

Sheet Metal Journal

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Western Washington



MACDONALD-MILLER'S DETAILING DEPARTMENT

Also in this issue:

Women in Construction Numbers Misleading

Tool Grant for SMART Heroes

Emotional Intelligence

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OUR CONTRACTORS SET THE STANDARDS FOR THE INDUSTRY

WHO WE ARE

SMACNA-Western Washington is a local chapter of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).

SMACNA Contractors are heating, ventilating, air conditioning (HVAC) and sheet metal experts. They are your assurance of quality in the fabrication and installation of ductwork and air handling systems.

SMACNA contractors are also skilled professionals in:

- Architectural sheet metal
- Industrial sheet metal
- Kitchen equipment
- Specialty stainless steel
- Manufacturing and custom fabrication
- Repair services
- Siding and decking
- Flow testing & balancing
- Energy management & maintenance

Well known and respected within the construction industry, SMACNA contractors provide the highest quality workmanship, professionalism, and service to their customers. They care about the life cycle of the project, not just the winning bid.

You'll find SMACNA contractors working in all construction sectors whether industrial, commercial, institutional, or residential.

SMACNA contractors developed the technical manuals and standards that today are accepted worldwide in the construction community. As leaders in their industry, they continue to adopt and apply the latest technologies to HVAC and sheet metal work. Everything from duct construction and installation to air pollution control, from energy recovery to roofing, from seismic restraint to welding... they do it all!

STATEMENT OF PURPOSE

The ultimate goal of SMACNA-Western Washington, Inc. is to achieve and maintain the following principles and programs for the sheet metal industry:

1. To establish advertising, publicity, and promotional activities that advise the public of the nature, extent, and availability of services performed by the industry.
2. To promote educational programs to formulate high quality standards of sheet metal construction.
3. To aid in the formulation of uniform sheet metal specifications and improvement of state and municipal codes.
4. To expose fraudulent or misleading advertising or representations intended to deceive the public.
5. To encourage and promote trade practices that will eliminate unfair competition or exploitation of the sheet metal industry.
6. To encourage and promote the establishment of a uniform pattern of payments by customers during the progress of jobs to avoid inequitable payment delays and economic penalties.
7. To provide a forum for the discussion of the common interests and problems of labor and industry, and to encourage and promote harmonious relations between labor and industry.
8. To encourage any proper activity that will increase the efficiency of the industry and its ability to serve the public.

**SMACNA Contractors:
Quality work and professional services**

Sheet Metal and Air Conditioning Contractors' National Association - Western Washington Chapter
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LEADERSHIP DERAILERS

There is no doubt that we all want to be better leaders. Whether we are running whole companies or individual departments, we feel the pressure to perform and constantly improve our methods. Even if we aren't in specifically leader-focused positions, we are all leaders in some way, and that means inspiring others, mentoring those who need a bit (or a lot) of guidance, or simply showing up in a way that others look at and consider a model for how to get the job done right.

There is a lot of information and coaching out there about how to lead—the pro tips for engagement, communication, healthy conflict management, and personal growth—but we seldom talk about the “Do not” list. These items—things that we must avoid—are steps that, if we aren't cautious, can derail our best efforts and inhibit our ability to lead. Staying on track and on a healthy leadership trajectory means avoiding these mistakes because becoming and staying an effective and powerful leader means taking advantage of the essential lessons and staying wary of mistakes. And that isn't to say that mistakes aren't valuable—they are, sometimes even more so than achievements. But this list refers to daily habits, ruts we can easily fall into, that are best avoided.

Gregg Vanourek, writer, facilitator, and speaker on life and leadership, has identified more than 60 leadership derailers that can send any leader into a tailspin. In his blog, he lists the following top ten:

1. **Avoidance:** avoiding difficult tasks, situations, or conflicts.
2. **Burnout:** becoming run-down and feeling exhausted, often due to lack of self-care.
3. **Bottleneck:** feeling you must make all decisions or taking on too much work yourself, causing delays.
4. **Delegation:** not entrusting tasks to others sufficiently, which leads to reduced motivation.
5. **Feedback:** not providing feedback well or often enough, or not soliciting it enough or receiving it well.
6. **Insecurity:** lacking confidence about leading or feeling unqualified to lead; being unassertive.



By / Jessica Kirby
Editor, Sheet Metal Journal-Western Washington

7. **Perfectionism:** setting unrealistic expectations for yourself or others; needing things to be flawless.
8. **Procrastination:** putting things off until later or the last minute.
9. **Short Game:** failing to invest in the future and deciding important things without considering the long term.
10. **Workaholism:** being addicted to work and struggling to switch it off or stop thinking about it.

Tackling these and other ways we derail our efforts means identifying our poor habits and making a plan to do something about them. Sometimes we have to ask for help, and that is where leadership or peer groups can be helpful. Think about engaging colleagues in the same or similar companies for feedback and to help them identify and plan for their own derailers. While we can often attribute success to myriad reasons, mistakes often come down to some core principles and actions, so discussing these with others can be very powerful. For example, avoid procrastination by making weekly lists of the items you need to achieve in priority order and tackling them one at a time. Crossing things off of a list creates a tiny shot of dopamine in the brain that gives you the encouragement to take on this next task. Is it easy? No. But worth it.

This is important work, work that every leader who wishes to develop in a thoughtful, deliberate way must take on.

