

# SMAC NEWS

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## CONTRACTORS HELP HOSPITALS 'FLIP THE SWITCH' ON COVID-19 ROOMS

More than a half century ago, a clinic in Albuquerque, N.M., served as the site of medical testing for the first U.S. astronauts. Today, that same facility is playing a far different role as an emergency hospital for COVID-19 patients.

As the coronavirus began spreading across the country in the spring, Albuquerque-based Energy Balance & Integration LLC (EB&I) was tasked with helping retrofit the decommissioned medical building to handle an upturn of positive cases. *continued on page 8 >>*

## Part of the Solution or Part of the Problem

The current social unrest in the United States is impossible to ignore. No matter where you fall on the political spectrum, I would hope that you can agree that everyone — no matter their gender, race, sexual orientation, or other distinguishing characteristic — deserves equal opportunity.



As anyone who has heard me talk knows, equal opportunity for women has been something I've been working on and promoting throughout my entire career, whether just by showing up and quietly getting work done or through direct action and conversation. Not only is it a matter of equity, but it has proven to be good business strategy for Western Allied. It strengthened the quality of our workforce by attracting a broader pool of exceptional candidates and it built loyalty to the organization. It really has been a business advantage for our company.

At SMACNA, our membership and our union partners have committed to doing all that we can to provide a welcoming environment for all. And I have seen some progress on that commitment. But the construction industry still has so much farther to go to be a truly inclusive workplace. Recent incidents involving nooses, hateful graffiti and sexual assault on high-profile union construction projects highlight how much work still needs to be done before our performance matches our promises.

It's not a shock to anyone in construction that many highly qualified job candidates don't end up working in our field because of incidents like these. And we're now seeing that they aren't just embarrassing for our industry, they're also bad for our bottom lines. Our customers realize that their beliefs and values influence consumer loyalty and impact revenues, which is leading them to have less and less tolerance for these incidents. To put it simply, if this is not addressed, it will hurt our businesses.

We in organized construction should view this as an opportunity — and perhaps even an obligation — to be a part of the solution rather than perceived as part of the problem, and addressing incidents directly is the first step. We should mandate that our workplaces be free of harassment and hate crimes, and we should continue efforts to make our workforce reflective of our communities.

It will not be easy, but I know we can do this because I have personally seen and felt the positive change in my 35 years in the construction industry. We will need to work diligently, meticulously, and compassionately to keep moving forward.

I'm willing to work for this change. Who's with me?

Sincerely,

A handwritten signature in black ink that reads "Angie S".

Angie Simon  
SMACNA President



### CAPITOL HILL UPDATE

#### **Pensions Relief | COVID Deal Stalls | Great American Outdoors Act | School Retrofits**

##### **Pension Relief And Reform**

The Senate and the House left Washington without agreement on a new COVID relief bill. The stalemate is not good news for SMACNA pension efforts. The strategy for enacting Composite Plans has been to get them included, along with relief for failing plans, as part of the final negotiated COVID bill. The House-passed HEROES Act does contain pension relief and Composite Plans, while the Senate bill does not, making the negotiations process critical to SMACNA efforts.

##### **Construction Employers and a Strong Core of Building Trades Unions Continue the Fight**

With Congress adjourned for its summer break, SMACNA's lobbying team continues its efforts in D.C., reaching out to staff and members of Congress, actively rebutting misinformation from Composite Plans opponents. They continue to argue Defined Benefit Plans are the gold standard, despite over 125 failing plans and many more plans under "endangered" status. They are working for a bailout for failing plans and for





Garret Whitescarver, Chief Building Official with Washington, D.C.'s Department of Consumer and Regulatory Affairs.

discarding the Composite Plan option

SMACNA on its own, and as part of a coalition, has been actively striking back, targeting specific Republicans and Democrats and urging them to recognize the instability of the multi-employer system and consider the potentially dire consequences of not adapting to a changing economic environment.

Speaker Pelosi included Composite Plans in the House bill and Senator Grassley continues to support Composite Plans, meaning the next COVID relief package could still include Composite Plans. We remind SMACNA members to stay active and be optimistic because PPA and MPRA were both included in end-of-year legislation, so we can still get a win even if it is late in the session.

#### How SMACNA Members Can Help

Your voice matters too. Visit [www.contactingcongress.org](http://www.contactingcongress.org) to contact your Congressional delegation in Washington and help amplify our message. Arguments for Composites were included in separate SMACNA communications to Republicans and Democrats in August.

#### Congress Breaks Without COVID Deal

As talks stalemated, Senate Majority Leader

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# Code Inspections Amid COVID-19

## A conversation with Garret Whitescarver of Washington, D.C.'s Department of Consumer and Regulatory Affairs

For building inspectors, the novel coronavirus has made many of them rethink the way they approach building certifications, and even the way they interact with people on the jobsite.

SMACNews recently interviewed Garret Whitescarver, Chief Building Official with Washington, D.C.'s Department of Consumer and Regulatory Affairs. As the head of the D.C. government office that handles building inspections and permitting throughout the district, Whitescarver manages a staff of 225 building inspectors and has to figure out how to safely and efficiently continue certifying newly constructed and renovated structures while keeping his staff safe.

Previous work in the residential and commercial construction industry enables Whitescarver to have a deep understanding of the department's inspection work that continues today. Whitescarver has also been a recent guest speaker for the International Code Council on the Effects of COVID-19 on the building safety industry.

*Replies have been edited for clarity.*

**Q: How did you become involved in building inspection and code enforcement work?**

**A:** I came from a military back-

ground, then transitioned into the private sector. Most folks that get into this role start off either in the plan review section of a building department or in the inspection section. I started off in the inspection section, but then rapidly advanced because of my military officer background which helped me smoothly transition into supervision, and then in 10 short years, being in charge of the organization.

Today, the department has about 225 employees. We are involved in the initial application of permits and the review of documentation for permit issuance, which allows the construction to occur. And then we subsequently inspect the work to verify code compliance.

**Q: And that brings you in contact with SMACNA members?**

**A:** (Yes). A big part of that equation is working with the local experts, the tradespeople and trades boards to try to ensure that the standards of training on the professional-end are as high as possible so they're as aware as they can be of code requirements.

**Q: What has been the impact of the District's stay-at-home orders on your department?**

**A:** I would say, conservatively, I probably have no more than five

in the building right now originally set up to have 225 full-time employees at desk. And in any one day, I probably have no more than about 40 to maybe 50 folks that actually transition through the building in a day.

**Q: Has anyone in the department come down with coronavirus?**

**A:** We haven't had any construction inspectors — knock on wood — that have come down with it. We've had some housing inspectors come down and get positive (tests). The difference being that they were going into residential buildings rather than individual's apartments or homes.

