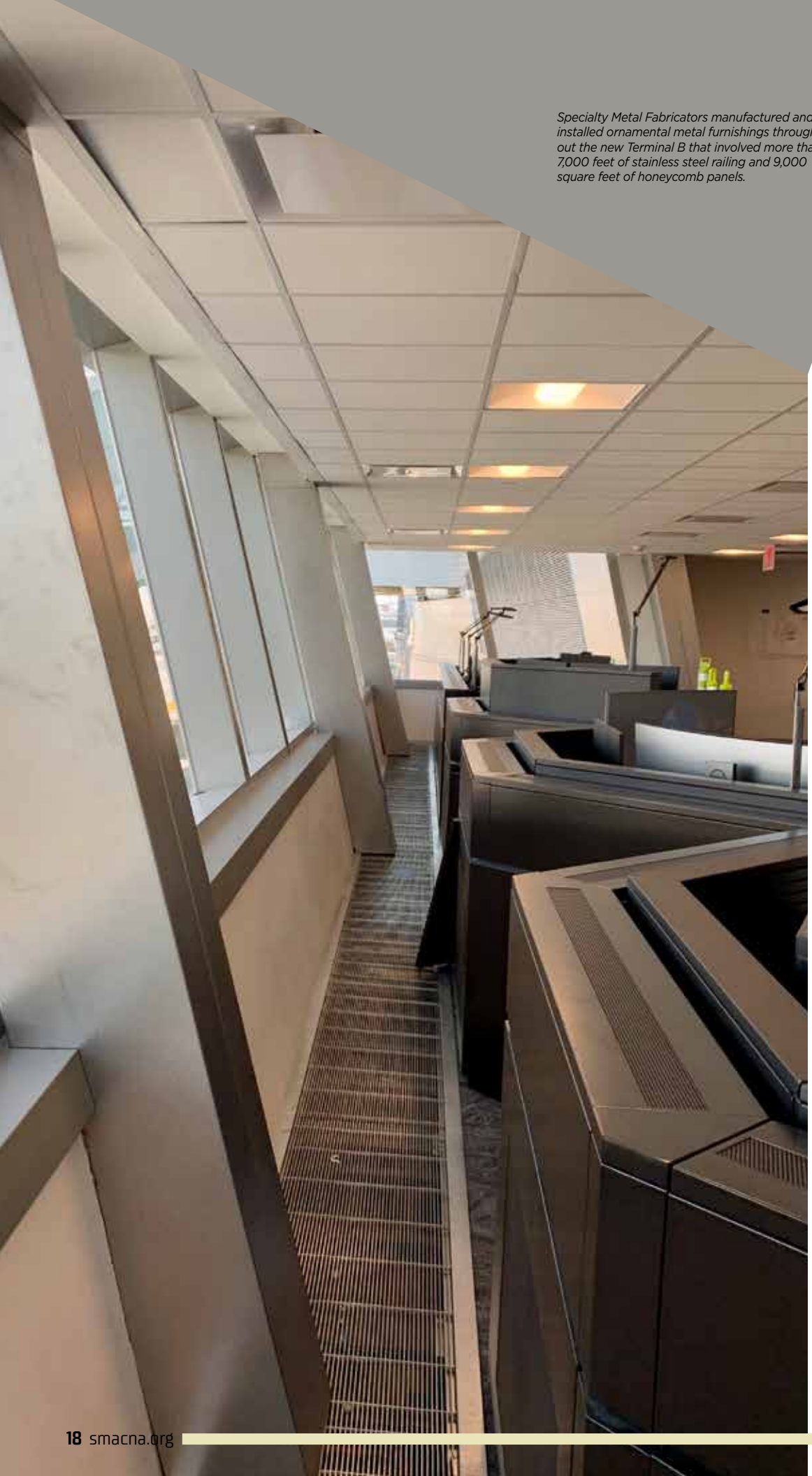
Sheet metal and HVAC contractors play key role in LaGuardia redevelopment.

In the past, President Joe Biden has pointed to New York's LaGuardia Airport as a sad symbol of America's decaying infrastructure. "If I took you and blindfolded you and took you to LaGuardia Airport in New York, you'd think, 'I must be in some third-world country,'" Biden said in 2014.