Are you up for it? ■

SMACNA WESTERN WASHINGTON EVENTS

Annual Golf Tournament

July 28 | The Golf Club at Newcastle

DE&I Summit

August 17 | Hyatt Regency Lake Washington, Seattle's Southport

SMACNA Annual Convention

September 11-14 | Colorado Springs, CO

Oktoberfest Spooktacular

October 27 | The Lounge by Topgolf, Kirkland Urban

Membership Meeting

November 15 | SeaTac Marriott

Annual Holiday Gala

December 2 | W Bellevue Hotel **New Location*

Watch your email for event invitations, details, and reminders.

SMACNA-WESTERN WASHINGTON

GOLF

2022 ANNUAL GOLF TOURNAMENT



THURSDAY, JULY 28TH

THE GOLF CLUB AT NEWCASTLE

Email the SMACNA-WW office at pbovie@smacnaww.org
to receive a registration link.

SEE PAGE 6 FOR DETAILS AND A
SCHEDULE OF EVENTS

SMACNA-WW GOLF - THURSDAY, JULY 28 NEWCASTLE, WASHINGTON

Practice your backswing and get ready for the 2022 Annual Golf Tournament! This year’s golf event will take place at The Golf Club at Newcastle in Newcastle, Washington, on Thursday, July 28, 2022.

ENTRY FEE

Entry fee is \$250 per person. Includes green fee, cart, tee gift, hosted happy hour, dinner, tournament gifts, and prizes.

To give all members an equal opportunity to play, space is limited to two foursomes per company. Additional teams will be placed on a waiting list.

TEAMS

- Teams of 4: Prearranged foursomes are strongly requested.
- Teams of 2: Twosomes are encouraged!

Registration deadline: July 15, 2022

SCHEDULE

7:30 AM	Check-in, Range Balls & Breakfast Burritos
8:15 AM	Helicopter Ball Drop
8:45 AM	Head Assigned Cart
9:00 AM	Shotgun Start - Scramble Format, Lunch at turn
4:00 PM	Happy Hour & Tournament Scoring
5:00 PM	Dinner, Awards & Prizes

SPONSORSHIPS

Make connections and market your company’s services to a captive audience during SMACNA-Western Washington’s Annual Golf Tournament. Both suppliers and contractor members are encouraged to take advantage of this once-a-year opportunity.

Sponsorships will be made on a first-come, first-served basis. Each sponsorship includes two complimentary dinners, with additional guests \$50 each.

Sponsorship deadline: July 13, 2022

SHOW YOUR SEAHAWKS SPIRIT!

Let’s cheer on the 2022-2023 Seahawks squad! Wear your best Seahawks gear at this year’s golf tournament. The team with the most Seahawks spirit will win a prize! ▪

SMACNA-WW LAUNCHES MOBILE APP

The official SMACNA-WW Mobile App is now LIVE on both the Apple App Store and Google Play Store. It will be your ultimate resource for all things SMACNA-WW. Some of the app features include:

- Membership Directory
- Events & Calendar
- Push Notifications
- Groups & Committees
- Discussion Boards

“Creating an association mobile app was originally SMACNA-WW’s Executive Vice President, Julie Muller’s idea,” says Patricia Bovie, marketing and design manager for SMACNA-WW. “From a marketing standpoint, the association was already set up with communication platforms via email and text to its members. Naturally, the next course of action would be to create a mobile app.”



The SMACNA-WW app is a resource for members of our association to stay up to date on all the latest SMACNA-WW news and communications. Once members login to the app, they have access to the membership directory, committees, discussion boards, and much more.

“We hope the mobile app will be a valuable addition to our membership, and we are excited to announce it is officially live in the Apple App Store and Google Play Store,” Bovie says.

Visit the Apple App Store or Google Play Store today to download the app. ▪

SMACNA-WW HOLDS SUPERVISORY TRAINING FOR MEMBERS

In May, SMACNA-WW held supervisory training on effective communication and action planning, presented by Walead Atiyeh from Maxim Consulting. More than 50 members attended the event and left feeling inspired by the robust and involved programming.

The workshop was focused on learning and avoiding the roadblocks to great communication. One survey reports that project managers spend 90% of their time communicating. Atiyeh explored with the group the mediums of communication and discussed how we can be more successful communicators by knowing ourselves better, avoiding roadblocks to communication, and listening better. Members learned skills that will help them be more efficient and improve their relationships internally and externally.

The presentation addressed effective communication with the following topics:

1. Effective Communication and its Impact on Project Success
2. Understanding Verbal Forms of Communication vs Non-Verbal Forms of Communication
3. Characteristics of Effective Communication
4. Impediments to Effective Communication
5. DISC Personality Assessments

6. Listening and Understanding
 - Reflective Listening
 - Questioning Skills
7. Conflict Resolution in Construction
8. Methods to Resolve Conflicts

Part of the work involves identifying the type of communicators we are and the types we are interacting with using the DISC tool to facilitate easier and more effective communication. In it, characteristics of dominant, influential, conscientious, and steady individuals are identified along with motivators for each type and tips for how to communicate effectively depending on the category with which a person most closely identifies.

The training also looked at eliminating road blocks to communication by being curious, refraining from blame, solving problems, and seeking to understand. This area moved over into conflict resolution and listening skills, emphasizing how listening is possibly the most important component of mitigating conflict as we practice respecting others, listen until we experience the “other side”, and state our own views, needs, and feelings effectively.