**Q: And has coronavirus impacted demand for your services?**

**A:** Across the board, we're seeing anywhere between a 20% and 30% reduction in permit applications.

**Q: Does that mean your staff has less work to do?**

**A:** Most of all the jobs we're working on now have been in the pipeline for a while. So COVID actually did not change the production rate. We have had the capability of doing permits. As far as the processing of those requests. The fact that we're working in a virtual environment

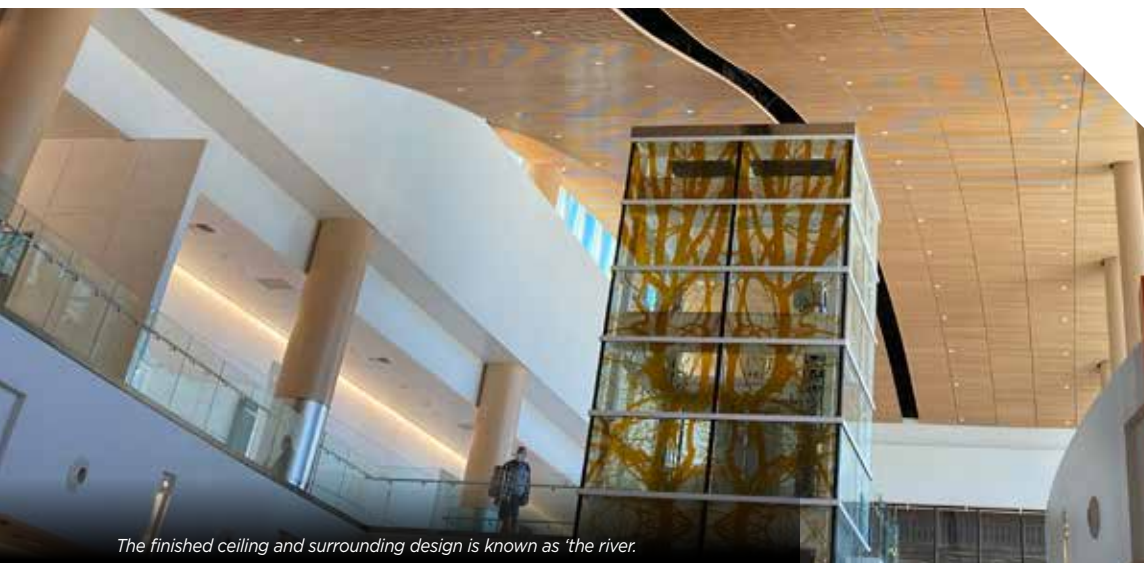
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The SEA Airport North Satellite Modernization Project will add 100,000 square feet of passenger amenities.



Twelve runs of duct and six smoke exhaust fans provide smoke control for the entire building clerestory.



The finished ceiling and surrounding design is known as "the river."

# SEA Airport North Satellite Modernization

One of the fastest-growing airports in the United States, Seattle-Tacoma International Airport (SEA) served over 50 million passengers in 2019. In 2017, the airport began an expansion of the 47-year-old North Satellite, a busy hub located three minutes by tram from the main terminal. The North Satellite (NSAT) Modernization

Project combines leading-edge engineering with natural motifs to create a high-tech space with a biophilic design — one that appeals to people's innate love of nature. "We wanted to bring light into a larger open space as a sense of place for the Pacific Northwest," says Ken Warren, NSAT Project Manager for the Port of Seattle. "The exterior design evokes a river flowing through the facility."

The modernization project is doubling the square footage of the North Satellite with 100,000 square foot of new construction tied into a 100,000 square foot refurbishment of the original building. Phase 1 added 10 new gates, and Phase 2 is renovation of the old facility. Phase 2 of the project encapsulates the 1973 structure with new construction in a "seismic hug" that will maintain building integrity in case of an earthquake. Keeping the original columns and major structural beams saves time and money, while the new construction securely braces the old and brings the whole facility up to modern codes.

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## Seattle Airport's Unique Air Pressure Problem

Prevailing winds create a negative pressure zone around the Seattle-Tacoma International Airport (SEA Airport) that used to suck noxious fumes inside the buildings every time a door opened. "We had diesel and auto exhaust from the nearby freeway, plus jet exhaust from the airport," says Ken Warren, project manager for the Port of Seattle. "We had to improve our passenger experience."

Now SEA Airport has the highest indoor air quality of any U.S. airport. "Our air is almost hospital quality, close to the purity required for an operating room," says Warren. "We even provide pre-conditioned air, which meets ASHRAE 181 standards, for the planes that fly out of our airport."

SEA Airport achieved outstanding results by commissioning a study of each building to determine the best locations to bring outside air from. Then they positioned air intakes as high as possible to collect the best air available. They use MERV 13 filters in the filtration banks and custom air handlers that range up to 100,000 CFM. To counteract local winds, they blow the filtered air into the buildings as if they were balloons, pushing any fumes out.



Murphy Co. holds regular socially-distant safety meetings.



Safety is always top of mind for workers on the job at General Heating.

# 2020 Safety Innovation Award Highlights Pride of Workers

This year's SMACNA Safety Innovation Award went to University Mechanical Contractors' (UMC) for their pride-based safety program that encourages staff to "do the right thing at the right time for the right reasons."

General Heating & Air Conditioning of Madison, Wisconsin and The Murphy Company of St. Louis, Missouri received honorable mentions.

"Construction workers are typically very proud people, and they like to be a part of something bigger and look over their shoulder and say, 'Hey, I was part of that project,'" says UMC Safety Director Kirk Baisch. "We wanted to tap into what makes people tick. When you make people proud of the safety program, they start driving the safety in all aspects, and they tend to lead the job sites, and help coach people to come along with us."

President and CEO Jerry Bush sees value in innovation. "I think there are a lot of safety programs that are doing it the way that they've always done it, and I think

to encourage and incentivize contractors to think outside the box, and do things a little differently, is a good thing."

General Heating developed a behavioral-based safety program. With approximately 40 job sites going at a time, and only three safety professionals, it made sense to have employees take an active role. Workers perform peer reviews by taking a few minutes to observe, document and correct any unsafe acts or conditions they see.

**"WE'RE PROUD TO PARTNER WITH SMACNA AND FEDERATED TO OFFER THIS TYPE OF RECOGNITION FOR A COMPANY THAT'S IMPROVING HEALTH AND SAFETY FOR WORKERS."** — RAFFI ELCHEMMAS

Jeff Hanson, General Heating's safety manager, notes that their goal was to "get safety operating on a regular basis without having a safety professional on a jobsite." By training and involving employees, they now "have 200 or 300 at-risk behaviors being corrected

every year that normally safety would never see or correct."

The Murphy Company has a Total Work Health initiative focusing on employees' physical, mental and overall life health. They have developed multiple programs offering information about addiction, depression and maintaining a healthy lifestyle.

Rick Reams, vice president of Safety and Quality at Murphy, says they care about their employees "24 hours a day, not eight hours a day. We've spent over 100 years

courage to seek help when they need it.

Raffi Elchemmas, national health and safety manager for Milwaukee Tool, one of the sponsors, says the award is "an opportunity for SMACNA members to drive towards being the best and being recognized for that. We're proud to partner with SMACNA and Federated to offer this type of recognition for a company that's improving health and safety for workers."

Nathan Oland, senior national account executive at Federated Insurance, notes that, "SMACNA's members have always been safety leaders. The companies recognized are willing to share their safety best-practices for the betterment of all contractors, which is a testament to the culture of both their business and SMACNA."



UNIVERSITY MECHANICAL  
[www.umec.com](http://www.umec.com)

GENERAL HEATING & AIR CONDITIONING  
[www.generalheating.com](http://www.generalheating.com)

MURPHY COMPANY  
[www.murphynet.com](http://www.murphynet.com)



Day Heating installed this residential duct work in Salem, Oregon.



Tucker Heating has seen a large jump in HVAC replacements in 2020.

# HVAC Customers Seek Improved Indoor Air Quality

**A**cross the United States, residential contractors have seen an increase in business as clients adjust to the COVID-19 pandemic. “Our customers are stuck at home this summer, so any problems with their HVAC systems are more evident than ever before,” explains John Zipf, president of Zipf-Air Inc. in Kirkwood, Missouri. “One customer recently spent \$30,000 — three times our average order — to upgrade his home system. He said he’d worked hard all his life and had earned the right to be comfortable.”

