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# SMAC NEWS

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## Budget Reconciliation, COVID Relief, Pension Reform Among Items Before Congress

Although the Senate voted to acquit President Donald Trump of impeachment charges, Congress has also been attending to other legislative business in 2021.

The Senate is concentrating on Biden Administration Cabinet appointments, and the Senate and House both remain focused on producing a COVID-19 relief package that meet budget and reconciliation rules to avoid a Senate filibuster. Budget reconciliation votes require only a simple majority, but the rules on reconciliation are restricted to items that affect the budget.

The House committees of jurisdiction are holding hearings on their portion of the package, with House floor action expected before the end of February, with Senate action to follow. Democrats want to have a package ready for President Biden's signature before mid-March.



### Ways and Means COVID Bill Includes Pensions

The House Ways and Means committee published its half of the \$1.9 trillion relief package in February. Of interest to SMACNA members is Subtitle H relating to pensions. Key Senate and House leaders have indicated more pension relief and reform

would be undertaken later this year because alternative plan design, including Composite Plans, would not qualify for the reconciliation process.

Other types of reforms to make it easier for plans to take earlier action on unstable plans were also excluded from this bill. However, the Ways and Means proposal would provide relief to plans with losses related to the pandemic.

The bill includes provisions for plans with pandemic-related losses similar to legislation passed after the 2008 market crash. If passed as written, plans that suffer losses from the pandemic would be able to:

- Utilize a zone freeze to avoid designation to lower plan status as endangered, critical, or critical and declining
- Stretch funding improvement and rehabilitation periods by 5 years
- Extend amortization to 30-years for asset losses and other losses, such as loss of man-hours or increased retirements due to the pandemic

The main feature of the bill is a rescue of failing plans. The bill would provide money to the Pension Benefit Guaranty Corporation (PBGC) and failing plans would apply for funds needed to pay full benefits for 30 years. It is anticipated that about 120 plans would qualify. The rescue would require plans to restore any previous benefit cuts from MPRA relief and once rescue money is provided from PBGC, plans could not later request MPRA relief. The

proposal has guard rails which would prohibit plans from taking unwarranted action, such as reducing plan assumptions contrary to plan experience, to make them eligible for the rescue money.

NCCMP and other proponents for rescue of failing plans have long emphasized that delaying action on rescue of failing plans would be more costly to the government than taking action now because the PBGC, which insures these plans in the event of plan insolvency, would also become insolvent and unable to pay guaranteed benefits.

In particular, NCCMP notes that employers and participants have paid more than \$698 billion in federal taxes and \$374 billion in state and local taxes and that if 1.3 million participants lose their pension and are forced onto social safety net programs, the government would lose \$20 billion a year in taxes combined with increased spending in safety net programs.

### COBRA Relief in Ways and Means Proposal

The Ways and Means bill proposes subsidizing premiums for COBRA coverage at 85 percent. In 2010, the subsidies were only 65%. This larger premium subsidy should help keep more health and welfare contributions coming in to plans from workers who lost employment during the pandemic. The subsidy would go directly to plans in the form of an advanceable tax rebate. ▼



## FROM THE PRESIDENT

Angie Simon

### Why Diversity, Equity, and Inclusion Matter

We as businesspeople should care greatly about DE&I, not only because it is moral and ethical to treat people fairly and equitably, but also because it makes good business sense to create a strong DE&I culture. Creating an inclusive work environment increases productivity and invites innovation while reducing the risk of accidents. It also attracts top talent to our trade.

The Construction Industry has experienced some shocking incidences of racism that have pushed all of us to look toward a more diverse workforce. However, diversity without inclusion will not work. We have to educate our contractors, employees, and unions that inclusiveness is key to retaining a diverse workforce. Simply put, inclusion is something that does not happen on its own — we need to make sure everyone feels they are part of the team. When employees feel included and their ideas and feedback are appreciated, they will feel invested in the cause and more inclined to contribute.

In a highly competitive industry like ours, it is imperative that we take the lead for all the trades by being the most inclusive, whether it is in the office, in the shop, or on the job site. In addition to our reputation, embracing DE&I has many benefits that can help your business' bottom line:

- According to a 2020 McKinsey study, companies in the top 25% for gender diversity are 21% more likely to have financial returns above national industry means, while companies in the top 25% for racial and ethnic diversity are 33% more likely to have financial returns above national industry medians.
- Deloitte reports that when employees think their company is committed to diversity and they feel included, there is an 83 percent uplift in their ability to innovate. Innovation leads to better results. And results drive company performance and profit.
- Our trade faces significant recruitment challenges over the next decade with more than 35 percent of our workforce aging out. If we can accept and embrace diversity and inclusion in our workforce, we will have an untapped resource to help fill this gap in the future.

SMACNA's Board of Directors and the SMART's General Executive Council have seen the good, the bad and the ugly, and we all agree that recruiting and retaining a diverse and inclusive workforce with the skills to meet our needs now and in the future is our only path forward. Therefore, we developed this joint statement affirming our common interests and goals:

*SMACNA and SMART recognize that diversity strengthens our workforce, benefits our communities, and makes the unionized sheet metal industry stronger and more competitive by reflect-*



*ing the communities where we operate and the people we serve. To affirm our commitment to diversity and inclusion, we have agreed to develop, with the help of experts, a coordinated strategic plan with long-term and short-term objectives which will be evaluated and adjusted as necessary. Our unified goal is to shift the mindset of management, labor leaders, and our respective memberships to recruit, welcome, and retain the most competent and skilled workforce available while embracing differences in age, ability, ethnicity, sex, gender identity, national origin, language, marital status, political affiliation, race, religion, sexual orientation, and other characteristics that make individuals unique. SMACNA and SMART are strongly committed to take the necessary steps to achieve our goal of a diverse industry with no tolerance of bullying, harassment, or discrimination. We will provide regular updates on our progress on the strategic plan and on our continued work to promote our shared values of diversity, inclusion, and equity.*

In 2021, SMACNA will work to help members understand what DE&I means for our industry through the development of programs and opportunities to engage and learn about the positive impact DE&I programs can have on our businesses. Together with SMART, we will make a difference in our industry and set an example for all trades in the construction universe.▼

Sincerely,

Angie Simon, SMACNA President



## Taking Skills to New Heights

**A**ccurate Specialty Metal Fabricators (ASMF) of Queens, N.Y., took their work to another level recently with a project atop the Citigroup headquarters building in New York City. They constructed and installed aluminum guardrails around the perimeter of the roof, along with a site screen wall to conceal the cooling towers.

When the multi-million-dollar project landed on his desk, ASMF's COO, Rich Minieri Jr., saw a "fantastic opportunity to take a shot and manifest our vision for the future of ASMF's business."

ASMF produced and installed more than 3,000 feet of railings, though the biggest portion of the project was the cooling tower screens. The original plan was to extrude



**TO SIMULATE INSTALLATION, ASMF STACKED CONTAINERS AT THEIR SHOP TO CREATE A 50-FOOT HIGH WALL TO ASSEMBLE AND TEST THE BLADES BEFORE GOING TO THE JOB SITE.**

the site screen pieces, but the large size of the fins made that impossible. ASMF ultimately connected with a die manufacturer in Chicago and bought two sets of dies. The manufacturer flew to New York and spent two days working with the team to help get production running smoothly.