The final topic was Goal Setting and Action Planning,

continued on page 22



The Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) is an international trade association representing contracting firms throughout the United States, Canada, Australia, and Brazil. The mission of SMACNA is to create a competitive advantage for SMACNA members through industry education, labor relations, standards development, industry representation, and business studies. SMACNA members are innovative and forward-thinking sheet metal contractors who specialize in Heating, Ventilation, and Air Conditioning, Architectural & Industrial sheet metal, Manufacturing, Testing & Balancing, and Energy management.

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Contractors' National Association -
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SMACNA APPLAUDS DEPARTMENT OF LABOR WAGE AND HOUR DIVISION EFFORTS ON THE *DAVIS-BACON ACT*

SMACNA is supported by more than 3,500 construction firms specializing in industrial, commercial, residential, architectural and specialty sheet metal, and air conditioning construction in public and private markets throughout the United States. SMACNA members and allied quality-driven contractors understand that any major investment in public infrastructure should recognize the extreme importance and merit in prevailing wages as part of any quality based public procurement policy. From decades of experience, SMACNA member firms understand the merit in a public procurement policy that encourages employers to provide a skilled workforce quality wages, benefits, and training.

SMACNA contractor members have long been outspoken advocates for Davis-Bacon regulatory reforms. Its members appreciate that prevailing wage laws seek to prevent the federal government from undermining local economies and prevailing local employment and training practices by reflecting local conditions. SMACNA offers the Department of Labor support for its long overdue efforts to reflect the views of federal contractors featuring the most skilled workforce that bid and win federal contracts every day. SMACNA firms well understand the shortcomings of the *Act* since misguided and outdated reforms were made decades ago seemingly designed to limit the effectiveness of the *Act* and its clear and specific statutory intent. Many of these so-called reforms in the past undermined the intent of the *Act* and led to the frustration of those most supportive of paying prevailing wages and boosting registered apprenticeship.

SMACNA members appreciate DOL's tireless efforts to reform the *Davis-Bacon Act* and offer to provide the Wage and Hour Division with our best counsel and input as they carefully reconsider the critical role prevailing wage standards play in expanding a well-trained, highly skilled, and productive construction workforce. ■

FEW US PUBLIC SCHOOLS IMPLEMENTED HIGH-COST VENTILATION STRATEGIES FOR COVID-19

During the COVID-19 pandemic, most US public schools implemented lower cost ventilation strategies like moving activities outdoors, but far fewer implemented higher cost strategies like replacing HVAC systems, a survey found.

Additionally, rural and mid-poverty K-12 public schools were

less likely to report using the resource-intensive ventilation strategies during a recent wave of the pandemic, according to results published in *Morbidity and Mortality Weekly Report* (MMWR).

Ventilation can reduce concentrations of infectious aerosols and the amount of time that students and staff are exposed to them, and it is linked to a lower COVID-19 incidence, the researchers said.

“Whereas ambient wind currents effectively dissipate SARS-CoV-2 outdoors, ventilation systems provide protective airflow and filtration indoors,” they wrote.

Researchers examined reported ventilation improvement strategies used in K-12 public schools during a COVID-19 wave lasting from February 14 to March 27, 2022, using data from 420 schools enrolled in the National School COVID-19 Prevention Study. They separated the schools into low-, mid-, or high-poverty categories, depending on the percentage of their students eligible for free or reduced-price lunches. Schools were categorized either as residing in a city, a suburb, a town, or a rural area.

Schools most frequently reported using lower cost strategies, including relocating activities outdoors (73.6%); inspecting existing HVAC systems (70.5%); and keeping doors (67.3%) and windows open (67.2%). About 37% of the schools used fans to increase effectiveness of open windows.

Among higher cost strategies, only 38.5% of schools had replaced or upgraded their HVAC systems since the beginning of the pandemic, and less than 30% of schools used HEPA filtration systems in classrooms (28.2%) or eating areas (29.8%).

Rural and mid-poverty schools were less likely to use portable HEPA filters, and less likely than their high-poverty level counterparts to have upgraded or replaced HVAC systems (32.4% vs. 48.8%).

“Differences by locale and school poverty level in implementing more resource-intensive strategies might be due to supply chain challenges, differences in school or community resources, or accessibility of technical assistance and support for applying to available sources of funding,” the researchers wrote.

“However, mid-poverty schools might have been least likely to implement these strategies because higher poverty schools might have had more experience in accessing and using federal funds, and lower poverty schools might have been able to implement some of these strategies without additional government support,” they wrote.

continued on page 22

INTRODUCING THE BUILDCENTRIX ASSEMBLY BUILDER

NEW



KEY FEATURES:

- Allows site foremen to create mechanical systems in 3D
- Empowers foremen to use as-built content
- Generates a cost and price for material and labor, plus budgeted fabrication time
- Provides foremen working on major and special projects to send fabrication-ready models to the shop for fabrication and assembly
- Configurable fabrication standards and recommendations are built in
- Easy to implement being cloud native



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It's All in the DETAILS

By Jesse Caudle & Henry Lewellen, MacDonald-Miller Facility Solutions
Sheet Metal Detailing and MEP Coordination

MacDonald-Miller's emphasis is in design-build construction. Its account executives, or sales force, work directly with owners and their design consultants to develop system concepts for buildings' program requirements. Once the design is complete and the mechanical/plumbing drawings are completed by engineering, there are still a few more steps before each trade goes out and installs.