Rick Lazzarini of Degree HVAC, Inc. in Redwood City, California agrees. “The feedback we are getting from our customers is that the climate is much warmer than they recall it being in the past, and they don’t want to tough it out anymore. Also, there are more people working from home instead of in air-conditioned offices, making dependable HVAC a requirement rather than a luxury.”

Many customers want to invest in better indoor air quality. Jim Klopfenstein of Day Heating Company in Salem, Oregon finds

that sometimes they request an accessory he can’t endorse. “We want to be very careful with customers’ trust,” he says. “We don’t make any claims unless the product manufacturer makes the claim. If a customer is concerned about viruses, we only recommend products that specifically address viruses.” Fortunately, many accessories meet that standard, including UV lights, high-rated filters, hydrogen peroxide scrubbers, and ionization units.

The supply chain is struggling to keep up with high demand. “Since the factories were shut down or continue to work with skeleton crews, the pandemic has had a negative impact on the supply chain of furnaces, indoor AC coils, and condensing units,” explains Ernest G. Tricarico, owner of Skyline Heating, A/C and Sheet Metal, Inc. in Denver Colorado. Crucial parts might be on back-order for weeks at a time.

“Nitrogen seems to be in short supply around us as well,” says Scott Tucker, co-owner of Tucker Heating and Air Conditioning, Inc. in Middleton, Ohio. “Some indoor air products that we installed in the past are due for replacement

cells. We ordered the cells in March, but they gave us a ship date of late August. It’s hard to tell a homeowner that we installed this ultraviolet light to help clean the air in the house, but the replacements are not available.”

Russ Kimball, owner of Evergreen State Heat and AC, in Everett, Washington, is using the current rush of business to strengthen his company’s long-term financial stability. “I’m following advice Thomas C. Schleifer, Ph.D., gave at past SMACNA conventions,” Kimball says. “We stay debt-free by owning all of our vehicles, I’ve restructured to lower our cash outflow, and I’m watching overhead in the office.” These strategies will help keep Evergreen strong no matter what happens next.

Randy Novak, president of Novak Heating and Air Conditioning in Hiawatha, Iowa, is also drawing on SMACNA to manage his business in unpredictable times. “I’ve relied on my SMACNA peers for 34 years,” he says. “I can’t replace them. We’ve always called and emailed each other about how to solve the problems we face, and for the last

few months we’ve focused on coronavirus. This constant flow of ideas doesn’t just help you run your business. It brings peace of mind because you know you’re designing protocols with the best contractors out there.”

While many industries are faltering due to pandemic precautions, the residential HVAC market is growing. Across the U.S., contractors anticipate further expansion in the third and fourth quarters. “People might get by without air conditioning in the summer,” Novak says, “but they can’t do without heat in winter.”



ZIPF-AIR INC  
[zipfair.com](http://zipfair.com)

DEGREE HVAC  
[degreehvac.com](http://degreehvac.com)

DAY HEATING  
[dayheating.com](http://dayheating.com)

TUCKER HEATING AND AIR CONDITIONING, INC  
[tuckerheating.com](http://tuckerheating.com)

EVERGREEN STATE HEAT AND ACL  
[www.essmwa.com](http://www.essmwa.com)

NOVAK HEATING AND AIR CONDITIONING  
[www.novakheating.com](http://www.novakheating.com)



One of the two bays at the 133,280 sq. ft. hangar used for stripping and painting aircraft.



Sheet metal workers running 54" diameter takeoffs from an 84" diameter exhaust riser.



MATHERLY MECHANICAL  
[www.matherlymech.com](http://www.matherlymech.com)

TINKER AFB  
[www.tinker.af.mil](http://www.tinker.af.mil)

# Contractor Goes Big with Air Force Corrosion Control Facility Upgrade

**M**atherly Mechanical's facilities upgrade at Tinker Air Force Base is big on numbers. Here are some of the notable ones.

## 549,743 CFM

They say a picture is worth a thousand words, but for SMACNA contractors, a number can be more telling. 549,743 CFM (cubic feet per minute) is the supply air flow rate at Tinker Air Force Base's (AFB) Building 2280. Such a high CFM usually indicates a project for a very large space.

When Matherly Mechanical's Mike Clark got word that they were going to upgrade the HVAC

systems at Tinker AFB's industrial space, he knew there would be some big numbers. Clark, vice president for sheet metal at the Midwest City, Oklahoma-based Matherly, has led many projects at Tinker in nearby Del City, so he was familiar with Building 2280. It is a 133,280 square foot, two-bay hangar for stripping and painting giant B-52 bombers, which is necessary to control corrosion on the aircraft.

Clark noted that the scale of this project is also measured by its importance to the U.S. Air Force. "The B-2280 Corrosion Control Facility is a very vital building at Tinker Air Force Base," he said. "This facility runs two shifts year round and always has a waiting

list of aircraft that need to be refinished. It was a pretty good juggling act to do this project, with such a high demand."

Matherly took a staggered approach, doing one bay at a time, so the Air Force could still bring in some B-52s for maintenance.

## 168,397 MMbtu

That's the estimated annual gas savings (in millions of British Thermal Units) that will be achieved with the Building 2280 upgrades. Climate control in a huge facility like this is typically expensive, but the primary goal of the retrofits is energy efficiency. The project is part of a base-wide \$243 million energy efficiency initiative. In total, the overall effort aims to save Tinker \$626 million in energy and operational costs over 21 years.

"The central base steam plant had massive amounts of return condensate leakage in the system which made it very inefficient," Clark said. "The gas savings are from converting the steam heating source from a central plant to five Hamilton high-efficiency, full-modulating condensing boilers, and seven heating water circulating pumps onsite," says Clark.

"We are also cutting electrical consumption by reducing the airflow rate, and by recirculation a 70 percent of the indoor air in the winter and summer months," Clark continued. "The prior design was 100 percent outside air with no recirculation. The total savings on the project are an estimated \$2.5

million in operations and maintenance per year, and around \$1.5 million in energy annually."

Both bays were finished and commissioned in March 2020. Clark said it took three months in each bay to demolish the existing systems, leaving only eight months per bay for new installation. New equipment includes an Energy Management Control System (EMCS) and Demand Control Ventilation.

"Honeywell provided the smarts and parts, while Matherly did all the setup, testing and balancing," Clark explained.

The EMC is programmed so that Air Force technicians can preset environmental specs for seven different modes: depaint, paint, cure, prep, general maintenance, unoccupied, and off.

The following specs are the targets for bay 2 paint mode:

- Cooling Temperature (°F): 78
- Heating Temperature (°F): 70 High
- Relative Humidity (%RH): 55
- Low Relative Humidity (%RH): 30
- Static Pressure ("WG): -.05
- Total Supply Air Flow Rate (CFM): 283,165
- Outside Airflow Rate (CFM): 78,166
- Recirculated Airflow Rate (CFM): 204,999
- Exhaust Airflow Rate (CFM): 97,135

These various modes of climate

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COVER STORY

# CONTRACTORS HELP HOSPITALS 'FLIP THE SWITCH' ON COVID-19 ROOMS

continued from page 1

The challenge: Convert the vacant Gibson Medical Center into a negative pressure environment with 200 beds to isolate patients infected with COVID-19. Essentially, that means configuring air flow in patient rooms so that coronavirus contagions inside the rooms can't escape.

"You basically have to switch the hospital room 180 degrees from what it was built to do," says Tony Kocurek, owner of EB&I, which provides testing and balancing services for commercial HVAC systems.

Across the country, sheet metal and air conditioning contractors like EB&I are assisting health officials and hospitals as they flip the

switch on their facilities to deal with surges of local coronavirus cases.