State officials apparently took the then vice president's jab to heart. Beginning in 2018, the Port Authority of New York and New Jersey has spearheaded a multibillion dollar effort to transform LaGuardia from a chronic pain in the neck for Big Apple travelers into a world class airport.

Sheet metal and HVAC contractors are playing a key role in completing the LaGuardia project. In the process, they've gained insight into the unique challenges involved in reconstructing a major airport.

"With new terminals and new restaurants showcasing all that New York has to offer, this transportation hub enthusiastically says, 'Welcome to New York,' says Rep. Carolyn Maloney (D-NY)."



Specialty Metal Fabricators manufactured and installed ornamental metal furnishings throughout the new Terminal B that involved more than 7,000 feet of stainless steel railing and 9,000 square feet of honeycomb panels.

RED TAPE EVERYWHERE

The master plan for the new LaGuardia calls for a top-to-bottom overhaul that includes new terminals, parking facilities and roads. The centerpiece of the project to this point is Terminal B, which has a construction value of $4 billion. When complete, the 1.3 million square foot terminal will feature 35 gates, complemented by dozens of shops and a new parking garage. Undertaking the construction of Terminal B in phases has enabled the original terminal to remain in operation while the redevelopment is in progress.

It comes as little surprise that when you ask construction contractors about their experiences on the LaGuardia project, a common theme emerges: red tape. New York-based Accurate Specialty Metal Fabricators manufactured and installed ornamental metal furnishings throughout the new Terminal B from the summer of 2019 to the spring of 2020. That involved more than 7,000 feet of stainless steel railing and a variety of ornamental metal furnishings throughout Terminal B, including 9,000 square feet of honeycomb panels.

Richard Minieri of Accurate notes that the company's crews worked in high security areas that required special permissions and inspections to access. There were times during the project that Accurate's workers needed more than an hour just to get their tools cleared through security, according to Minieri. "It was very tedious," he says.

Another New York-based

The Port Authority is in the midst of a multibillion dollar endeavor to turn LaGuardia into a world class airport. Today, there are approximately 11,000 flights and $1 million paid passengers traveling through the airport each month.

"COMPANIES THINKING ABOUT GETTING INVOLVED IN A PROJECT OF SUCH SCALE NEED TO BE PREPARED FOR CONSTANT CHANGES TO PLANS AND DESIGNS. IN TURN, THAT MEANS COMING UP WITH NEW BID ESTIMATES FREQUENTLY."
— TOM TULLEY, DIVERSIFIED

company, Diversified Air Products Sales, has worked on the LaGuardia project for three years, manufacturing air and sound control products for the HVAC systems. After contractors finish hanging duct work in the new facility, they follow up with Diversified's equipment for the ventilation systems tied into heating, cooling, smoke evacuation and fire evacuation throughout the buildings. Diversified also provided louvers for air intake and exhaust on the exterior of the buildings.

In addition to coordinating with multiple contractors on the installation of the duct equipment, Tom Tulley, principle at Diversified, cited the amount of oversight involved as the project's greatest challenge.

"On any public job, you have layers of inspectors watching over you every day," he says. "They're there with mirrors and tapes, measuring everything."

KEEPING IT LOCAL

In terms of bidding on the LaGuardia contracts, Tulley calls the process "frustrating." He says companies thinking about getting involved in a project of such scale need to be prepared for constant changes to plans and designs. In turn, that means coming up with new bid estimates frequently.

"On a project this big, you are constantly rebidding with all the changes," Tulley notes.

Minieri describes the bidding process as "intense." Ultimately, he says the fact that Accurate is a local, one-stop shop was key in winning the contract.

"What the contractor really loved is that we were local," Minieri notes. "We furnished everything in-house, and we installed everything. If there was an issue, they personally could come to the facility to see what was going on."

Similarly, Tulley says Diversified's relationship with the Sheet Metal Workers Local 28 union was vital to winning its contract, as timely deliveries are crucial. A state-of-the-art fabrication shop is also a must, he says.