Detailing is the process of transforming the mechanical/plumbing design from our engineering team into a detailed 3D model that is constructable and coordinated with other trades. This model is used to generate detailed drawings, material lists, and fabrication files to allow the shop and field to fabricate and install the pipe and ductwork.

One of the main elements of this process is clash detection, which involves taking the many models of everything on the project, including steel, walls, duct, pipe, electrical, fire protection, lights, and even kitchen equipment, and identifying impacts to confirm that everything has a place to go.

This process allows issues to be identified in the office months in advance, rather than out onsite while trying to get everything installed.

Our sheet metal detailers crushed it on a recent project that consisted of building four five-story office buildings. In total, these buildings have more than 1,434 terminal units and 34 hoods filling up the kitchen spaces. They are largely supported by a dedicated outside air system (DOAS) using sensible cooling units to provide energy efficient cooling/heating to the offices.



“

With four buildings operating on overlapping schedules, MacMiller was running two to five clash reports a week covering one to three buildings at a time.

step ensures that all code-based clearances were achieved and allows building maintenance to be a breeze in the long term.

Through detailing’s efforts, the shop produced 11,094 fabricated assemblies for the field. In total, there were 663,723 lbs of ductwork fabricated for all four buildings. The time spent up front streamlined the install process and coordinated the more complicated installs, such as the 34 hoods throughout the amenity space.

In the words of Joe Daniels, MacMiller’s sheet metal superintendent, “From the Trimble support at the beginning of the project, to the kitchen hood support details during the heat of the battle and the GRD and Flex reports during trim time... our detailing team ROCKED it!” ■

For this project, MacMiller Detailing performed the sheet metal and MEP coordination scopes. With four buildings operating on overlapping schedules, MacMiller was running two to five clash reports a week covering one to three buildings at a time. This led to hundreds of clashes being identified and resolved on a weekly basis while juggling the modeling for the upcoming floors.

Eddie Markwardt led the detailing front for all buildings on this project. This included leading a team of 11 detailers to complete the modeling, coordination, and fabrication deliverables throughout its life cycle. In addition to traditional MEP clash detection coordination, Markwardt led his team in a special lighting coordination, clashing and modifying unit layout around lights added after signoff on each of the office floors. This

Faces of Success

Eddie Markwardt, Sheet Metal Detailer

“I’ve worked for MacMiller 28 years total. I started around 1986 and worked here 18 years. I left for around 8 years and I have been back for 10.

The thing I like most about working at MacMiller is the challenge of the large projects. You get to work on 58-story towers to multiple office buildings that are all going at the same time.”





Advocates say women in trades statistics are nothing to celebrate

By Don Wall, Daily Commercial News

North American construction workforce advocates hoping for a breakthrough in female participation won't find much reason to celebrate in the latest statistics released on both sides of the border.

Data from the past three years indicate a minimal uptick in the numbers of women working on the tools in the sector.

As the sector marked Women in Construction Week 2022 in March, there was disappointment that after decades of efforts, women still account for a minimal percentage of construction trades workers—in the low single digits.

Graeme Aitken, executive director with the Electrical Contractors Association of Ontario, spoke out at a recent Ontario Construction Secretariat (OCS) event held in Toronto, recalling attending a provincial building trades conference in the late 1980s.

"I vividly recall people standing up and saying, 'We need more women in the trades.' This is 35 years ago," said Aitken.

"'We haven't done enough,' is the biggest understatement I am going to hear this week."

In the American, statistics compiled by Big Rentz, the New England Institute of Technology, the Bureau of Labor Statistics, and others found women comprise 10.9% of the construction

workforce, up one per cent in two years, but only 2.5% of trades in the field.

One study found women comprise 5% of contractors and 4% of construction managers.

In Canada, BuildForce Canada estimated in 2020 that of the nearly 1.1 million tradespeople employed in the industry, women made up 5%. In 2017, BuildForce estimated women accounted for 12.4% of the construction workforce nationally—3.9% onsite, 38.5% off-site.

The OCS this year reported on Statistics Canada data on gender representation among apprentices in major construction trades, averaged from 2015 to 2019: bricklayer, 1%; carpenter, 4%; construction craft worker, 5%; electrician, 3%; plumber, 2%; total, 3%.

Advocates in the United States and Canada were asked: What practices and strategies do you feel have the potential to once and for all create a construction workforce where women feel welcomed and are able to contribute to their full potential?

Among their answers:

Enforceable workforce targets. For 30 years, New Brunswick's Arlene Dunn worked as a labour and employer organizer in Eastern Canada, with notable success putting together workforce

deals that were able to achieve a high-water mark of female trades participation—13%, on the Hebron offshore oil project.

Today, Dunn is a cabinet minister in the Government of New Brunswick.

“We’re not progressing in terms of the percentage of numbers in the trades,” Dunn said. “You have to start with real numbers... If you looked at the Enron projects, there are very, very rigid numbers with respect to what their requests were, and the expectations were around women entering the trades.

“So start with those hard numbers and no excuses.”

If there were no female ironworkers available, for example, the parties proceeded to train workers up to meet the contractual obligations.

“So we’re not going to get into a situation where when we require women to be hired on the job that we don’t say that we don’t have them, that just wasn’t an excuse.”

Accountability at the top. Dunn said the impetus to develop contracts with such exacting workforce requirements has to stem from the C-suite.

“You have to really have accountability. And you have to have people at the top who actually do want to make a difference. It’s not something that’s inspirational... it’s people who are really committed to women in the skilled trades.”