Minieri says planning and organization were crucial. "Once we got the fabrication underway, the next focus was logistics. How do we want to go about it? How do we want to install this?" To simulate installation, ASMF stacked up containers to create a 50-foot high wall at their facility, assembled 15 blades on the ground, and then erected them. It worked well, so they decided to assemble everything in their yard, and crate the pieces for delivery to the job site and then they would install.

The team was comfortable and familiar with the materials they used on the project, which led to a cleaner fabrication process. The support brackets were one-quarter inch thick steel, the blades were one-eighth inch thick aluminum, and the subframe was an 8 x 3 by 3/16 tube steel. There were two support brackets per fin. Each section had three frames, totaling 50 feet in height.

While fabrication was underway at the facility, the team went to the top of the Citigroup building to measure out the landing area. It was just seven feet, and the crates were 6' 6". They built a 6' 6" frame and walked it around the roof to ensure they could navigate every turn.



*FAR LEFT: A bird's-eye view of the cooling tower. ASMF constructed and installed aluminum guardrails around the perimeter of the roof, along with a site screen wall to conceal the cooling towers.*

*LEFT: A bird's eye view of the cooling tower.*

*RIGHT: A night shot of the first section being installed.*



Fabrication started late in the summer, and installation began after Thanksgiving. It took nine trips with a flatbed to deliver the 27 crates — each 13' high and 6'6" wide.

"You're on the west side of New York City, Hudson River, wind blowing, Greenwich Street, tons of people on the ground. And you've got a 3000-pound crate that's pretty top heavy being wheeled across the roof. Fortunately, we were able to successfully land it. And then, as we started setting the crates and working from the south to the east to the north, the travel distance shrunk, which led to a quicker set time," Minieri said as he described the scene at the sky-high job site.

Citigroup's headquarters are 59 stories tall, or about 915 ft high. Knowing the risk of the wind catching hold of materials, they tied each crate down to the building to ensure there was no movement, and five people focused on uncrating.

Another challenge was the lack of space. The first few crates went slowly but installation started picking up because space was opening up, and they got into a really good rhythm. "We had to be done by Christmas Eve," said

Minieri. "We call it the 'Christmas Miracle' because it was a tall task. But I have a great group of team members and colleagues. No matter how difficult the task was, everybody always had the mindset of addressing the problem, overcoming it, and forging forward. We were really proud of the product we presented and the way in which we accomplished it."

Minieri credits the general contractor, Tishman Construction, and Citigroup, the client, for being so accommodating throughout the project. "It was always an open line of communication. It was 'How can we fix this?' and 'How can we improve on this?' And when you're building major buildings in New York City, that's the type of mindset and mentality you need. It's a team effort and it's better to be all rowing in the same direction than against each other."

Minieri enjoyed figuring out the logistics of this project. "Once we identified all the elements, and we found the right tooling and the right sequencing, things ran smoothly. But really, this whole project was just planning, planning, planning, planning, and it just goes to show you, if you have a good plan, you can really achieve anything." ▼



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## A Perfect Trifecta for SMACNA Members

**S**MACNA members won all the sheet metal work available for the Southwestern Community College's new Performing Arts and Cultural Center in Chula Vista, Calif. California Sheet Metal (CSM) is installing the architectural panels, A.O. Reed and Co. is the HVAC and mechanical contractor, and Certified Air Balance (CAB) is providing TAB services for the \$52.7 million, 48,576 square foot complex.

**"THIS IS THE LEVEL OF CRAFTSMANSHIP THAT BRINGS OUR CONTRACTORS HIGH-PROFILE JOBS."**

The Center broke ground in September 2018 and is on schedule for completion in March 2021. To accommodate both school activities and community events, the two-story building includes classrooms and offices, stage and set construction spaces, a dance studio, areas for concessions, and two different theaters. But the first sight visitors will see is the spectacular artwork on the building skin.

"California Sheet Metal's work looks really good," says Mark Russell, project manager for CAB. "This is the level of craftsmanship that brings our contractors high-profile jobs."

CSM is installing approximately 35,000 pounds of alumi-

num, galvanized steel, and stainless steel panels, including the perforated image of a rising sun on the exterior. The building's sloped walls pose a special challenge because the framing contractors and CSM had different tolerances.

"We usually release panels based on the drawings, but this time we held over 2,000 panels while we waited for the project to evolve," says Brian Johnson, CSM project manager. Johnson also spent extra time coordinating with the general contractor and other trades. "While upfront GC/subcontractor coordination may seem tedious, it pays off in the end. We were able to get the results we were after by putting together a quality project plan and goals." Johnson added.

Meanwhile, A. O. Reed is installing a \$3 million hydronic HVAC system. They are using a Daikin split system air conditioning unit with three custom Huntair rooftop air handling units. The Center receives both hot and cold water from the central boiling plant through a below-grade campus piping loop.

A. O. Reed built the plant 10 years ago and upgraded it about a year ago. "Once the controls contractor has programmed the system, and I have calibrated the air handlers," says Russell, "the facilities staff will be able to manipulate the settings from the central plant, or even remotely from home."

Although A. O. Reed and CSM have worked with Southwestern College before, they could not depend on prior relationships to win the contracts. "This was a Project Labor Agreement job with public bidding," explains Johnson. "We submitted our bids in sealed envelopes, and the contractors with the lowest bids won. CSM's bid of about \$2,118,000 won by just a few thousand dollars."

With tight competition, the contractors depended on



*LEFT: California Sheet Metal installing .080 post finished formed aluminum soffit panels from a 65' articulating boom lift*

*BELOW: California Sheet Metal is installing approximately 35,000 pounds of aluminum, galvanized steel, and stainless steel panels, including the perforated image of a rising sun on the exterior of the Southwestern College's new Performing Arts Center.*

*LEFT, BOTTOM: California Sheet Metal prepping the boom lift to continue the panel install.*



**“CSM, A. O. REED AND CAB ARE ALL SIGNATORIES TO LOCAL 206, SO NOT ONLY DO WE BRING THE SMACNA ADVANTAGE, BUT WE ALSO BRING THE UNION EDUCATION AND WORK FORCE AS WELL.”**

precise estimating to succeed. “What you see on the drawings is what you bid. Sometimes a job might be missing some necessary component, like integral flashings, but if you add that to your bid, you’ll lose. You only bring up amendments after you’ve won.”

A. O. Reed won the mechanical bid in July 2018 and used the months before they started the underground to fine tune the HVAC system. “The project looks straight-forward on the surface, but the mechanical contractors had to fit 65,000 pounds of galvanized steel ductwork around the intricate rigging and lighting systems for two theaters,” says Aubrey Taft, vice president of business development for A. O. Reed. “Our early involvement with detailing was critical. We allocated our detailing team to assist the engineering team in resolving coordination issues with structure and the mechanical systems. At one time, our detailers were basically redesigning the project to make everything fit within the constraints of the structure.”

A. O. Reed’s prior relationship with the facilities personnel helped them appreciate the wants and needs of the

end-user. “We understood the vision of what the client wants the campus to look like. That perspective (helped us) give the community and the college what they want from this project.”

CAB will do the bulk of the TAB work in March after the other contractors have gone, but Russell has started regular walk-throughs and is reviewing the drawings to ensure that everything adds up. “At this stage, I’m communicating with the controls contractor and confirming that everything is installed correctly,” he says.