KNOW YOUR LIMITS

For other companies mulling taking on massive airport contracts, Tulley cautions that they should be realistic about their limitations and resources. Contractors "better have a lot of money in the bank" before committing to a project of LaGuardia's size and scope, according to Tulley.

TOP: Contractors describe the bidding process for working on the airport as "intense." Accurate made these perforated panels.

BOTTOM: Sometimes it took Accurate Specialty Metal Fabricators' workmen an hour to get through security with their tools

"IT'S TOUGH ENOUGH BUILDING AN AIRPORT, ESPECIALLY OF THIS SIZE AND THIS CALIBER. WE OVERCAME A LOT OF OBSTACLES TO GET THE AIRPORT OPEN, AND THROUGHOUT ALL OF IT, OUR VISION WAS NEVER COMPROMISED."
— RICHARD MINIERI, ACCURATE

One major contractor taking part in the LaGuardia project, JPR Mechanical Inc., filed for bankruptcy roughly a year after work started. While JPR had participated in numerous public projects in the New York area, its owner attributed the company's troubles to the demands of its work on the airport.

Minieri says attention to detail is paramount to making projects like LaGuardia a success. He points out that Accurate's diligence was vital moving into the final stage of its work at LaGuardia in the spring of 2020. Covid-19 was starting to spread. At the same time, Accurate was trying to close out the job so Terminal B could open to the public.

"There was more than one occasion where the job site had to be shut down for a day because of a potential Covid outbreak," Minieri says. "Deliveries of materials were getting delayed. Nobody knew what was going on."

Given that New York was essentially the epicenter in the early days of the outbreak in the United States, delays and uncertainty set in as Accurate tried to finish.

"It's tough enough building an airport, especially of this size and this caliber," Minieri says. "We overcame a lot of obstacles to get the airport open, and throughout all of it, our vision was never compromised." ▼

WITH SUCH DEEP ROOTS IN THE EAST CHICAGO COMMUNITY, THE VIDIMOS FAMILY IS PLANNING ON MANY MORE YEARS OF BUSINESS SUCCESS. IN FACT, SCOTT VIDIMOS' SON ADAM STARTED WORKING AT THE FAMILY BUSINESS IN 2004

Top conical section and middle cylindrical section staged outside plant awaiting escorts to move pieces inside plant.

continued from page 7

the installing contractor. Hot dip galvanized access platforms and ladders were also fabricated and shipped loose.

Vidimos said the size and weight of the three sections were the most challenging aspects of the job. "We fabricated much of the work inside our shop," he said. "Although the overhead door in the shop is 24' wide by 20' high, a portion of the wall had to be removed to move the fabrications into our outside yard for final assembly. At 31,000, 40,000, and 122,000 pounds, we contracted to have a 200-ton crane in to load the pieces for shipment."

With just a four-month timeline, Vidimos scheduled two fabrication shifts to get the project done for on-time delivery. "The ingenuity, dedication, and hard work of our day and night shifts is extremely gratifying," Vidimos said. "Fabrications of this relative size occur infrequently, but the experience of our craftsmen allows us to ramp up when the need arises."

Vidimos Inc. has completed other large fabrications at its job shop. "We have shipped stacks, fabricated beams, and assembled conveyor galleries as long as 110'," Vidimos said. "When the customer's plant was originally built, we fabricated a 12'-6" diameter stack that shipped 24' high, which is actually taller than any of the pieces on the tank."

The family-owned company was founded 75 years ago by Scott Vidimos' grandfather, who focused on residential HVAC duct fabrication. Twenty years later, steel mill work accounted for more than 50% of the company's work. Today, steel mill projects account for a maximum of 20-25 percent of their business. The rest is light steel fabrication, duct collection and industrial ventilation systems, as well as maintenance and repair work.

"Steel spending is cyclical," Vidimos said. "Although our capabilities fit steel mill work, they also suit us well for our other industrial customers."