## Going Old School

Mechanical and industrial construction firm Murphy Co. has worked with some of the major health systems in the St. Louis area this year to address coronavirus challenges. Dan Leath, an institutional HVAC manager at Murphy, describes the process as "old school design on the fly."

Leath notes that the design principles mirror standard isolation rooms in medical buildings. Typically, hospitals design isolation rooms to protect patients with compromised immunity systems. The rooms are therefore "positively pressurized" with higher air pressure than surrounding areas — the better to push outside air flow away from the rooms. That limits the potential for contagions, such as the flu virus, or MRSA, to



enter the rooms and infect the occupants.

Yet, with a highly infectious disease like COVID-19, hospitals are actually trying to do the opposite — keep the air inside an isolation

room from seeping into surrounding areas. To do so, exhaust helps draw air into the room from the hallway and ventilation systems and push the air from the patient rooms out into the atmosphere. The air particles circulating in the room are then expelled out so they can't escape into adjoining rooms and hallways.

"This negative ventilation helps draw the air in and take it out of the space to protect everyone outside that specific room where that patient happens to be. You don't further spread the virus by recycling the air and blowing it into the room next door,"

**THE CHALLENGE: CONVERT THE VACANT GIBSON MEDICAL CENTER INTO A NEGATIVE PRESSURE ENVIRONMENT WITH 200 BEDS TO ISOLATE PATIENTS INFECTED WITH COVID-19.**





“THIS NEGATIVE VENTILATION HELPS DRAW THE AIR IN AND TAKE IT OUT OF THE SPACE TO PROTECT EVERYONE OUTSIDE THAT SPECIFIC ROOM WHERE THAT PATIENT HAPPENS TO BE.”

— MATTHEW SANO, FISHER BALANCING CO



*Gibson Medical Center maximized the number of negative air pressure rooms with EB&I's help.*



explains Matthew Sano, president of Fisher Balancing Co., based in Williamstown, New Jersey. Fisher Balancing is working with health systems around the Philadelphia area to adjust their HVAC systems to deal with COVID-19 patients.

Finally, air from inside the isolation room may go through a dilution process before blowing out into the atmosphere. Alternatively, a filtration system might trap the air particles to be treated as hazardous waste.

#### Shifting Scale

Contractors are finding that projects to COVID-proof hospitals



*Fisher Balance employee Dane Gresko uses Evergreen Telemetry equipment to establish and read proper airflow in areas with high ceiling installation.*

come in all shapes and sizes. Some like EB&I's project in Albuquerque involve spaces for hundreds of patient beds. In other cases, contractors are assisting with planning for potential outbreaks.

For example, Alliant Systems, based in Portland, Oregon, is advising Skyline Medical Center, a critical access hospital with 25 patient beds in White Salmon, Washington. According to Alliant founder Chris Miller, hospital administrators were looking for solutions that enable them to switch over a portion of their rooms quickly. “The hospital is trying to figure out a way to create a negative environment in those rooms in case they need to put COVID-19 patients there,” he says.

Alliant created a small, single-duct passage through the exterior of the hospital building. In the event of a coronavirus case, the hospital can install a machine in the patient's room to create a negative pressure environment by hooking a flexible duct up to the wall passage.

# Code Inspections

*continued from page 3*

didn't change our overall productivity at all. So we have the same number of inspectors we had pre-COVID. We have the same number of plan reviewers pre-COVID. The department is all functioning as if we were in this building. We're just not physically here anymore.

We don't really have a backlog at all. It only takes a day or so now to get to a job site. If it picks up, we could get back into typical delays.

One thing that's different in the District of Columbia than other areas is that we heavily outsource inspections to third-party companies. If the district can't get to you fast enough, you can outsource to a third-party company. You pay for that, or your client would pay for the outsourced inspection, but you can do it without any delays.

**Q: Some jurisdictions have moved toward virtual building inspections as a way to minimize personal contact during a pandemic. Has your department explored this?**

**A:** It's only for lack of a vision on our part that we haven't really figured out a real good way to do virtual inspections for construction very well. Now there could be an exception (established) for the HVAC industry. For instance, we've had an exception for quite a while in the solar industry.

We've allowed the solar installers to take photos and to be available for FaceTime-type of inspections. When they're up on a roof doing a solar panel, and we've tested that environment and we're satisfied that we can satisfy the code requirements without necessarily being on site.

Now I can see portions of the HVAC industry, how that same philosophy could carry through. We haven't pursued it heavily because we still have inspectors in the field doing their construction inspections.

But I think there is an opportunity here, if we can create one, where

certain specialty industries, such as the HVAC industry could transition into more virtual environments to the benefit of both the jurisdiction and the contractors. If you think about it, if you don't have to wait for an inspection, you can just basically call up somebody and your inspection is instant. As soon as you get on FaceTime, you're instantly available to an inspector and can get your work done.

There's no sitting around job sites waiting for inspectors. There's no waiting at the curb, you know, in your truck waiting for an inspector. All this can be done real time and do the advantage of the jurisdiction. You're working with the person who actually did the install and not somebody the company hired to wait for the inspector.

**Q: How would an industry like HVAC pursue virtual inspections?**

**A:** To pursue this, I would encourage the HVAC industry to reach out to specific jurisdictions because that's what the solar industry did, and they worked out a method for doing virtual inspections. Each jurisdiction, each building official out there, has the authority to decide if this is the direction they want to go in or not. But the building officials all talk, just like industry talks to one another. And so, if a trend developed, there are leadership jurisdictions, and there's ones that go along with the ride. If the industry can work with local jurisdictions, the larger ones, and get it as an established policy or practice of how they're going to perform these virtual inspections on site for the HVAC industry... And maybe just niches within the HVAC industry — like residential — could work with those jurisdictions. And then have those jurisdictions publish the methodology that they've cited through the International Code Council.

If you do that, other jurisdictions will pick up on it and you could see a wave change through the

"It's not a permanently installed solution, but it's for a small, critical access hospital that has very limited funding," Miller says. "It seems like that approach fit the bill pretty well for its needs."

## Flipping Back

Of course, while contractors are working now to design medical facilities to deal with the coronavirus, the day will inevitably come when the pandemic subsides. In fact, hospital systems and contractors are already contemplating what it will look like to flip negative pressure rooms back to regular air flow systems.

Not surprisingly, Sano says newer HVAC systems are better suited to switching back and forth between negative and positive pressure. Older systems require more physical manipulation of their equipment.

"On the older systems, you're doing more physical things like getting up into the ceiling and moving dampers to move that air around," Sano says. "You don't have the sophisticated controls at your disposal."

One natural area of concern will be the condition of the ductwork. "Now you've got the potential that whatever virus might be in the rooms or the air stream is in the ducts," Leath says.

According to Leath, indications are that the coronavirus can remain viable on galvanized sheet metal for multiple days. "Out of an abundance of caution, hospitals may want to consider going through and doing a thorough cleaning of their ductwork, before returning to recirculation."

Otherwise, the scale of the project will likely play a big part in determining what issues pop up when hospitals start converting rooms back to positive pressure. If a hospital converted a handful



of rooms to COVID-19 isolation units, Kocurek says he expects a frictionless transition back to their normal status. "That's a simple change because you readjust the air flows so that instead of more exhaust than supply, you have more supply than exhaust in the rooms," he says.

Flipping over a project like EB&I's retrofit of the Gibson Medical Center, on the other hand, would take more effort and resources.

"There were huge mechanical changes that were made. An exhaust duct was taken out. Air-handling systems were changed to go to 100% outside air going into these rooms," Kocurek says. "Hospitals have to decide if they want to pay to convert that back."



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industry from an HVAC contractor's perspective, and the jurisdictional perspective and change paradigms, if you will, on how inspections can be conducted.