Besides the three large air handlers, he is monitoring 26 variable air volume boxes, four exhaust fans, and six fan coils. “Air balance is all about integrity and honesty. If you keep good quality work going, you keep getting good jobs,” Russell adds.

Taft agrees. “The owner is looking for the best, especially for this project. They want the best educated, most skilled labor that they can find. CSM, A. O. Reed and CAB are all signatories to Local 206, so not only do we bring the SMACNA advantage, but we also bring the union education and work force as well.” ▼



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## 'On-Time' Is Critical for Global Aerospace Client

**T**ime waits for no one, especially when you've been selected to build the newest manufacturing plant for the world's largest aerospace corporation, The Boeing Company.

Bel-Aire Mechanical (BAM), a local Phoenix, Ariz.-based full-service contractor, was recently awarded the HVAC, process piping, and plumbing contract for Boeing's Advanced Composite Fabrication Center. Founded in 1986, Bel-Aire provides a broad range of services in addition to HVAC, piping and plumbing. They also construct medical gas systems and offer 'in-house' virtual design and construction and BIM modeling, making

The 165,000 square foot Advanced Composite Fabrication Center will house state-of-the-art, high-tech equipment to support the manufacturing and assembly of advanced composite panels to be used on aircraft. It includes the construction of two new building structures with a central utility plant (CUP) and a 155,000 square foot manufacturing area, with a two-story administrative office building.

The facility will be located on approximately 22 acres of vacant land within the western portion of the existing Boeing campus, located in the City of Mesa, Ariz. Tightly controlled temperature and humidification levels are critical to Boeing's manufacturing process, so controlling the environmental extremes in Arizona have been factored into all specifications.

Bel-Aire teamed up with general contractor BE&K Building Group, headquartered in Greenville, S.C., which has completed over 5 million square feet of aerospace construction across the United States.

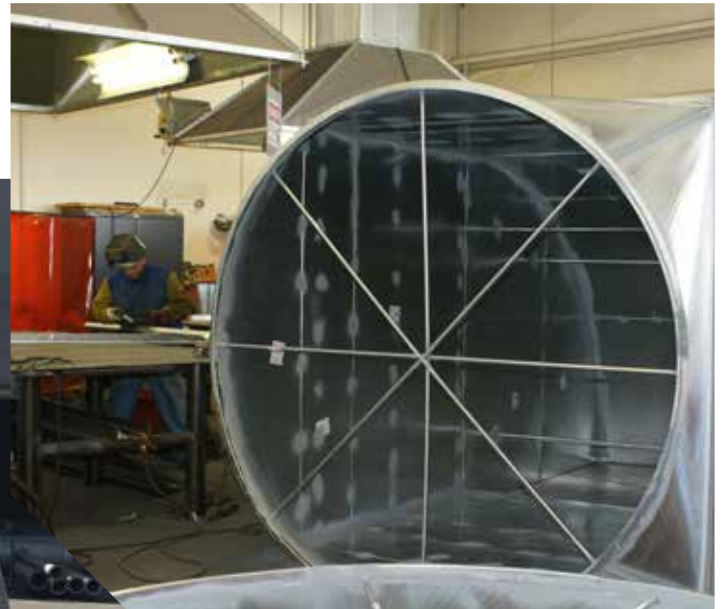
BE&K chose to partner with Bel-Aire Mechanical because "We had assembled a contractor introduction meet and greet event at a local hotel, and Robert (Dustman) came up and introduced himself and convinced me that they had the experience, technology and the resources to complete this project on-time and on budget," said Kenny

**OFF-SITE FABRICATION AND ASSEMBLY OF HVAC SYSTEMS ARE WELL UNDERWAY AND WILL BE CAREFULLY COORDINATED FOR DELIVERY TO THE SITE TO ACHIEVE 'JUST-IN-TIME' INSTALLATION.**

BAM an ideal and experienced contractor for Boeing's latest plant. BAM is also accustomed to fast-tracking project schedules.

"The project has an aggressive schedule," said Robert Dustman, Bel-Aire's project director. "The central plant is set to be substantially complete in July 2021, followed by the manufacturing building completion in November 2021."





FROM LEFT TO RIGHT: A look inside of an autoclave at Boeing's Wing Center; 60" spiral ductwork will be installed high overhead; 48" saddle installed on 72" spiral trunk; 84" round x 14 gauge welded transitional fitting.

Anderson, vice president of advanced manufacturing and distribution at BE&K. "Once we got past the business aspect, we realized that we had a few common interests, like family, fishing and hunting."

"Boeing is our number one client," Anderson continued, "We have successfully completed projects for them all over the U.S."

Dustman, too, is excited about this new relationship. "I've completed several projects for Boeing in Southern California; however, this is the first time working with Boeing in Arizona," he said. It is also BE&K's first Boeing project in the state.

Some of the mechanical highlights of the project include the 1,500-ton CUP, which will house a powerful compressed air system consisting of three, two-stage oil-free rotary screw air compressors capable of producing 781 ACFM (actual cubic feet per minute) each.

Additionally, the plant will include a liquid nitrogen farm to support the manufacturing process. The backbone of the CUP will host twin 750-ton water-cooled chillers, cooling towers and a primary/secondary pumping arrangement. With the possibility of future expansion, Bel-Aire played a proactive role in coordinating and digitally modeling the space, making sure to design routes for future utilities to include points of connection for ease of fit-up.

The manufacturing plant will be cooled and ventilated utilizing 170,000 pounds of exposed ductwork and fittings for distribution. Large duct mains up to 60 inches in diameter will drop down from the 11 rooftop air handling units and assorted fans.

The elaborate duct system will be installed at about 45 feet over head and provide the perfect industrial backdrop for this manufacturing showpiece. BAM brought in Superior Duct Fabrication of Pomona, Calif. to share the fabrication duties. There are numerous DX split systems, blower coil units, fans and a hold down vacuum system. Two computer room air conditioning units (CRACs) have been selected to provide the ideal climate for the dedicated server room.

The largest privately held contractor in Arizona, BAM is a signatory to both Sheet Metal Workers Local 359 and UA Plumbers and Pipe Fitters Local 469. BAM also employs the largest team of certified service technicians of all mechanical contractors in the state and offers start up, service, maintenance, and technical support for any mechanical system.

Jim Dinan, BAM owner and CEO noted, "We were excited when Boeing came to the valley in the 90s and quickly rose to become one of the city's largest employers, producing the Apache attack helicopters."

Bel-Aire is vigorously completing the underground plumbing systems at both buildings simultaneously to allow for the installation of overhead MEP systems. At this time, off-site fabrication and assembly of HVAC systems are well underway and will be carefully coordinated for delivery to the site to achieve 'just-in-time' installation.

"A project of this type is right in our wheelhouse and has some interesting features," Dustman said. "It's not every day that you get a chance to install an autoclave the size of a two-story house, core carving machines, trim and drill equipment and a Frekote process line." ▼



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# Experts: 2021 Will Build on Last Year's Booming Residential Market

**W**hile not likely to be a record, the HVAC and sheet metal industry should see steady demand for residential services, experts say.

After an unexpectedly strong 2020, where the U.S. housing market saw titanic shifts in consumer housing preferences, the market largely brushed off any fears about the economic impact of COVID-19, and continues to set a pace for 2021 to be another solid year for residential construction.