With such deep roots in the East Chicago community, the Vidimos family is planning on many more years of business success. In fact, Scott Vidimos' son Adam started working at the family business in 2004. Today he is vice president — a fourth generation Vidimos who will continue partnering with SMART Local 20 to serve their industrial neighbors/customers. ▼

LEADERSHIP

Mike Clancy

How to win the war for talent

For over 30 years, the construction industry has struggled to attract talent, and skilled workforce challenges have been a constant drumbeat. "The war for talent" has started to feel like the Hundred Years' War. In last year's construction outlook survey, the AGC found that almost half of respondents tied higher project costs and extended durations to the skilled labor shortage, and almost 60% said this shortage was the biggest challenge to worker health and safety. And despite higher wages and greater opportunity than ever before, finding skilled tradespeople remains incredibly challenging.

Yet there are firms that find and retain top talent. What makes those firms different? How can your business become a talent destination? These are the new existential questions — and having an answer is the difference between just getting by and getting ahead. SMACNA contractors could secure success for the long term by thinking differently about talent. Here are a few tactics that would deliver exceptional results.

NEW ENTRANT RECRUITING

1. Recruiting for the trades is a labor AND management responsibility. For too long, many contractors delegated the recruiting of new apprentices to their union partners. However, the most effective firms are those who participate in joint recruiting efforts. Participating in career days at the junior high and high school level, for example, allows for the identification of pre-apprentice recruits that will feel a connection to and loyalty for your company.
2. "National signing day." One tactic that works well is highlighting high school students who decide to enter an apprenticeship program the same way those who enlist in the military or sign a letter of intent to play sports in college are celebrated. My local high school has a "signing day" to spotlight young people who opt for a career in the trades.
3. Recruit the whole family. One of the main competitors to the trades is the idea that every young person needs a college education. The fact is, every young person needs a post-secondary education, of which college, military training, and apprenticeships are all options of value. But without an earnest effort to reach parents, our industry will always appear unattractive.
4. Look in new places. Programs like Helmets to Hardhats, or those that provide a second chance for nonviolent offenders, provide access to a whole new group of applicants.

DEVELOPING AND RETAINING YOUR PEOPLE

1. Ongoing skills development. Don't be threatened by your employees wanting to take journeyman upgrade training or foreman training, embrace it. Also, the best firms provide opportunities for training and development beyond those provided by the local union. Professional development and training drive employee engagement and engender loyalty to your firm.
2. Focus on efficiency. Nobody shows up to work hoping to have an unproductive day. Too often, we sow the seeds of project failures by not providing our people what they need to be successful. In general, worker inefficiency is evidence of poor management. FMI's studies show that around one-third of the hours spent on the jobsite are inefficient — waiting on tools, material, instructions, or equipment, dealing with rework, or being impacted by other contractors. If you could eliminate inefficiency, it has the same effect as hiring 50% more workers — plus, your employees will have a higher rate of satisfaction and engagement.
3. Deal with nonperformance quickly. Often, the main demotivator for our skilled tradespeople is seeing those who are less motivated or skilled malinger on for a long time. While acting quickly on non-performance is a managerial hassle, it bears fruit in ensuring that your team is full of people who want to be there, and it also eliminates a source of friction.

These are just a few of the tactics we have seen firms implement to change their labor challenges into a source of advantage. By thinking differently about the way we approach the skilled labor challenge, SMACNA contractors can differentiate themselves as talent destinations and win the war for talent. ▼

Mike Clancy is a partner and leader of FMI's Strategy Practice.

FINANCIAL STEWARDSHIP

Ronald J. Eagar

Tax savings you don't want to miss

The purpose of a prequalification process is to evaluate whether a contractor is qualified to bid on a specific construction project. However, the bidding landscape was drastically altered by COVID-19, so it is increasingly important to strategically reposition the way you present your company.

As a challenging year comes to an end and construction companies begin tax planning, it is important to ensure you've exhausted all available strategies to save or defer the payment of one of your largest overhead items — income taxes.

There are several end-of-year income tax preparation strategies a contractor can utilize, including:

- Bonus depreciation or Section 179 elections – Available for fixed assets placed in service in the current year, both allow you to deduct the cost of qualified additions. A common tool to maximize the deduction under current tax law is to bunch necessary purchases in the years with the most projected income. Also, consider what fixed asset(s) you may need next year. It may make economic sense to purchase the asset(s) this year instead.
- Accounting Method – Contractors have several available accounting methods, which can vary by contract. Be sure the allowable (or required) method(s) was (were) chosen to create maximum tax deferral. The most common methods are cash basis, completed contract, and percentage of completion. The right method can create an income tax deferral for several years, leaving more cash on hand for day-to-day operations.