**Q: Are there any technical challenges related to virtual inspections of these building systems?**

**A:** One of the things that makes construction inspections difficult is that you can only see what the camera's pointing at and often the things you catch as an inspector, are the stuff that no one's really looking at.

But the HVAC industry is one of those unique niches where you're looking at specific pieces of equipment. You're not looking at all the framing in a building, you're looking at specific pieces of equipment. Did you attach this safety device? Did you attach the ducts safely? Did you ground this? Did you test this? That kind of thing.

I think that industry, just like the solar industry, lends itself to being able to transition to a virtual environment, much easier than others.

**Q: Do you think most parts of an HVAC inspection could be handled remotely?**

**A:** There could be certain things that would have an exception. Say, like a light test for a type 1 hood duct. I'm not sure how you'd do that with a camera and catch every pinhole light that there is. But the more people from the industry and the more the jurisdictions get used to the capabilities of the system, the more trust and faith there would be that we can get this done together.

Once you've done a few of these virtual inspections, there's nothing I like more than being with some kind of master technician who can, who can point things out that I didn't even know as a code professional. And so having that kind of person on the camera pointing to things that he wants to point out and then have an inspector point to things that he's interested in looking at, we can get a lot smarter as an industry.

**Q: Has the pandemic changed any of your safety practices?**

**A:** The notion of what is safe on a jobsite has changed significantly. As you know, the overall industry's idea of safety now, a lot of it's revolved around PPE. In the past, it's been around ladder safety and all these other safety items, but now PPE is the number one thing

a pretty harsh judgment as far as staying home (not working). And they've, been given the nod to stay at work during this whole thing. None of the construction industry in the district has been adversely impacted by a jurisdictional order not to go to work. And I think as an industry, the evidence shows that they've pretty much respected that

**"I THINK WE'LL KEEP THE VIRTUAL ENVIRONMENT GOING. AS AN INDUSTRY, WE STARTED TALKING ABOUT VIRTUAL ENVIRONMENTS TWO YEARS AGO IN REGARDS TO HOW WE COULD DO INSPECTIONS MORE QUICKLY AND EFFECTIVELY."**



that has impacted my business, just making sure that the inspectors are equipped.

**Q: Are you enforcing PPE rules on the job site?**

**A:** Absolutely. Every inspection, we have certain criteria of having hand-wash stations, cleanliness and PPE use as promulgated by the mayor's office, and our inspectors are looking for that as well. We have had some sites where we've had to admonish them. We haven't had to shut down any job sites yet, but we're fully prepared to do that.

Most job sites realized that they could be on the receiving end of

position and are taking the necessary steps to protect their folks.

**Q: What do you think will be the lasting impact of the pandemic on building inspections and code inspection practices?**

**A:** I think we'll keep the virtual environment going. As an industry, we started talking about virtual environments two years ago in regards to how we could do inspections more quickly and effectively.

The technology will continue to progress in that direction. In the HVAC industry in particular, you're going to see building owners and business owners sharing an inter-



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DEPARTMENT OF CONSUMER  
AND REGULATORY AFFAIRS  
[www.dkra.dc.gov](http://www.dkra.dc.gov)

est in creating HVAC systems that give confidence to the workforce returning to the workplace as opposed to working remotely.

And so I think the industry is going to have all kinds of new demands on it to take, say, the plenum supply or return and change designs in buildings. I think there will be a lot of interest in the air quality going into buildings and the air movement within buildings.

There should be a whole new respect for the industry. Your industry should be getting a real shot in the arm. It's been one of those things that's probably just an afterthought before the pandemic, but now the whole airflow system is being looked at as far as individual safety and individual comfort.

You guys are sitting in a real good spot.

*U.S. cities and counties currently conducting virtual inspections are listed on the ICC's website at [www.iccsafe.org/advocacy/coronavirus-response-center/virtual](http://www.iccsafe.org/advocacy/coronavirus-response-center/virtual).*

# The SMACNA **EDGE** A Virtual Education Forum **Conference** October 13-15, 2020



## THE SMACNA **EDGE** **CONFERENCE** PROVIDES UNMATCHED EDUCATION AT AN EXCEPTIONAL VALUE

When the COVID-19 pandemic resulted in the cancellation of SMACNA's 77th Annual Conference, SMACNA leaders were faced with a difficult dilemma.

*How could SMACNA still deliver timely and meaningful educational content to members, along with the opportunity to speak directly with Premier Partners and Associate Members about their products, in an environment that fosters networking and fellowship?*

The SMACNA Edge Conference: A Virtual Education Forum is the result. This fully virtual event will provide attendees with a truly memorable learning experience that includes presentations on current economic data and forecasts, technical trends, project management, leadership, and other pressing challenges facing you and your organizations — along with solutions to those challenges — delivered by the most experienced and trusted experts in the industry. Ample time will be given at the conclusion of these presentations for question and answer sessions directly with the speakers.

SMACNA has also taken the unprecedented step of offering members the opportunity to register all of their employees for the conference, providing an important learning opportunity to individuals at all levels in their organizations.

Additionally, the entire The SMACNA Edge Conference will be recorded and available on-

demand for attendees to access through January 15, 2021, providing attendees unlimited flexibility to view sessions at their convenience, in the event they are unable to attend the live conference.

The SMANCA Edge Conferences program also includes three days of roundtable discussions (hosted in SMACNA's tradeshow booth in ) where SMACNA member contractors can speak directly with their fellow contractors about important topics while catching up with industry friends and acquaintances, all in the completely digital Edge Conference environment.

Attendees will be able to visit The Edge Conference Exhibit Hall all three days to view the newest products, latest innovations, and relevant business solutions from more than 30 industry suppliers and service providers. The Exhibit Hall will be open during the entire Edge Conference, with staff from exhibiting companies on hand to answer questions and demonstrate products and services.

In these unprecedented and often challenging times, SMACNA is ready to deliver the information that Members and their employees need in order to remain on the cutting Edge. Register yourself and your staff today by visiting [www.smacna.link/register](http://www.smacna.link/register).

We look forward to greeting you!

# THE SMACNA EDGE CONFERENCE SCHEDULE

## TUESDAY, OCTOBER 13

### Opening Remarks



Angie Simon  
President  
SMACNA



Vince Sandusky  
CEO  
SMACNA

### Return of the Economist: COVID-19 Economic Update



Anirban Basu  
CEO  
Sage Policy Group

### SMACNA's System Air Leakage Test Standard: Aspects to Testing an Entire HVAC System



Mark Terzigni  
Director of Engineering & Technical Resources  
SMACNA

### Advanced Enterprise Budgeting and Forecasting



Michael McLin  
Managing Director  
Maxim Consulting Group

### Apps for Construction – The Five Workflows to Digitize for Your Construction Company



Rob McKinney  
Sales Engineer  
eSUB

### Leadership Lessons Learned in an Evolving Environment



Chad Bunting  
President  
Schoppe Co., Inc.



Matt Cramer  
President  
Dee Cramer Inc.



Carol Duncan,  
Owner & CEO  
General Sheet Metal



**MODERATOR**  
Tom Martin  
President  
T.H. Martin, Inc.

## WEDNESDAY, OCTOBER 14

### Crossing the PPP Finish Line/New Business Program



Ronald Eagar  
Chief Operating Officer  
Grassi & Co.