That's the opinion of economists and analysts with groups such as the National Association of Home Builders (NAHB), FMI Corp. and Dodge Data & Analytics. The pandemic renewed public appreciation for the charms of quiet, spacious suburban living over the noise and excitement of bustling downtowns, these experts say. Plus, the switch to working from home during the pandemic concentrated homeowner attention on convenience, comfort and safety of their own HVAC systems.

This heightened awareness of the importance of indoor air quality means SMACNA members involved in residential HVAC should find work plentiful for the year ahead, analysts said, although any unexpected setback in efforts to control the pandemic could change these predictions.

After the global pandemic shut down much of the world's economy last March, Richard Branch, chief economist for Massachusetts-based Dodge Data & Analytics, didn't expect residential construction to be so resilient.

"Single-family (construction) in 2020 had a phenomenal year," Branch said. In the fourth quarter alone, about 1.1 million units broke ground — the highest figures since 2006–2007, the height of the early 2000s housing boom.

Overall, single-family construction in 2020 shot up 14% year-over-year, according to Branch. He expects more sector growth in 2021, but at a more modest 5% level.

## ACCELERATING GROWTH, CBO SAYS

Meanwhile, the rest of the U.S. economy should continue the recovery that started late last summer after strict lockdowns to control the pandemic began to ease.

A report released Feb. 1 by the nonpartisan Congressional Budget Office predicts that the economy will grow

4.6% this year, fueled in part by a decline in the number of coronavirus cases and the related need for extensive social distancing.

The rebounding economy should be exciting news for contractors like Welsch Heating & Cooling Co., in St. Louis. But company President George "Butch" Welsch said it would be tough for this year to beat 2020.

"It was the best year in our company's history," he said, adding, "I'm almost embarrassed to tell people about it, to be honest with you."

## HOT SUMMERS HELP

The combination of a typically hot St. Louis summer combined with many people working from home for the first time created strong demand for the 126-year-old residential company's services.

## A REPORT RELEASED FEB. 1 BY THE NONPARTISAN CONGRESSIONAL BUDGET OFFICE PREDICTS THAT THE ECONOMY WILL GROW 4.6% THIS YEAR.

"With people staying home, their desire and need to have proper air conditioning in their homes became a bigger and bigger factor," he said. Many realized that their existing single-zone HVAC systems weren't able to sufficiently cool upstairs makeshift offices.

Welsch answered over 17,000 service calls and performed more than 1,000 installations in 2020.

"Our prediction is that while we may not surpass last year because it was as good as it was, we will be close to it," he said.

## ECONOMIST OPTIMISTIC BUT CAUTIOUS

Danushka Nanayakkara-Skillington is the assistant vice president for forecasting and analysis at the National Association of Home Builders. She said her organization is also bullish on the U.S. residential construction market for 2021, but the constantly evolving coronavirus pandemic makes it hard to be certain.

"I think single-family (construction) is going to continue to do well," Nanayakkara-Skillington said. "It might be slower than 2020, because 2020 was an incredible year."



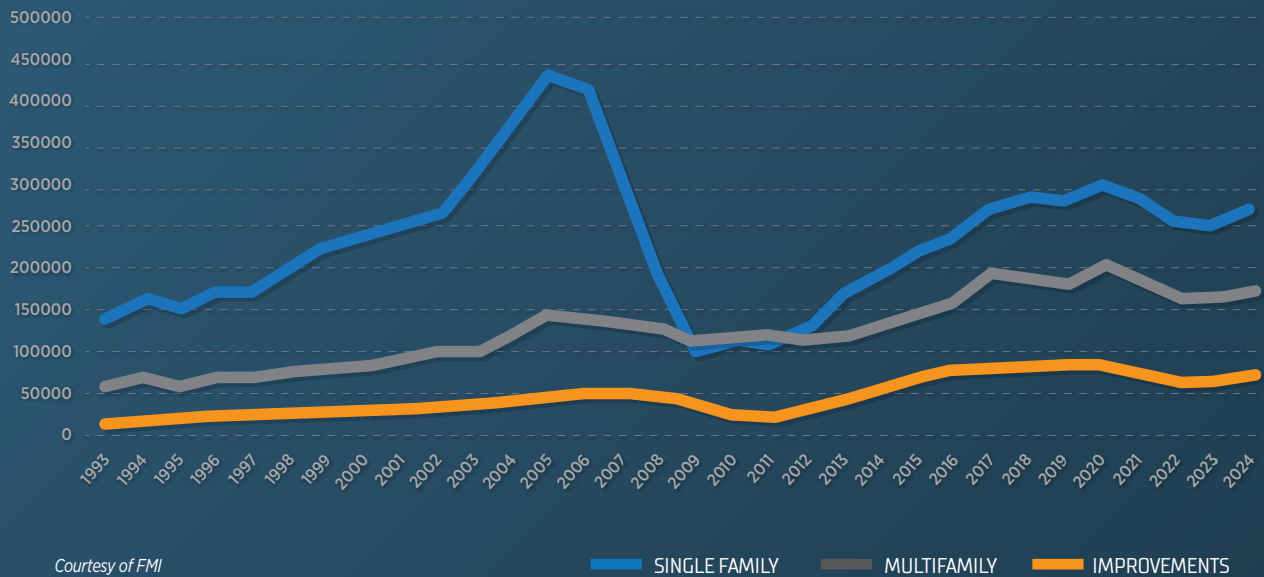
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## Construction Put in Place Estimated for The United States—Millions of Current Dollars



Nanayakkara-Skillington attributed the strong residential market to couples deciding to spend money on a house that might have otherwise gone toward a large wedding, reception or honeymoon.

Plus, older millennials are starting to enter their peak career earning years and quarantine increased their interest in bigger homes with offices and workout areas.

And that's led to an interest in residences further away from large cities, Nanayakkara-Skillington added.

"I think this (pandemic) has shown people that you can work from home," she said. "I don't think people mind commuting once a week to the office or twice a week to the office if they live a little bit further away."

And rock-bottom mortgage interest rates make home ownership cheaper than ever, she pointed out. The interest rate on conventional 30-year fixed-rate mortgages fell to under 3% during 2020, substantially increasing the average potential homeowner's buying power.

### VIRUS IS 'WILD CARD'

However, Nanayakkara-Skillington and Branch both acknowledge that their predictions assume that the U.S. gets coronavirus under control through widespread vaccination before fall. If that doesn't happen, it would change their outlooks.

"The vaccine is a big wild card for us," Nanayakkara-Skillington said. "We do expect at least 50% of the

population to be vaccinated by the end of summer, and at least 70% by the end of fall. Everything depends on that."

The COVID-19 variants from countries such as the U.K. and South Africa now circulating in the U.S. are concerning, she said. If existing vaccines don't work well against them, it could delay the expected return to a largely normal life by the end of the year.

### A DIFFERENT PREDICTION

One analyst who doesn't have quite as rosy an outlook for 2021 is Jay Bowman, the managing director of research and analytics at FMI Corp.

Bowman said FMI is forecasting that residential construction will decline 5%.

"That's probably different from what most economists are saying," Bowman acknowledged.

FMI's analysis notes that while many metro areas are doing well, a handful were particularly hard hit by the pandemic and recovery for them will take much longer.

But Bowman said SMACNA members shouldn't get too worried over the predicted drop, which he said is small enough "to almost be a rounding error."