Those firms developed strong protection mechanisms to support women on worksites, Dunn said.

“Until other jurisdictions start doing the same thing, we’re going to continue to have struggles.”

Support and networking programs. Sheila Ohrenberg of Nashville, Tennessee, started out in construction as an assistant project manager 25 years ago and 15 years ago she and her sister founded their own company, Sorella Group, that specializes in carpentry as a subcontractor. She is now president of Women Construction Owners and Executives.

“Being at the top of a company and being a female construction owner, it can be lonely. They say it’s lonely at the top,” said Ohrenberg.

“When you’re a female, you’re not typically going out hunting with all the guys... Having peer groups among national construction owners is so important, because a lot of times you can think that only things are only happening to you. Then you get in a peer group and then you get to support each other.”

Supportive corporate culture. Ohrenberg raised two children as the CEO of Sorella and so understands the value of creating

an inclusive corporate culture that understands the unique needs of families in the sector.

“When women are having children and wanting to spend time with their kids and take them to school...it’s very, very difficult to have a very demanding job that you can’t get away from,” she said, noting construction is cyclical with some times of the year especially busy.

“I’ve always worked for smaller companies that were family owned, and they understood that whether you’re a male or female, you have children and you’ve got to take care of the kids.”

Reach them young. Texan Stephanie Garcia, an onsite quality manager with Rogers-O’Brien Construction in San Antonio, is an activist with the National Association of Women in Construction (NAWIC). Garcia supports a local program that offers free classes that serve as an introduction to the trades for young women. The girls obtain hands-on exposure to presentations on, for example, robotics in construction.

Garcia, who earned degrees in interior design and architecture and is recognizable on jobsites with her trademark pink construction helmet, also participates in a high school program called Bridging the Gap.

“I really enjoy going out there and talking to all the young students. We try to do a lot of that to get them interested,” she said.

Effective anti-discrimination measures. Kayla Bailey is a steamfitter and welder who has taken on the role of full-time project manager with Ontario Building and Construction Tradeswomen. She feels the trades are about to experience an “explosion” of interest among women.

But while initial interest may not be a problem, retention is a major hurdle, she said. Unfortunately, Bailey said, out in the field, where the number of women is miniscule, the vast majority of men are supportive but there is still an element of the Wild West.

“I have sat through dozens of diversity training meetings,” she said. “And for some people, it does mean education and it changes attitudes but...I can tell you, just from my personal experience, that there is zero enforcement of these policies.

“We hear that from our trade committee, as well. I wish the solution was as simple as your health and safety policy that has a gender lens. But really, if you’re not enforcing it, you’re really not going to make a change in the industry.” ■

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Tools of the Trade

By Jessica Kirby • Photos courtesy of Western Washington JATC

The ITI received an important grant from Stanley Black & Decker that will provide tools to the SMART Heroes program

The Western Washington SMART Heroes program will benefit from a generous donation to the International Training Institute (ITI). Stanley Black & Decker's first "Empower Makers" Global Impact Challenge saw a \$50,000 grant in tools delivered to the iTi, and those tools will be used by the SMART Heroes program.

The SMART Heroes program was created by the ITI, SMART, SMACNA, JATC/Local in Colorado, JATC/Local 66 in Western Washington, and Helmets to Hardhats. It provides concentrated sheet metal training for active-duty US military men and women and recent veterans who wish to pursue a civilian career in the sheet metal industry.

The first SMART Heroes program launched in August 2017 in Western Washington, and the second location in Colorado Springs was established in 2019. Graduates from the program must complete the seven-week course, equivalent to their first-year sheet metal apprentice training (224 hours). Once discharged from service, they can choose any of SMART's 148 apprenticeship programs in the United States and receive

direct entry and advanced placement as a second-year sheet metal apprentice. This includes access to second-year apprentice wages and benefits.

"The SMART Heroes program in Dupont has graduated 253 students in 28 cohorts," says Tommy Mumma, SMART Heroes instructor at the JACT in DuPont, Washington. "I currently have eight students attending the 29th cohort. I have had nothing but good feedback about the program."

Staff Sergeant Xavier Latuszek says he thinks the trades have always gone unappreciated by the general public, but he feels they are the best-kept secret, as far as cost-to-compensation goes.

"The sheet metal trade can be lucrative and rewarding," he says. "The atmosphere at SMART Heroes was a welcomed change for me, and I can't put a price on the ability to network with the individuals here, as well—people with similar experience and trajectory. The knowledge I gained here has set me up to be the perfect apprentice."



Master Sgt. Daniel J. Noone says that the program has been a great fit for him because after being in a leadership position for more than ten years, he missed working with his hands.

“I also have always liked the idea of organized labor,” he says. “I enjoyed the work and camaraderie among the apprentices, and the brotherhood/sisterhood in the union is very familiar to the military.”

Initiated in 2021, the Global Impact Challenge grant program will award up to \$25 million in grant funding over the next five years to nonprofits that are supporting trade workforce development initiatives in the construction and manufacturing sectors. With the first applications submitted in October 2021, 240 entrants were evaluated based on number of people served, outcomes projected, sustainable impact, depth of programs and diversity, among other considerations. The ITI was selected as one of 86 organizations that will help skill and reskill roughly 180,000 makers throughout 2022.

“The tools used in the SMART Heroes program help shape the second careers of those transitioning from military to civilian life,” says Mike Harris, ITI administrator. “They’re more than just tools. They’re an opportunity.”