### Strategic Selling: A Systematic Approach to Winning Work in Complex Competitive Environments



Eric Anderton  
Construction Genius Podcast

## WEDNESDAY, OCTOBER 14 (CONT'D)

### How HVAC Systems Impact COVID-19 Transmission Based on Scientific Evidence



Steve Taylor  
Principal  
Taylor Engineering

### New Horizons Foundation Project Update – Field Leadership Succession



Ryan Quigley  
Leadership Consultant  
FMI

### Labor Update



Joe Sellers  
SMART General President

## THURSDAY, OCTOBER 15

### Change Order Management for Field Supervisors – it Takes Teamwork



Stephane McShane  
Director  
Maxim Consulting Group

### Turning Field Obstacles into Opportunities



Andy Patron  
Principal Consultant,  
Aboveboard Consulting, LLC

### Effectively Supporting the Field – A Self Assessment



Andy Patron  
Principal Consultant  
Aboveboard Consulting, LLC

### Driving Project Success in a Remote Working Environment



Stephane McShane  
Director  
Maxim Consulting Group

### Closing Remarks



Angie Simon  
President  
SMACNA



Vince Sandusky  
CEO  
SMACNA



## Finding Balance Between Me and We

In a recent blog post, writer Stephen Pressfield posed an interesting question from ancient martial law. Why did the Spartans punish a warrior who lost his helmet or breastplate in combat with a fine but punish the man who discarded his shield with death?

“Because helmet and breastplate are worn to protect the individual alone, but the shield is borne to protect the whole line,” Pressfield writes.

Known for their discipline and teamwork, a formation of Spartan warriors engaged the enemy first with a wall of shields, each protecting not only an individual, but overlapped with the shield on each side. Whether in a defensive or offensive position, as long as there was no breach in the line, they maintained the advantage behind this incredibly flexible but strong barrier. But if just one warrior lost focus, the wall quickly collapsed.

While Pressfield’s article was speaking to issues of public health in the midst of a pandemic, it made me think about what a parallel mindset for leaders in our industry might look like.

Whether you are talking about your company’s engagement on a prestigious megaproject or a lone service tech making a routine call, all of us have to manage the tension between individual recognition and collective success. Pride in personal achievement is applaudable — so long as it doesn’t come at the expense of other people and the organization as a whole. A few examples might help.

- Think about the way many of us talk. My company. My division. My project. My truck.
- What do we typically hear when people talk about a successful project? In most cases, a handful of people get the public accolades (and financial reward), and everyone else who had a hand in the success are left unmentioned.
- We see it in safety protocol, when an individual takes a shortcut because he is young and feeling bullet-proof, with no regard for the ripple effects on family,

co-workers and the organization should a job site injury or death occur.

All that is to say, many of us lean toward the individualistic end of the spectrum. What I’m advocating is not an either/or scenario, but the wisdom to notice when “Me” starts to overpower the “We” mindset and a correction is needed. We start with our own mindset, then the other leaders in our organization, and then by looking at all the individuals who are part of our organization.

For example, an owner might ask, “In what ways am I holding a shield that protects and equips the people around me?” Or “How do I reward team-first behaviors?”

An organizational leader might

ask, “What are some practical ways I can better communicate the reality that it takes all of us to complete a great project?” Or “How do I guide our high achievers to adopt a more team-first mindset without losing their focus on excellence?”

An individual contributor could ask, “How does my day-to-day work impact other people around me in both positive and negative ways?”

The language of war is often deployed in times of great cultural upheaval. In this battle to survive in the time of COVID-19, we need to craft and communicate powerful collective messages that achieve our objectives and call out the very best in every single person. Now more than ever, the power of “We” will prevail over the power of “Me.” But it won’t happen without leadership taking us there.

Let’s prevail together.

**“PRIDE IN PERSONAL ACHIEVEMENT IS APPLAUDABLE — SO LONG AS IT DOESN’T COME AT THE EXPENSE OF OTHER PEOPLE AND THE ORGANIZATION AS A WHOLE.”**

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





## Employee Stock Ownership Plans Come with Both Risks and Rewards

Maybe you're thinking that your business is not valuable to a third-party buyer. Maybe you don't want to deal with the sales process, or perhaps you don't have the next generation to pass it to. So, what are your options?

Many owners wonder about the options, risks, and rewards of selling their business to a key employee, a group of key employees, or even an employee stock ownership plan (ESOP). The idea of an inside sale has made for very successful transition strategies for many construction companies and may also be the right solution for you. Here are some considerations to take into account when evaluating the ESOP option.

### An Inside Sale

Owners typically prefer to sell to someone they know *and* someone who wants to continue their legacy by running the business in a similar fashion with the people who helped build it. They often want to see their company go to a person who has been with them for a long time, someone who knows the employees, understands the company's culture, and has the relationships and trust of the employees, vendors, and customers.

This type of transaction is called an inside sale. The process is more about facilitating a transition within the company than negotiating a transaction with an outside buyer. The reality is these types of sales

take more time to execute, but provide the most creative deal structure options for both parties. The parties still need to negotiate, and they still transact a deal, just in a very different way.

Selling to a key employee means that there is only one buyer, so the process focuses more on deal structure than sales price. Price is always important, but tax consequences, payment plans, retirement plans and continuation agreements all provide different ways to pull money out of the company. The business only

**“OWNERS TYPICALLY PREFER TO SELL TO SOMEONE THEY KNOW AND SOMEONE WHO WANTS TO CONTINUE THEIR LEGACY BY RUNNING THE BUSINESS IN A SIMILAR FASHION WITH THE PEOPLE WHO HELPED BUILD IT.”**

generates so much cash, so the more creative the parties are the better deal that can be facilitated. Typically, the terms of this type of sale require more seller financing and have little security. The payment plan is contingent on future profits, and both parties will have to share the risk.

The number one challenge in this type of deal is that this buyer has no money. In addition to having no cash at close, they have no bonding availability, no CEO expe-



rience and have not been trained to take over the role.

This shouldn't stop you.

Just be aware that post-close involvement by the owner requires significant financing, mentoring and continued operational support by you for years.

Typically, neither the owner nor the employee has ever sold/bought a business before. This type of deal puts more risk on the seller than a typical outside third-party sale. Owners think this type of

ask yourself these three questions:

1. Do your key employee(s) have the experience, leadership, street smarts, loyalty, work ethic, integrity and grit to generate enough profits to pay for the business over the next 7 to 10 years?

2. Are you prepared to finance, coach, mentor and put your personal wealth at risk until the new owners can accumulate enough wealth to cover the bond, A/R, and line of credit needed to operate the business?

3. Do you (and especially your spouse) have the patience, faith, trust and confidence that once you give them the control, that they will make their debt payments over the next 7 to 10 years without you being involved?

An inside sale to a key employee (or employees) or an ESOP can be your best exit strategy. The process allows for more creativity, continues your legacy and facilitates a win-win. The reality is that an inside sale takes much more time, requires extensive planning and more continued involvement after the sale. You also have the satisfaction of mentoring good, smart employees, providing wealth transfer to the next generation of workers, and watching your employees and the business flourish.

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*John Ovrom is the founder and CEO of Exit Consulting Group.*



## The Tech Has Arrived. Your Move, Contractors.

The coronavirus has delivered one massive change order for both contractors and construction technology providers. Disruptions in supply chains, new safety protocols, remote work, and major project shifts have forced SMACNA contractors to improvise, adapt, and overcome in remarkable ways. Construction software companies have also been busy, seeking to catalyze a major digital shift.

“The COVID-19 crisis looks set to accelerate an overdue transformation of the world’s largest ecosystem,” writes McKinsey and Co. While past McKinsey and Co. studies have focused on the proliferation of new technologies entering our industry, a new study titled “The next normal in construction: How disruption is reshaping the world’s largest ecosystem” reports accelerated increases in IT investment by construction firms to adopt those new technologies.