Once tax preparation begins, other strategies remain available until the day returns are filed, or even retroactively. Be sure to evaluate the following commonly overlooked opportunities:

Fuel tax credit. The excise tax included in the cost of gasoline funds the maintenance of highways and roads. The IRS offers a tax credit to contractors who purchase fuel for eligible off-highway business uses, such as stationary machines, bulldozers, earthmovers, etc.

The credit is computed by the rate per gallon that the IRS allows for each type of fuel. If a contractor purchased 10,000 gallons of undyed diesel fuel at the rate of .243, the credit would be $2,430. Over 10 years, this would multiply to a nearly $25,000 reduction of your tax obligation. Since this is a credit (not a deduction), it is a dollar-for-dollar reduction of your taxes. For contractors that are equipment-intensive, this can be a big savings.

Research & Development (R&D) credit. Commonly underutilized by contractors, the R&D tax credit can be applied to any new or improved business component whereby a process or product is created or improved, such as work performed on a structure to enhance construction performance, development of a new technique to increase efficiency, research of new construction methods due to site conditions, and creation of a new tool or part.

A four-part test determines eligibility:

1. Permitted purpose: Have you improved upon the functionality, performance, reliability or quality of a product or process?
2. Technological in nature: Does the activity fundamentally rely on science, technology, engineering or math?
3. Elimination of uncertainty: Is there a level of uncertainty that the R&D is attempting to reduce?
4. Process of experimentation: Have you evaluated solutions through modeling, simulation or trial and error, even if the experiment was unsuccessful?

A product or process that meets all four criteria likely qualifies as R&D. Like the fuel credit, this is a dollar-for-dollar reduction of taxes and can be a substantial year-after-year savings.

Section 179D deduction. The Energy-Efficient Commercial Building Deduction (179D) was made permanent this year. This deduction (up to $1.80 per square foot) is achieved through the installation of energy-efficient HVAC, building envelope and lighting assets. It applies

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TECHNOLOGY

David Sombrio

Six Benefits to Adopting New Software Technology

Although some sectors of our industry are certainly slower to innovate than others, it's difficult to make broad strokes about the entire industry. As a construction technology consultant, I am fortunate to see a wide spectrum of technology adoption. I have experience with contractors with highly-efficient and automated fabrication shops that rival the best manufacturing facilities in the world. Conversely, I've also worked with contractors unwilling to transition their office operations from on-premise legacy software to cloud solutions that substantially increase efficiencies.

Software isn't the solution to every problem, but it can solve a lot of them.

IMPROVE EFFICIENCY

Software Technology improves the ratio of time-spent to work-completed by reducing double-work, human error, and allowing workers to focus on more important tasks. In addition to software and apps, adding automation is pivotal to saving time and improving efficiency for construction companies. Automation provides great improvements —not by replacing human workers, but by helping them produce more in less time.

Here are some simple ideas for where to begin with technology to approve improve efficiency:

- Safety management applications
- Automated cutting and welding
- Integrated business software
- Modern cloud solutions
- Technology for service departments

IMPROVE QUALITY

Fabricating in a controlled environment from a well-developed 3D model is a great method for consistently producing high quality products. The challenge is developing an adequately trained staff with the appropriate technology to accomplish this. Modern contractors that focus on performance need competent BIM/VDC personnel, robust modeling, fabrication and delivery software, and an efficient fabrication shop with equipment capable of automation.

REDUCE RISK

Data collection using modern software allows contractors to track risk-related metrics. When businesses use manual processes, or Excel, they are exposing themselves to multiple risks. When field teams or fab shops use paper plans, there is a greater chance of conducting rework. A plan management application on a tablet can help them stay up-to-date and build more accurately. Tracking safety metrics and reducing errors in cost and schedule data drastically impacts the profitability of a job.