“Stanley Black & Decker is immensely proud to support the ITI as they work to skill and reskill the next generation of trade professionals,” says Diane Cantello, Stanley Black & Decker vice president of social impact. “Currently in the United States, there are an estimated 650,000 open construction jobs and 10 million unfilled manufacturing jobs globally. Our purpose is to support ‘Those Who Make the World,’ and being able to fund educational programs and nonprofits that are revitalizing trade careers directly connects to our core mission. Thanks to this year’s Makers Grant Recipients, together we will be one step closer to closing the trade skills gap.”

Mumma says there are a few key components of the SMART Heroes program that make it stand out among other programs aimed at veterans and active-duty military men and women.

“First would be the length of the course,” he says. “It is shorter than some courses like it, which works out for a lot of people’s schedules. Being shorter also makes the course fast paced and keeps students very engaged.”

Another key feature is guaranteed job placement. Upon completion, the students are granted direct entry into any JATC in the country.

“I also believe the atmosphere in our training center attracts applicants,” Mumma says. “A lot of my students hear about the program through friends or coworkers who have taken the course and recommend it to them. I try to keep the training hands-on and fun, which the students seem to engage with, and they tend to soak up information well.”

ITI supports apprenticeship and advanced career training for union workers in the sheet metal/HVAC industry throughout the United States and Canada and develops and produces a standardized sheet metal curriculum supported by a wide variety of training materials free of charge to sheet metal apprentices and journey workers. More than 14,000 apprentices are currently registered at 148 training facilities across the United States and Canada.

Additional information about SMART Heroes and testimonials can be found at smart-heroes.org. ■





Emotional Intelligence

People skills, capacity to communicate, and penchant for conflict resolution—these are all signs of emotional intelligence that will change your business forever.

By / Jordan Whitehouse

What makes a great employee? Chances are the first things that come to mind aren't a person's vast technical skills or advanced degree from a prestigious college. It's likely their people skills, their capacity to communicate properly and listen, their ability to empathize and be optimistic, and their knack for building good relationships with others.

Underpinning these soft skills is something called emotional intelligence (EI), or a person's capacity to know, control, and express emotion, and to handle interpersonal relationships thoughtfully and empathetically.

In recent years, a growing body of research has shown that people with high EI have greater mental health, job performance, and leadership skills. This is why an increasing number of unions and companies across the construction industry—including those in sheet metal—are focusing on identifying and improving their people's EI. Understanding and cultivating EI may be just one more tool that labor and management can use to foster stronger working relationships.

Brent Darnell is a leading authority on EI, particularly on its use in the construction industry. He spoke at the 2020 *Partners in Progress* Conference where he challenged his audience to actively develop the EI to look beyond conflict and embrace the courage to change. He says that there are several advantages to

focusing on EI as a way to develop people and solve industry problems, including how labor and management might work better together.

"For one, since collaborative project delivery is now the norm, companies invest a lot of money in training soft skills, but rarely do they know if the training has been effective," Darnell says. "Because EI can be reliably measured using several different instruments, the effectiveness of that training can also be measured."

Another reason it's advantageous to focus on EI is that it may answer previously unanswered questions for individuals, he adds. "Whenever you see any behavioral issues in yourself or others, especially those related to relationships, communication, and how you present yourself to others, it will always show up in your EI profile," Darnell says. Profiles can show, for example, if someone is a micromanager or has trouble with relationships.

"Once they understand what emotional competencies are causing the behavior, and they want to change that behavior, they can work on the emotional competencies and create that behavioral change."

A third reason the construction industry might find EI useful relates to the fact that its people typically like numbers and



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“Because emotional intelligence (EI) can be reliably measured, people in the industry are much more likely to embrace the work of EI because it produces tangible results that can be tracked and improved.”

tolerance, and optimism. There were relatively lower scores in emotional self-awareness, emotional expression, interpersonal relationships, empathy, flexibility, and happiness.

“While these scores may be predictable, they do highlight potential roadblocks for those who have to work together, such as labor and management,” Darnell says, pointing to a six-point differential between assertiveness and empathy for the average person from the construction industry. “If that empathy is not improved, this can mean that these individuals may have trouble listening and asking for input and opinions from others,” he says.

One of the more interesting findings from the aggregation of construction industry scores came when Darnell and his team divided the results based on gender. Where men were high in self-regard, self-actualization, assertiveness, independence, problem-solving, and stress tolerance, women were high in emotional self-awareness, emotional expression, interpersonal relationships, empathy, social responsibility, and optimism.

“With the industry gravitating toward more collaborative project delivery methods, companies who recruit and advance more women will be much more successful,” Darnell writes in his book. “As a group, they simply have better emotional competencies for collaboration.”

No matter one’s gender, however, Darnell points out that EI is not static and can be improved. Construction workers, in particular, are quite susceptible to change because, in general, they are results-driven. “Once they see the value of this work, they attack it like they attack a tough project,” he says.

Plus, he adds, these changes show up as statistically significant increases in their EQI scores. For instance, after a group of construction managers went through Darnell’s EI program, on average their total EI, reality testing, and flexibility scores increased by five points each, and their emotional self-awareness score increased by six points.

“We say it often: awareness alone will not change behavior,” Darnell says. “This work with EI addresses the foundation of the cause of those behaviors, and you won’t shift behavior until you change the underlying emotional competency causing that behavior.” ■

This article was reprinted with permission from Partners in Progress magazine, December 2020 issue. Learn more at pinp.org.

improving those numbers, whether they are related to schedules, productivity, or a vast array of other metrics, Darnell says. Because EI can be reliably measured, people in the industry are much more likely to embrace the work of EI because it produces tangible results that can be tracked and improved.