In the past, the software options for construction companies were expensive to implement, hard to use, too complex for smaller firms, and didn’t integrate with other software solutions. Contractors made do with clipboards, binders, excel spreadsheets, emails, and whiteboards as sources of truth to run projects. Information lived in silos — literally stuck in computers and analog solutions. In 2020, this doesn’t work.

Distributed teams, a fluctuating workforce, shifting project scopes and timelines, and economic uncertainties demand a new level of agility for contractors to continue to be profitable. The “new normal” requires teams to have instant access

to information — anytime, anywhere. The good news is that technology is catching up to make this a reality for all sizes of contractors.

### Con-tech Is Now Modern, Connected, and Competing

Over the last few years, billions of dollars have been invested in construction software ventures. The best-of-the-best, from top tech platforms to startup communities, have turned their attention to the construction industry looking to revolutionize operations. The resulting ventures are operating in ways that have major benefits for contractors looking to digitize.

## “FOR THE REST OF YOU STILL WORKING TOWARD A BETTER NEW NORMAL, THE TECH WORLD IS HERE TO HELP.”

First, they are creating modern solutions that can be accessed from anywhere and are intuitive and easy to use. Teams can now access the entire suite of software — from the office, at home, on the road, or directly in the field from a mobile application.

Modern solutions integrate. Most new applications do not pretend to be do-it-all solutions. Instead, they are laser-focused on specific areas of a business, such as streamlining manufacturing and prefab processes or moving estimating process to the cloud. These focused solutions then integrate with other solutions so data can flow from the field to the back office and between stakeholders.

Integration also unlocks novel, new workflows not possible as

standalone systems. Here are two innovative examples we have seen from our own partner community:

- **Nyfty.ai** sends text messages to everyone on a project to fill out a health survey on their mobile device each day before entering the jobsite. It then logs all the responses for tracking within each project. Specialty contractors that have their project directory up to date with worker contact info simply need to turn it on to see the data.
- **OpenSpace** provides a solution to capture 360-degree imagery of projects by walking around. Through integrated software, anyone can visually reference, create and update observations and RFIs without ever arriving at a project location.

There is a proliferation of new solutions competing to target every

to flow dynamically through your organization.

To get this right, leaders should think about technology strategy at three levels:

- **Applications** (point solutions) that make your people better at their job.
- **Platforms** that bring apps, data, and workflows together to help you collaborate with stakeholders and your teams.
- **Insights** extracted from the platform that help you help your company win.

A proactive approach that considers each of these stages should be adopted by contractors of all sizes. Great apps will delight your employees and provide the tip of the spear for data and insights. Left unmanaged, teams will begin to adopt separate solutions for separate projects, with no consid-

facet of a contractor’s business. They have significantly lowered the barrier of investment, compete on ease of use, and are looking to integrate data where possible.

### Enabling an Information Supply Chain

Everyone in your company is a technology user — both consumers and creators of information in your information supply chain. The services team needs information from the construction team that built the projects they are maintaining. The estimators are working remotely to address change orders coming from the project team. The field is trying to maintain productivity while reacting to changes in safety protocols and materials delays. Information has

eration for insights or integration, ultimately frustrating other parts of the business. Selecting a platform that brings these apps and data together through integration can provide the backbone of a sound strategy, allowing for rolled-up analysis of your operations.

This has been a tough year. It has tested every process, workflow, and supply chain and required everyone to rethink their operations. Many of you have already emerged stronger than before by overhauling your processes and getting your teams online in new ways. For the rest of you still working toward a better new normal, the tech world is here to help.

*Eric Tucker leads partner strategy for specialty contractors at Procore.*





## CAPITOL HILL UPDATE

*continued from page 3*

Mitch McConnell (R-Ky.) had kept the chamber in session an extra week, as a last-ditch attempt for the White House, House Democrats and Senate Republicans to further negotiations. With no deal, the Senate adjourned until Sept. 8 and the House isn't expected to return for votes until Sept. 14. Leaders in both houses indicated they could recall their Members if there were an unexpected deal or an emergency.

Democrats initially proposed a \$3.4 trillion package, which included money for school construction, infrastructure grants, tax incentives, unemployment grants and assistance to state and local governments offsetting COVID-19 related deficits. House leaders offered to reduce their price tag by \$1 trillion, but Senate Republicans and White House leaders want to keep the package as close to \$1 trillion as possible. By McConnell's own estimation, he will need 20 Democratic votes to pass a deal. Up to 20 GOP members are prepared to vote against any COVID-19 relief bill entirely.

### “Great American Outdoors Act” Signed by President

On August 4, the president signed into law (P.L. 116-152) the Great American Outdoors Act, a huge win for SMACNA. The new law includes \$6.5 million to address a maintenance backlog at National Parks, including roads and trails, housing and restroom facilities. The bill would also permanently provide \$900 million in oil and gas revenues for the Land and Water Conservation Fund. SMACNA had been urging the Senate to pass the bill for more than two years and also successfully lobbied House members for their support.

### Infrastructure Discussions Stall

Both parties and the White House agree on the need for major U.S. infrastructure investment, which would be good for the economy and the nation's crumbling infrastructure. Disagreements over how

to pay for an infrastructure package are the sticking point, despite major pressure from a significant number in the business community, including construction firms, arguing that no long-term federal infrastructure legislation raises the potential for halting construction projects. House Democrats are willing to use deficit spending, but Senate Republicans want “pay-fors.” All seem to agree that except for spending on broadband and advancing a helpful surface transportation bill, a broader infrastructure package may have to wait until early 2021.

### GAO Report: School HVAC Retrofits Needed

A recent report from the Government Accountability Office (GAO) found that K-12 school buildings nationwide are facing severe infrastructure problems, concluding that more than half of public school districts need to update or replace multiple building systems or features in their schools. As one Philadelphia Federation of Teachers union survey put it, schools “cannot deal with facilities [even] without a pandemic.” The GAO report particularly highlighted the state of school HVAC systems, finding that a stunning 36,000 schools nationwide have aging systems in need of updates. HVAC is a crucial part of enabling health and safety for building occupants. Water damage caused by a leaking roof or HVAC system can lead to mold growth, poor air quality, or even school closures due to extreme heat. In the age of coronavirus, updated HVAC systems have become more important than ever.

Schools need an infusion of investment for upgraded, more energy-efficient HVAC systems to help make classrooms as safe as possible for reoccupancy. HVAC energy savings often pay for the upgrades in the long run. Utility costs are the second largest expenditure for schools, with K-12 schools collectively spending \$6 billion per year on energy.



Sheet Metal Worker installing supply air 90-degree elbow.



Overhead view in mechanical room of discharge duct work from three 125 horsepower exhaust fans.



## INDUSTRIAL

*continued from page 7*

control would not have been possible with the old HVAC system, which lacked any functioning humidification equipment. Matherly installed 10 gas-fired humidifiers, which add up to 600 pounds of moisture per hour in the winter months.

### 84-Inch Duct

This large number is probably no surprise, considering the incredible volume of air flow in the new HVAC system. Equipment highlights from the project include: thousands of feet of 4 inch through 10 inch pressure class duct, ranging from 48 inches to 84 inches diameter round duct, and rectangular duct up to 144 inches. Matherly also installed, (15)100hp and (4) 125hp exhaust and recirculation fans, and (8) Temtrol air handling units. National Emission Standards for Hazardous Air Pollutants (NESHAP) 319 filtration is utilized for all exhaust and circulation air.

“Bay 1 now has the biggest plenums I've ever built,” Clark said.