"Even if we're only talking about a 5% decline in activity, this is a massive market," he said. 2021 will still be the third-highest year for single-family home construction in the last decade. ▼



COVER STORY

# SMACNA CONTRACTORS JOIN TOGETHER TO TRANSFORM CLEVELAND HOSPITAL

MetroHealth has been a bedrock of the Cleveland community for nearly 200 years. Founded in 1837 (one year after the city was incorporated) as a city infirmary, has grown over time into a thriving hospital system serving the people of Cuyahoga County, population 1.24 million.



The healthcare system is now undertaking a \$946 million effort to expand its services and modernize its facilities. The MetroHealth Transformation project includes what MetroHealth describes as a “reimagining” of its 52-acre main campus. It involves a new hospital and outpatient center, parking garages, and 25 acres of green space with walking paths and gardens. MetroHealth envisions the hospital becoming the cornerstone of a sustainable EcoDistrict in the Cleveland community.

SMACNA sheet metal contrac-

tors are playing an instrumental role in making the MetroHealth Transformation a success. In the process, they’re demonstrating their expertise by working through unique challenges on the high-profile project.

#### A MAJOR UNDERTAKING

Cleveland-based T.H. Martin Inc., a full-service mechanical and plumbing contractor that employs roughly 200 people, has responsibility for all sheet metal work on the MetroHealth Transformation. T.H. Martin’s work on the MetroHealth Transformation started in early 2019. It should be finished in the spring of 2022. Martin estimates that roughly 75% of the sheet metal work will involve some form of prefabrication when all is said and done. The rough-in is currently about 70% complete.

In total, the company is installing 1.8 million pounds of sheet metal for the job. The entire mechanical plumbing contract for the project was valued at \$100 million, with the sheet metal work costing more than \$16 million.

“We’ve done projects this size, but not many,” says Tom Martin, the president of T.H. Martin who serves on SMACNA’s board of directors.

“This project is huge,” says Fatima Ware, president of WTD Mechanical LLC, one of a handful of sheet metal subcontractors coordinated by T.H. Martin on the MetroHealth Transformation project, thanks in part to the relationships Martin has developed as president of SMACNA’s Cleveland chapter. In addition to WTD Mechanical, T.H. Martin has farmed out work on the project to area companies Castle Heating & Air Inc. and Fatima Construction LLC.



#### COVID-19 CHALLENGES

In addition to the sheer scope of the project, the COVID-19 pandemic has created logistical challenges for the contractors involved with the MetroHealth Transformation.

“The main rough-in on this project took place during the

checks for workers and sanitizing tools daily. Breaks for lunch and coffee have been staggered throughout the workday. Teleconferencing via Zoom with the site foreman and subcontractor partners has replaced face-to-face meetings.

Additionally, T.H. Martin had between 25 and 30 employees

### SUDDENLY THEY’RE GOING FROM NORMAL CONSTRUCTION OR EXPANSION TO GETTING THINGS READY FOR NEW SERVICES LIKE RAPID TESTING FOR THE VIRUS.

early days of COVID-19,” Martin says. “We were full-speed with over 60 sheet metal workers onsite during the summer.”

The company implemented many of the workplace safety measures that have become standard in the industry in the last year, including temperature

doing work for the job in its own shop. Social distancing and other coronavirus-related precautions forced the shop crew to work in two shifts. From April through September, the company had its shop up and running a total of 18 hours per day. Adding a second shift required

# Opening Doors for Diversity in Construction

When Fatima Ware finished her apprenticeship in sheet metal construction in 2016, she decided it was time for a change. Not for her, but for the construction business.

"I was the only person in the room who looked like me," recalls Ware, who says she was the sole Black woman out of a thousand members in her union. "I realized that the sheet metal industry needed diversity."

Ware started her own company, Cleveland-based WTD Mechanical LLC, where she serves as president, soon after finishing her apprenticeship. She describes it as an effort to "change the narrative" in the sheet metal business. WTD Mechanical specializes in ductwork installation.

Ware retained her journeyman card and still does construction work herself on occasion. For the most part, though, she manages her company and its four-person crew. WTD Mechanical is currently serving as a subcontractor on the massive MetroHealth Transformation development project in Cleveland.

Ware admits she faced a steep learning curve in starting her own business. "I bumped my head so many times because I just didn't know things like what paperwork needed to be filled out," she recalls. She credits industry mentors like T.H. Martin Inc. President Tom Martin and her involvement with SMACNA with helping her navigate the terrain of the sector.

Ware says she hopes the work she is doing now will encourage other black women to take leadership roles in the sheet metal industry.

"Going from just wearing your tools and installing ductwork to being an owner is a huge challenge," she says. "I think the impact of my work will be to open avenues for other people so that I won't be the only person in the room who looks like me."



Cleveland-based sheet metal contractor T.H. Martin Inc. is doing all sheet metal installation for the MetroHealth Transformation. In total, the company will install 1.8 million pounds of sheet metal as part of the project.

T.H. Martin to identify another shop foreman and an additional handful of workers with specific skills in areas such as fabrication and welding.

T.H. Martin also had to adapt when workers contracted COVID-19 or had to go into quarantine after being exposed to the virus. That entailed juggling the schedules for some crews and hiring new sheet metal workers from the local union.

"That aspect on such a big sheet metal job for us was challenging, but we persevered," Martin says. "It amplified the complexity."

Mike Steidel, CEO and founder of Castle Heating & Air, and VP of SMACNA Cleveland, points out that simply moving forward as planned makes the MetroHealth Transformation a unique project in the COVID-19 era.

"A lot of the work at medical facilities is either on hold or the projects have switched since COVID happened," he says. "Suddenly they're going from normal construction or expansion to getting things ready for new services like rapid testing for the virus."

## GETTING CREATIVE

In terms of the actual design and construction work, the size of the equipment being installed at the job site presented more challenges. The dimensions of some pieces of ductwork measured as large as 168 inches by 82 inches. Moreover, under its agreement with MetroHealth and Turner Construction Company, which is managing the project, T.H. Martin could only deliver materials to the job site at specific times.

"It was really tough to make sure we got the equipment and ductwork on trucks or on trailers and to the job site in a



An estimated 70% of the sheet metal work for the MetroHealth Transformation project was done via prefabrication. A work area was set up onsite to pound out the duct work and put it together.

timely fashion to make sure we could unload it in our time slots,” Martin says.

The dimensions of the structure itself also forced T.H. Martin to get creative. Essentially, the company had to ship all of the prefabricated ductwork for the equipment room on the hospital’s top floor knocked down to the job site. A work area was set up onsite to then fabricate and assemble the ductwork.

“We almost had to put a shop on the job site so we could build the ductwork, reinforce it, seal it and anything else before we installed it,” Martin says.

Given that the hospital will have multiple cafeterias once it is completed, the contractors had to contend with about 300,000 pounds of black-iron 16 GA welded ductwork constructed to handle kitchen exhaust. To reduce the amount of welding

**THE PROJECT INVOLVED WORKERS SEPARATED INTO AS MANY AS EIGHT DIFFERENT AREAS WITHIN THE JOB SITE AT ONE TIME. “ON A JOB THIS FAST-PACED AND BIG, IT WAS IMPORTANT TO MAKE SURE WE HAD THE RIGHT PEOPLE RUNNING THE CORRECT CREWS” MARTIN SAYS.**

required onsite, T.H. Martin tried to handle as much of the kitchen ductwork as possible through prefabrication.