INCREASE PROFITABILITY

Offices must adopt trade-specific applications to help their company win and complete more jobs. Profitability in construction is heavily impacted by the amount of labor hours spent to complete a project and the number of projects won and delivered. Efficiency in the field directly impacts profitability — although efficiency in the office is also crucial to success. Robotics and automation certainly improve profitability. However, incremental improvements like implementing best practices, documenting work completed, and workflow improvements add up and become imperative to success.

THE VALUE OF DATA

The word "data," while popular, is not just a buzzword. Data enables leaders to make faster, more informed decisions and help businesses succeed by providing visibility and insights that would not exist without it. Businesses should have a documented data strategy.

Here are some considerations when developing a data strategy:

- What data do you want to collect?
- How will you collect data?
- Where will you organize and store data?
- Does the data need to be standardized because you are using multiple systems? If yes, how can you standardize it?
- How can you visualize and interpret data?
- How does the data impact your decision?

INTEGRATED DEPARTMENTS

Modern technology and integration does more than share data between multiple systems, it gives contractors the ability to integrate their company's departments. Integrated software allows for more transparency within an organization. The field can see the status of deliveries, possess real-time access to warehouse inventory, understand the current state of project financials, and much more. Business leaders would be able to have visibility into the success of their project portfolio, understand the impacts on individual project schedules or budgets, and track key metrics per department and hold managers accountable to company goals.

These are only a few of the many benefits that technology can provide our industry. A lot of contractors are well on their way to leading our sector in innovating, while others are a decade behind because they run a profitable business without modernizing their office, shop and field technologies.

I do not advocate for companies to blindly select software and technology because not every product is the right product, but I do recommend that you do your due diligence by understanding your business or department-specific requirements and evaluate technology based on those needs. ▼

David Sombrio is a senior consultant at JBKnowledge.

FINANCIAL STEWARDSHIP

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to new construction and renovation of qualifying commercial buildings and apartment buildings of four stories or more.

Employee Retention Credit (ERC). If your business has less than 500 employees and was partially or completely shut down during COVID-19 or suffered more than a 20% revenue decline in 2021 (or 50% in 2020), don't overlook this payroll tax credit. Revenue declines are measured quarter by quarter, compared to same quarter in 2019. Combined, the 2020-Q4 and 2021-Q1-Q4 ERC can equate to up to $33,000 per employee. Even if these quarters have passed, you can still amend Form 941 and request refunds.

It's never too early to start planning tax strategies for 2021 and beyond. For information on more tax savings opportunities, contact reagar@grassicpas.com. ▼

Ronald J. Eagar, CPA, CCIFP is a construction partner and COO at Grassi. He can be reached at reagar@grassicpas.com.

SMACNA 2021 Associate Members

PLATINUM

GOLD

SILVER

SMACNA's Associate Member program provides an opportunity for industry suppliers to build long-lasting relationships with SMACNA members, the industry's premier contractors.
To learn more about becoming an Associate Member, visit smacna.org or contact Scott Groves at smacna@naylor.com.

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SMACNA CALENDAR

DECEMBER

Dec. 5–7
Council of Chapter Representatives Meeting
Dana Point, CA

JANUARY

Jan. 24–26
MEP Innovation Conference
Tampa, FL

Jan. 31–Feb. 2
AHR Expo 2022
Las Vegas, NV

FEBRUARY

Feb. 11–12
College of Fellows Spring Meeting
Wesley Chapel, FL

MARCH

March 1–2
Partners in Progress Conference
Las Vegas, NV

March 13–17
Business Management University
Tempe, AZ

March 15–16
Collective Bargaining Orientation
Irving, TX

March 24–25
Association Leadership Meeting
Las Colinas, TX

APRIL

April 3–6
Project Managers Institute
Raleigh, NC

April 11–13
Supervisor Training Academy
St. Louis, MO

Welcome New SMACNA Members

All Iowa Mechanical	Norwalk, Iowa
C-Los Industries	Denver, Colo.
Kaemmerlen Parts and Service, Inc.	St. Louis, Mo.
Lakebrink Heating & Air Conditioning.	Union, Mo.
Prime Specialty Contracting LLC.	Marquette, Mich.
RVTDESK Inc	Brentwood, Calif.
Red Rock Tab	Henderson, Nev.
Total Flow Control	Detroit, Mich.

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