Matherly will certainly have more big Tinker projects in the future. Over the past 50 years, the SMACNA firm has been taking the lead and subcontracting at the base on a wide variety of HVAC, sheet metal and mechanical jobs. The gigantic base is full of oversized buildings in need of their skill and experience. For example. Building 3001, where Tinker completed a steam-to-gas conversion project a couple years ago, is almost a mile long.

“We prefer the larger and more difficult projects because we like a challenge and it reduces the competition.” Clark said.



Custom designed 10 ga. Exhaust plenum, 144" x 72" w/ 84" diameter top inlet. This is one of five large exhaust plenums that were made.



*continued from page 4*

Hermanson, one of the Pacific Northwest's largest mechanical contractors offering HVAC, plumbing, engineering, tenant improvements, service, TAB, and commissioning across Washington and Oregon, has been with the project from the beginning. Hermanson began collaborating with the design team in 2016, completing Phase 1, and transitioning to Phase 2 in June 2019. "The phases have been intense," says Dan Nugent, project superintendent for Hermanson. "We had to bring in two temporary air handlers, put them on the roof, and temporarily duct them in to get Phase 2 commissioned. We currently have seven air handlers but will disconnect the temporary units once the system is complete. During Phase 1 we built a brand-new mechanical room that handles both Phase 1 and Phase 2."

Those AHU support one element of the North Satellite design.

Three intersecting lines of rounded ceiling emulate rivers and within each 'river' there are four ducts to eliminate smoke if there is ever an event. The smoke control systems protect life and building by creating positive pressure zones that push toward any fire, exhausting air out of the fire.

Safety and high air quality are top priorities at SEA Airport. "There are people in our facilities group who've been forward-looking for about 20 years," says Warren. "They responded to 9/11 and to SARS by employing the best technology available in the HVAC systems we built in the early 2000s. We don't need changes in our filtration standards because of COVID as our filtration bank already removes particles smaller than the virus."

With the current renovation, SEA Airport continues its tradition of investing in the best HVAC systems possible. "We chose the

mechanical electrical contractors based on what they brought to the table, things like BIM and the ability to solve problems," adds Warren. "Selecting Hermanson has paid off for us in spades as far as our collaboration. We're pleased with the performance, the reputation, and the relationship we've developed with them."



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*Once the AHU sections were lifted to the third floor, a series of pulleys and winches were used to move them.*

## Building for a Stronger Future

The Seattle-Tacoma International Airport serves about 50 million travelers a year. "We want passengers to have an opening-day fresh experience," says Ken Warren, project manager for the Port of Seattle. "But that's hard to do with 1973 infrastructure. We needed to update our aging North Satellite Building."

When SEA Airport was built, there was no provision to maintain the mechanical systems. For the renovation, designers prioritized practicality, like installing LED lights with occupancy sensors to avoid burning out bulbs inside air handlers. The air handlers are 4-inch wall, stainless steel construction, all fully seamed. Piping packages can be completely moved out of the way for easy access to the coils. And Port standards prohibit turning vanes in negatively pressurized ducts. "We use a commercialized toilet paper, and the paper fibers get entrained into the exhaust system," explains Warren. "With the moisture of the Seattle climate, the fibers turned into a giant paper wad in the turning vanes, clogging the ducts up." Turning vanes had to go.

"We are building for a minimum of 50 years, and we expect to get value for every dollar we spend," says Warren. Hermanson Company helped us with these details. We had no idea, for instance, that for just a little extra we would have a much better gasket, so we won't have to worry about leaks 25 years down the line."

"Instead of foam, we use a butyl gasket, so the duct is nice and tight," says Dan Nugent, Hermanson project superintendent. "We're allowed 350 CFM loss per SMACNA leak tests, but when we did the leak testing, we only lost 28 CFM."



*Trucking 27 AHU sections across an active tarmac took careful planning and coordination.*



*A 110-ton crane was used to lift sections weighing up to 14,000 pounds.*

## AUH Crane Pick and Installation

As part of Phase 2 of the North Satellite (NSAT) Modernization Project at SEA Airport, Hermanson installed five new, permanent Air Handler Units. The sections were trucked in across an active tarmac as 27 total sections and hoisted by a 110-ton crane through the side of the third story of the North Satellite building. Each section was 13 feet tall by 19 feet 6 inches wide and weighed between 7,800 to 14,000 pounds. The sections were maneuvered into their destination using winch and rollers over four days with an additional two days spent bolting AHU sections together. All of installations meet or exceed SMACNA standards, with adjustments for the local code. Additionally, special care was taken to ensure the whole operation met COVID-19 construction guidelines and the operation was completed without incident.

## MEMBERS

### Welcome New SMACNA Members

Air Balance Co., Inc.	Corvina, Calif.
Best Clima Engenharia e Instalacoes Ltda	Sao Paulo, Brazil
Eastern Syntech Co., Ltd.	Samut Prakarn, Thailand
Harder Mechanical	Portland, Ore.
Newset Tecnologia em Climatizacao Ltda	Sao Paulo, Brazil
Thermal Air Conditioning, Inc.	Pasadena, Calif.



## WELCOME

### Scott Barr Joins SMACNA Technical Group as Senior Project Manager

Scott Barr, the new senior project manager with the Technical Resources Department, joined SMACNA in July. Barr brings extensive knowledge and more than 25 years of industry experience to SMACNA National and will be an exceptional addition to staff.

Barr has held positions as Project and Senior Project Managers, Mechanical Engineer, and Product and Engineering Manager. He has extensive experience in the Air Pollution Control (Electro-Static Precipitator) new and rebuilds markets.

No stranger to the industry, Barr has been using SMACNA publications, such as "Guide for Steel Stack Design

and Construction," "Round Industrial Duct Construction Standards," and "Rectangular Industrial Duct Construction Standards" on projects since 1995.

A seasoned professional engineer with management experience, Barr has worked with drafters, designers, other engineers (chemical, civil, electrical, E&I, mechanical, process, structural), as well as product and project managers, fabricators, install contractors, vendors, QA/QC, spare parts, and sales teams.

Barr graduated from Oregon State University with a BSME. He is currently licensed in Alabama, Mississippi, North Carolina, and Oregon.

## SMACNA 2020 Associate Members

### PLATINUM



### GOLD

SMACNA welcomes new Gold Associate Member eSub of San Diego, Calif.



### 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](http://smacna.org) or contact Scott Groves at [smacna@naylor.com](mailto:smacna@naylor.com).



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202.547.8202 | Fax 202.547.8810



SMACNA CALENDAR

SEPTEMBER 2020

**Sep 15**  
Best Practices Recruiting  
Toolbox Webinar: Part 2  
*Online*

OCTOBER 2020

**Oct 13-15**  
The SMACNA Edge Conference:  
A Virtual Education Forum  
*Online*

NOVEMBER 2020

**Nov 5**  
Residential Forum Webinar:  
Leadership & Company Culture  
*Online*

DECEMBER 2020

**Dec 06-09**  
2020 December Council of Chapter  
Representatives  
*Scottsdale, AZ*

FUTURE SMACNA CONVENTIONS

**Oct 24-27, 2021**  
2021 Annual Convention  
*Maui, HI*

**Sep 11-14, 2022**  
2022 Annual Convention  
*Colorado Springs, CO*

**Oct 15-18, 2023**  
2023 Annual Convention  
*Phoenix, AZ*

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**The SMACNA**  
**EDGE** A Virtual Education Forum  
**Conference**  
October 13-15, 2020

This fully virtual event has everything SMACNA members need to advance their knowledge and stay ahead of industry trends.

Register yourself or register to bring your whole company. For details, go to [www.smacna.org/annualconvention](http://www.smacna.org/annualconvention)

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