**UP TO THE TASK**

When it comes to major lessons learned from this project, Martin says T.H. Martin witnessed the importance of finding multiple leaders who could head small teams. He points out that the project involved workers separated into as many as eight different areas within the job site at one time on the facility’s total of 14 floors. As a result, identifying “sub-foremen” to head groups of workers became paramount.

“On a job this fast-paced and big, it was important for us to make sure we had the right people running the correct crews in all these different areas,” Martin says.

Overall, executives at the contractors involved with the project all agree that being involved with the MetroHealth Transformation will become a useful selling point for attracting new clients in the future. Martin notes that the hurdles imposed by the coronavirus ultimately gave the companies an opportunity to showcase their skills: “We’re up to the task and we’re performing at a high level.” ▼



T.H. MARTIN  
[thmartin.net](http://thmartin.net)

WTD MECHANICAL LLC / FATIMA  
CONSTRUCTION LLC  
[wtdmechanical.com](http://wtdmechanical.com)

CASTLE HEATING & AIR INC.  
[castlehvac.net](http://castlehvac.net)

# Clean Rooms Critical to Pandemic Response





**Clean room projects offer SMACNA contractors the opportunity to showcase their expertise.**

In the midst of a global pandemic, construction industry hygiene practices have taken on added importance.

Regular handwashing and the constant disinfection of high-touch surfaces is now as routine as the use of masks and other safety gear in the shop and on work sites. And while that level of attention to cleanliness may not have been around all to long, there's an HVAC specialty segment where it's always been important: clean room design.

Laboratory clean rooms — so named because they're engineered to have ultra-low levels of dust, airborne contaminants and other particles — are widely used in the manufacture of computer microchips, high-definition flat screen displays and pharmaceuticals. Workers in these spaces may wear special suits, gloves and masks that protect against contamination from external sources in the environment.

Because of the unique filtration and climate control requirements of clean rooms, not every contractor has the expertise to work on such projects.

Sheet metal and HVAC companies that specialize in clean room construction, however, can find their services in high demand.

A SMACNA member with a portfolio full of clean room work is Barnes & Dodge Inc. in Lenexa, Kan. The 58-year-old Midwest sheet metal and HVAC construction contractor has performed clean room projects for major clients such as Gen-

eral Motors, AT&T, Pfizer, Bayer, Merck and the National Nuclear Security Administration.

**PANDEMIC RESPONSE**

The urgent need to increase the number of facilities for quick coronavirus testing led to a recent clean room project for Barnes & Dodge.

In spring 2020, the company was hired to quickly erect three clean rooms inside a 120,000-square-foot cross-dock warehouse in Lenexa. The building's occupant, Thermo Fisher Scientific, had recently been awarded a federal contract to manufacture "viral transport media (VTM)," which are used by hospitals and other coronavirus testing sites to safely collect and move the cotton swabs used for COVID-19 samples.

The government contract called for Thermo Fisher to increase its VTM production from 50,000 units a week up to 8 million units a week, which is why the company needed the hyper-hygienic environments. Each clean room was to contain four production lines.

The whole project was worth about \$40 million. Barnes & Dodge started work in June with a target end date about two months later.



*Assembled ductwork by Barnes & Dodge waiting for installation on 20 foot movable skids.*

Andy Phelps, P.E., a vice president of Barnes & Dodge, was one of the project managers for the Thermo Fisher clean room project. The company was responsible for putting HVAC system in the clean room also known as the "air side" of the building, Phelps said.

"Our team installed all the ductwork, all the dampers, set the air-handling units, installed the HEPA (high-efficiency particulate air) filter modules that maintain those clean room environments," he said.

With government officials eager to get accurate estimates on the number of COVID-19 cases in the U.S., the VTM project was fast-tracked. Plans were finalized only a few weeks before Barnes & Dodge started working on-site, Phelps said.

**TIGHT TIMETABLES**

"The design team only started designing the project probably about three weeks before we

started work out in the field," he said. "So there was really no downtime or time for the architect and engineer to do traditional prep work."

For Barnes & Dodge, that meant the company had to work hard and staff the project correctly to keep on the aggressive schedule. There were no shortcuts available to them. "I wish there was some super cool software out there" that makes things easier, Phelps said. "It really came down to just having enough people, both in the office and in the field to make sure that this thing kept on track. It was really, truly that fast paced."

Despite the tight timetable, Barnes & Dodge did detail work on the ductwork and accessories using 3D design and building information modeling (BIM) for installing the HVAC system, Phelps said, although there was no formal BIM coordination.

"We did utilize that technology to make sure that things were

in the right spaces (and) that we weren't going to run into any major issues in the field," he said. "And the good news is everybody had enough overhead space to actually get everything to fit without too many major issues."

Sheet metal fabrication was handled at the company's Lenexa shop. Because the duct was being put into clean rooms that would be free of contaminants, Phelps said sheet metal workers had to follow certain protocols.

### CLEANLINESS

"We made sure it was in a clean condition, capped the ends of the duct and shipped it over," he said.

Some of the ductwork for the clean rooms left the shop in lengths up to 20 feet long. Such large pieces were prefabricated



*Installation progress of return duct risers, serving cleanrooms, connecting to mechanical mezzanine above.*

and stored on aluminum skids so they could be set into place.

"We were able to do a significant amount of prefabrication on this project and put it out in the field, which definitely helped with all the work we had to do," he said.

Most of the duct for the proj-

ect was rectangular, with spiral duct being used when running out to the HEPA diffusers. The installed ductwork for the clean rooms used an estimated 51,500 square feet of sheet metal, which weighed about 72,000 pounds.

The ducts tie into 25 air-han-

dling units, which generate 163,000 cfm of airflow.

While fabrication and installation was underway, the deadline that Thermo Scientific had for the project was constantly on Phelps' mind.

"I think 'demanding' doesn't even begin to describe how quickly they wanted things done," he said. "That was the biggest hurdle that we had. We were able to stay on top of production as far as getting the ductwork into the field. Obviously we had a lot of overtime, both in the shop and in the field, where people were working seven days a week, as well at certain points of the project working multiple shifts."

Barnes & Dodge met its deadline. A grand opening ceremony for the completed Thermo Fisher Scientific facility took place in August 2020. It was attended



# SMACNA Contractor's Work Helps Power Silicon Valley Manufacturers

by Kansas Gov. Laura Kelly and other local officials. The plant is expected to eventually employ 600 people. At the ceremony, Gianluca Pettiti, senior vice president and president of Thermo Fisher's specialty diagnostics business, praised the work of those involved in the plant's construction.

"Thermo Fisher is proud to support virtually every aspect of the global COVID-19 response and our colleagues in Lenexa have played a key role in those efforts," Pettiti said. "Thanks to their hard work, Lenexa significantly increased production of VTM units. The team has worked with unrelenting intensity to build out and open a new site in just about six weeks. They understood the urgent national need, accepted the challenge and have delivered for the American people." ▼

If you have any computer equipment in your shop, home or office — and nowadays, who doesn't — odds are good that it was made by a company with its roots, or at least a major presence, in Silicon Valley.