One of the most widely used instruments for gauging EI is the Emotional Quotient Inventory, or EQi. It is a validated self-assessment tool that measures five composite scales (self-perception, self-expression, interpersonal, decision-making, and stress management) and sixteen individual emotional competencies, including self-regard, emotional expression, empathy, problem-solving, and stress tolerance. Similar to an IQ test, which measures intellectual capacity, an EQI score of 100 is the average of all people who have taken the evaluation.

In his book *The People-Profit Connection*, Darnell shares the scores of a number of different groups within the construction industry, as well as an aggregation of the scores from over 200 people across the industry. These include a wide cross-section of positions, including superintendents, foremen, project managers, engineers, labourers, and even CEOs.

The results may not be that surprising. On average, there were higher scores in self-actualization, assertiveness, independence, social responsibility, problem-solving, impulse control, stress

CHANGES IN BUILDING CODES AND CLEAN BUILDINGS ACT

State agencies have been working on changes to the state building codes and implementation of the *Clean Buildings Act*. These activities will impact SMACNA contractors.

State Building Code Changes

The State Building Code Council is in the process of updating the 2018 Commercial and Residential Building Codes, including the Energy Code. Many of the proposals the Council is considering will restrict natural gas and propane as fuel sources for a building's heat and water systems and will instead require heat pumps and heat pump water heaters with some exceptions. These changes will impact a SMACNA contractor's business model going forward.

This spring the Technical Advisory Groups (TAG) and the Standing Council Committees considered several proposed changes to the energy code for both commercial and residential. Restrictions on gas and requiring conversion to electric are part of many of the proposed changes. It is worth noting, however, that a proposal to require new residential construction be all electric did not make it out of the Energy TAG. The committee work will be consolidated into a proposed rule in July. The full Building Code Council will vote on the final rule to adopt the 2021 Code in November. The adopted 2021 Code will go into effect for new commercial and residential construction in July 2023.

Moving away from natural gas usage is not a new discussion. There have been several bills proposed in the legislature as recently as the 2022 session that would have required switching from natural gas to electric fuel sources and phasing out the use of natural gas in construction entirely. All these bills failed. Some legislators believe the Building Code Council is going beyond the scope of its authority in making these changes to phase out the use of gas since the legislature chose not to pass



By / Kathleen Collins,
Government Relations Consultant

laws mandating those changes. The Council, however, believes their mandate extends beyond energy efficiency and includes meeting state carbon reduction goals.

Clean Buildings Act – Expanded to Tier 2 Buildings

In 2019, the legislature passed a law requiring owners of commercial buildings over 50,000 square feet do an energy assessment of their property and begin making upgrades to meet the Clean Buildings Performance Standards. Failure to make the upgrades can result in penalties. The buildings covered in the 2019 law are the Tier 1 group.

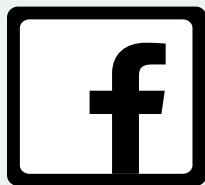
In 2022, the legislature passed another law to expand the types of buildings that are required to comply with the *Clean Buildings Act*. This Tier 2 group includes buildings 20,000 to 50,000 square feet and multi-family buildings over 50,000 square feet. Recently, building owners in Tier 1 received notices that they are covered by the law, but not without some confusion. SMACNA contractors may find the Department of Commerce website on this program helpful in working with building owners and understanding the details of the law.

Prevailing Wage Law Court Challenge

On June 2, the State Supreme Court heard a challenge to the 2018 Prevailing Wage Law adopted by the legislature. This law requires the use of collective bargaining agreements (CBA) to set the prevailing wage unless there is no CBA for that trade. In that case, the traditional survey method will be used.

The Associated General Contractors (AGC) filed a lawsuit challenging the law. The AGC argued that the use of CBAs violates the non-delegation doctrine of the state constitution. In their view, setting a prevailing wage rate is the duty of the government and should not be done by using a document that is the product of negotiations between two private parties. The court ruling might come out this fall but could take longer. If the court strikes down the Prevailing Wage Law, we can expect the building trades to propose an alternative approach that relies in part on CBAs.

If you need more information on any of these topics, please contact the SMACNA office. ■



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DEPRESSION AS AN INDUSTRIAL INJURY CLAIM

This month's legal update will be a review and summary of a recent Board of Industrial Insurance Appeals Significant Decision in *Todd A. Saeger, Claim No. Y-769857, Dkt. No. 19 18448 et al.* (BIIA Mar. 4, 2021).

Washington has had the most expensive workers' compensation costs for employers in the entire country for many years running. The significance of the Saeger case is that a prior Department of Labor and Industries' order that rejected depression being related to the industrial injury because the Claimant did not meet the criteria for the diagnosis did not prevent the Claimant from later asserting he had depression related to the claim. In this case, the Claimant was able to add depression onto his claim at a later date and received a workers' compensation pension in doing so.

Employers should continually monitor and have a proactive plan on their workers' compensation claims.