The 50 year-old nickname "Silicon Valley," used for communities around the San Francisco Bay area, comes from the numerous computer and software manufacturers based there. Starting with Stanford University students Bill Hewlett and David Packard in 1938, the region quickly gained a reputation as a hub for technology development. From transistor manufacturers in the 1950s to the makers of computer chips and software developers in later decades, the area is home to some of the best-known computer and internet companies in the world, including Apple, Google, Intel and Cisco.

When it comes to designing and installing clean rooms for their manufacturing operations, many of those top technology companies have called on the expertise of SMACNA member Therma, a full-service mechanical contractor based in San Jose, Calif.

Therma has been working with the region's computer manufacturers since before the nickname Silicon Valley was in common use.

Clark Lowe, a principal engineer with Therma, has been involved in duct fabrication for several clean room projects for computer industry clients.

"Most of the big clean rooms we do are all silicon chip (manufacturing)," Lowe said. "Either R&D for the people making the machines or (a company) that's making the hard drives and flash drives that you use in your computer."

Ensuring that the spaces where these devices are put together are free of dust, dirt and any contamination is critically important, Clark said. Employees typically wear special suits, boots and gloves to ensure that they don't bring anything into the sterile spaces where they work.

"A speck of dust or anything can really damage the chips,"

of contamination.

"You've got to produce it clean, because it's hard to keep it clean after the fact," Lowe said. "So when we make the duct we'll clean it (and) seal the ends of our ductwork."

And making sure those chemicals and particulates stay out once the duct is



he said. "They're getting more specific about specific chemicals and particulates in the air in the clean rooms, because they're getting the architecture of the chips so fine that the spacing between the different lines on the chips are nanometers apart. So anything can kind of bridge that and destroy that chip."

To meet clients' stringent requirements, Therma built a fabrication clean room for duct and piping that will be installed in customer facilities. Sheet metal workers in there wear special clothing to minimize the chances

installed means that Lowe and the rest of the team at Therma have to design HVAC systems that can filter out particles far smaller than anyone could see with a naked eye.

"With clean rooms, one of the ways they make it 'clean' is they minimize how much outside air comes in and recirculate it all and purify it, because you can keep everything inside without off gassing certain particulates in the air," he said. ▼



Completed installation of cleanroom manufacturing space, with adjacent storage, and mechanical mezzanine above.



## LEADERSHIP

Ron Magnus

# The Hard Work: Developing People

In the last few installments of this column, we've examined the harder work of leadership — those responsibilities that are easy to put off when everything else feels like a house on fire. Last issue we looked at culture, making a case for why the senior leader must be the primary cultural architect.

Building a great culture is, in part, the result of making hard decisions about finding, keeping, and developing great people. But too often we let the urgency of our need lower our standards. "Good enough" can lead to "Good Lord, I've had enough" pretty quickly.

In his classic book, *Good to Great: Why Some Companies Make the Leap...and Others Don't*, author James Collins wrote, "The corporate leaders we studied ... practiced the discipline of "First Who": First get the right people

and ends with a mutually satisfying transition toward retirement or a second career. There is movement in the pipeline to prevent stagnation. If that image works for you, think of the different segments off the pipeline being:

- **Thoughtful recruiting/selection:** This includes not only finding and hiring top candidates, but also being a place where people want to work.
- **Deliberate retainment:** Millennials (born between 1981–1996) and Gen X (born between 1965–1980) each now make up roughly 35% of the workforce at 56 million and 53 million, respectively. Like top talent of every generation, they want to know two things: "Is there a place for me here?" and "Is there a plan for my development?" Companies who address those two issues will have the edge in attracting the talent needed to ensure a bright future.
- **Intentional development:** In previous generations, a popular approach to development was "figure it out on your own." Some do and some don't; either way, it can take years, if not decades. Job-specific skills obviously need to be enhanced. What is often overlooked is how companies gain an advantage when their people begin to grow in those interpersonal skills and leadership skills that lead to enhanced productivity. One of the most effective means of developing people is to create a culture of mentoring. The personal investment of one-on-one coaching pays rich dividends.
- **Objective promotions:** Are there opportunities for people to grow into new roles and opportunities? One of the most common complaints we hear in client interviews are stories of favoritism or nepotism being the primary factors in getting promoted, or about someone who everyone knows behaves badly, but still gets promoted. All these negate whatever core values your company may say it lives by. Those values should result in establishing transparent and fair criteria for selection for advancement within the organization.

This reminds me of the old joke. *How do you eat an elephant? One bite at a time.* Transforming your practices around talent selection, development, and promotion is the harder work of leading, but pays off as soon as you begin the journey. ▼

*Ron Magnus, managing director of FMI's Center for Strategic Leadership, with Ed Rowell, CSL consultant.*



on the bus, the wrong people off the bus, and the right people into the right seats and then figure out where to drive the bus."

A worthy ideal, perhaps. But in our industry, we still have to get stuff done. A more realistic goal, perhaps, is to create an efficient process that will, over time, significantly improve the quality of work and the development of so-called soft skills. Some of that comes from the people you hire going forward. Some will be the result of the right people leaving, and the rest will come from developing the people you want to retain.

The metaphor we use most often is to "build a pipeline." It starts where people enter our team though hiring



## FINANCIAL STEWARDSHIP

Ronald J. Eagar

# Maximizing Cash Flow, With or Without a Second PPP Loan

**T**he stricter eligibility requirements for second draw Paycheck Protection Program (PPP2) loans excluded many construction companies from the new round of COVID-19 relief. The PPP2 rules under the Consolidated Appropriations Act, 2021 state that a business must have experienced a 25% or greater decline in gross receipts in any 2020 quarter compared with the same 2019 quarter *and* have 300 or fewer employees.

Contractors who did meet the new eligibility requirements are experiencing a much slower approval and funding process this time around as a result of the SBA implementing more front-end compliance and eligibility checks, as well as the evolving nature of the documentation required to prove need for the relief. This tightened verification process has resulted in delayed application decisions of up to two weeks, or flat-out denial, leaving contractors to wonder if they can count on this influx of cash or not.

### NON-PPP STRATEGIES

Whether you end up receiving one, two or zero PPP loans, there are other avenues all contractors should be considering to ensure their businesses have enough cash on hand to weather the ongoing economic crisis.

- **Press on getting receivables collected.** The construction industry lags behind the rest of the economy, and cash collections is no exception. Normally, getting paid in 60 days is acceptable, but many accounts have lapsed past 120 days. Impress on employees the importance of cash flow its impact on the entire company.
- **Prepare a cash flow forecast.** This financial management tool, which should be conducted on both a project-by-project and enterprise-wide basis, will help identify peaks and valleys in cash flow and quantify immediate and future cash needs.
- **Consider utilizing other sources of cash.** The cash flow forecast will help you assess the need to tap into a line of credit, obtain a loan from ownership or look to alternative solutions such as equity from real estate or an equipment fleet.
- **Look into ERC eligibility.** Along with PPP2 came some lucrative changes to the Employee Retention Credit

(ERC). While the CARES Act originally restricted many PPP participants from receiving these payroll tax credits, the new law opened ERCs to all PPP borrowers and expanded the availability and maximum credit amount in the first two quarters of 2021. Look at wages before and after the covered period and any wages over the \$100,000 PPP cap. These are wages not included in forgiveness and may be creditable for ERC purposes.

### DETERMINING PP2 ELIGIBILITY

For some contractors, it will be obvious whether they do or do not meet the stricter eligibility requirements of PPP2 under the new law. But for others, it may not be so clear. If you are still unsure if your business can qualify for a PPP2 loan, it is important to understand the precise requirements, calculation methodologies, and industry-specific considerations affecting contractors' eligibility.

### REVENUE REDUCTION

A revenue reduction of 25% or more can be determined by comparing quarterly gross receipts for one quarter in 2020 to the gross receipts in the corresponding quarter of 2019. Alternatively, borrowers that were in operation all four quarters of 2019 may choose either an annual or quarterly basis for this comparison.

When calculating gross receipts for PPP purposes for a contractor, start with the normal procedures your business would use to compile this information for your CPA in preparation for the annual audit. Include costs-to-date, billings-to-date, the value of new contracts and current period over-billings and under-billings, and make all necessary adjustments to the company's books.

The simplest place to start when comparing gross receipts is the annual comparison. If your books are showing a greater than 25% reduction in annual revenues in 2020, as compared to 2019, you are in a good position to move forward with speaking to your accountant and gathering your documentation.

If the annual comparison does not show an obvious 25% or greater revenue reduction, you will want to pivot to the quarterly comparison. Start with comparing Q2

*continued on page 21*



## TECHNOLOGY

Eric Tucker

# Building What's Next: Preparing for the Next Decade of Construction



## DATA HELPS US PREDICT THE FUTURE

According to a February 2020 report by the Association of General Contractors (AGC), large infrastructure projects require an average of 130 million emails, 55 million documents, and 12 million workflows. And yet, 13 percent of construction teams' working hours are spent looking for this project data. As a result, more than 95 percent of the data collected in the construction process goes unused.



**EVERY MATERIAL, EVERY MAN HOUR,  
AND EVERY JOB SITE CAN BE IMPROVED  
THROUGH DATA.**

It's hard to imagine what construction will look like in the next 10 years. The pace of innovation is moving faster than ever. There are thousands of solutions entering construction and changing the way we build.

Looking towards the future of construction, there are two increasingly vital areas of focus: data and inclusion. For long-term success, it is important that construction workers, associations, and tech companies work together to build awareness around the opportunity that data and inclusion hold.

We are producing new data faster than ever before, so we have more evidence to rely on for informed decision-making. Companies that support the development of an inclusive workplace culture that empowers, supports, and appreciates each individual for their unique backgrounds and perspectives will reap the benefits.

Integrating the use of data and supporting an inclusive workplace won't happen overnight, but bridging the gap between transformative periods of change through education is a great place to start.

Construction companies that look toward the future as an opportunity to grow alongside change will best be prepared for what's next. Angie Simon, CEO of Western Allied Mechanical and Bay Area SMACNA Board Member, said it best, "Learn something new every day and don't be afraid of change."

The industry is creating a lot of data that can be used as a competitive advantage, but it's not anywhere near being used to its full extent. Every material, every man hour, and every job site can be improved through data.

Using data is a prime example of the power technology holds as a catalyst for profit-critical efficiencies and real-time insights. It can be difficult to know where to start.

With a distributed workforce facing new challenges when it comes to upskilling their teams, on-demand, certifiable, industry training is more crucial than ever before. Continuing education is just one of the many ways for the industry to prepare for what's next.

Procure offers a free continued education course titled Data in Construction. The five-part series delves into why data is so important to construction personnel and project success, and identifies how data can help make jobs better, safer, and easier to predict.

With a knowledge of data comes the comfort to explore what's next and embrace what's possible. Tools like predictive AI translate to advantages in the field, immersive and assisted job sites are conceivable, and with this change, come new roles and responsibilities in construction, like data managers and analysts.

Construction is evolving not just in the way we build, but in the roles themselves.

## INCLUSION GIVES EVERYONE A SEAT AT THE TABLE

Data will only be one half of the future of construction. The other piece will be inclusion. To solve the complex construction challenges of the future, you need more than a different perspective — you need a lot of them. When you invest in inclusion, you can expect more profits and more teamwork.

Companies that have an inclusive culture have greater creativity, innovation, and talent because employees feel valued, included, and as a result, more engaged and productive. The great opportunity is not only taking advantage of education on data, but also expanding construction's capacity as a leader in workforce equality.

According to the AGC Inclusion & Diversity Council, people who identify as "white" will comprise less than half of the U.S. population under 30 years of age by 2030. Currently, 63 percent of the construction industry is white.

Furthermore, 55 percent of the U.S. population and 47 percent all workers are female, and are poised to universally disrupt the traditional equity bases. Women made up 2.7 percent of the workers in construction trades and only 9.1 percent of the workers in the entire U.S. construction industry in 2017.

More inclusion is needed in construction to ensure that smart decisions are being made, and diversity is needed to ensure we unlock the value of our teams and our workforce. Companies need to be both diverse and inclusive to be competitive and successful in the 21st century. ▼

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## FINANCIAL STEWARDSHIP

*continued from page 19*

2019 to Q2 2020, when most of the mandated shut-downs took place. While any quarter can ultimately be used, Q2 2020 is the quarter that is most likely to reflect the highest reduction in revenues for most contractors.

Even if the second round of PPP funding never comes, employing additional cash strategies will be time well-spent, especially in a "cash is king" industry like construction. With so many economic, industry and project-related challenges out of the contractor's control, cash flow management is an area where you can take back much-needed clarity and direction. ▼

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## SMACNA 2021 Associate Members

### PLATINUM



### GOLD



### SILVER



## Welcome New SMACNA Members

BIM Designs, Inc	Phoenix, Ariz.
John W. Danforth	Half Moon, N.Y.
Grand Mesa Mechanical, Inc...	Grand Junction, Colo,
Hayes Mechanical	Chicago, Ill.
MECCO, Inc.	Jessup, Md.

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## SMACNA CALENDAR

### MARCH

**Mar 23**

College of Fellows Meeting  
*Virtual Meeting*

**Mar 30-31**

Collective Bargaining Orientation  
*Virtual Meeting*

### APRIL 2021

**Apr 18-20**

Planning Your Exit and Business  
Valuation Program  
*San Diego, CA*

**Apr 25-28**

Project Managers Institute  
*Raleigh, NC*

### MAY 2021

**May 16-19**

Financial Boot Camp  
*Tempe, AZ*

### JUNE 2021

**Jun 06-08**

Council of Chapter Representatives  
*Newport, RI*

**Jun 23-24**

National Joint Adjustment Board  
*Portland, OR*

### SEPTEMBER 2021

**Sep 23-24**

National Joint Adjustment Board  
*Pittsburgh, PA*

### OCTOBER 2021

**Oct 24-27, 2021**

2021 SMACNA Annual Convention  
*Maui, HI*

### DECEMBER 2021

**Dec 05-07**

Council of Chapter Representatives  
*Dana Point, CA*

### 2022

**Jan 30-Feb 1**

Chapter Executive Institute  
*Colorado Springs, CO*

**Mar 13-17**

Business Management University  
*Tempe, AZ*

**Jun 05-07**

Council of Chapter Representatives  
*Charleston, SC*

### FUTURE SMACNA CONVENTIONS

**Sep 11-14, 2022**

2022 SMACNA Annual Convention  
*Colorado Springs, CO*

**Oct 15-18, 2023**

2023 SMACNA Annual Convention  
*Phoenix, AZ*

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