In re: Todd A. Saeger, Claim No. Y-769857, Dkt. No. 19 18448 et al. (BIIA Mar. 4, 2021)

Facts

The Claimant suffered back injury while working as mechanic for Empire Office Machine, Inc. in 2014. The Department denied payment for chiropractic services, ended/denied further time-loss compensation benefits, and closed the claim without an award for permanent partial impairment. The Claimant contends he suffered claim-related depressive disorder and is entitled to additional benefits. The Industrial Appeals Judge (IAJ) found Claimant was entitled to payment of the outstanding chiropractic bills for claim-related treatment, but that the Department had previously segregated the depressive disorder condition and affirmed the Department decisions regarding time-loss and claim closure.

Issue

If the Department has previously determined a Claimant does not have depression at the time it issues and order, then is the Claimant precluded from establishing he developed claim-related depression since that time? Answer: No.

Result

The Board of Industrial Insurance Appeals (BIIA) determined that the Claimant established developing depression proximately caused by his industrial injury. And, considering his claim-related depression along with other conditions, the BIIA found that he was permanently and totally disabled and that he was entitled to time-loss compensation for the time periods at issue and to a pension thereafter.

Analysis

The BIIA granted review because it disagreed with the analysis and determinations of the IAJ concerning the status of



By / JP Dowdle
Lawyer, Employer Solutions Law

Claimant's depressive disorder and its impact on his entitlement to benefits. The order issued in 2017 stated that depressive disorder was segregated from the claim because the worker "did not present with the condition upon examination." This order was not on appeal and became final.

However, the BIIA found *Dinnis v. Department of Labor & Industries* to be instructive. Because the claim was first closed in 2010 and later reopened, and closed, in 2020, under *Dinnis*, the Claimant was required to show that the conditions proximately caused by the industrial injury had permanently worsened based on a comparison of findings between the two terminal dates (2010 and 2020). Additional permanent disability needs to be supported by a comparison of medical findings as required by the supreme court in *Dinnis*. And while permanent disability based on physical conditions requires objective findings, such is not the case when a worsening is contended based on psychiatric conditions.

The appeal also addresses the issue in *Knowles v. Department of Labor and Industries*. In *Knowles*, the injured worker established that he developed a new condition during the aggravation period as a result of his industrial injury. The court held that the new condition was prima facie evidence of aggravation.

Here, the Claimant had a claim-related psychiatric evaluation that did not result in a diagnosis of depression. This was the basis for the 2017 order denying responsibility for the then undiagnosed depression. In turn, Claimant presented testimony from psychiatrist Ronald Early, M.D., who stated that Claimant's depression worsened between 2017 and 2020—the date of Dr. Early's examination. The BIIA found that the IAJ's determination that Dr. Early's testimony to be moot was made in error. Further, the BIIA found that the 2017 order was limited to a declaration that Claimant did not have depression as to that order's date. And, that Dr. Early's testimony established Claimant's depression was due to the industrial injury and should be covered.

Finally, the BIIA found the combination of Claimant's physical conditions, preexisting mental health conditions, and the

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VAV DIFFUSERS AND DUCT DESIGN STRATEGIES

New digital VAV diffusers with enhanced features are helping to fuel the growth of these systems. They are often now considered as an alternative to conventional VAV for smaller office renovation projects. While VAV diffusers operate in a similar manner to conventional VAV, a different ductwork design approach may be needed. VAV diffuser systems are pressure dependent, so the static pressure in ductwork has a direct impact on performance. VAV diffusers control the space temperature by regulating the airflow to the space with an integral air damper located behind the diffuser face.

The ductwork design can have a significant impact on the performance of a VAV diffuser system. Low pressure ductwork layouts designed with low loss fittings, 1.5 centreline elbows, and smooth tapered transitions can be sized to avoid sudden drops in system pressure and will perform better. Conventional VAV system ductwork is typically sized using the equal friction method, which as its name implies, is sized for an equal pressure loss (per linear foot) along its entire length. This method, however, may not be suitable for VAV diffusers, particularly for long ductwork runs with several bends as the static pressure will be significantly higher at the start of the run compared to the end, potentially causing noise issues at the first diffusers on the runout. Sizing the ductwork using the static regain method solves these issues as this method produces a duct system with a more or less uniform static pressure along its entire length, setting up good conditions for the VAV diffusers to operate.

An issue with the static regain method is that it's a more complicated and time consuming procedure compared to the equal friction method, which is very straightforward when done using "ductulator" tools.

To help with static regain sizing there are many software tools, available from various sources, that can calculate the duct static

pressure at any point along the ductwork run—so which method should be applied and when.

To begin with, there is no reason to size the main duct run using the static regain method, unless the engineer is trying to design a highly energy efficient duct system. The runouts to the floors should be fitted with pressure control dampers so static regain sizing may only be necessary from this point out to the zones. Duct runs with just a few elbows and transitions can usually be sized using equal friction without many issues, as long as the static pressure differential between the first and last VAV diffuser is no more than about 0.2 in water gauge. To put this into context, ductwork is typically designed in 0.08 to 0.1 inch w.g per 100 ft. so over 200 ft of ductwork would be needed to reach this differential limit. In contrast, a 10 inch, 90 degree elbow will have the same pressure drop as 70 feet of ductwork. So, ductwork length isn't the limiting factor. It is the number of elbows and fittings and their quality that determine whether a duct system that is sized using the equal friction method will successfully work with VAV diffusers. To summarize, if ductwork runs are relatively straightforward, equal friction sizing should give good results with VAV diffusers. For more complex duct systems, consider sizing the ductwork with static regain software tools. ■



By / Norm Grusnick,
Sales Manager, ECCO Supply

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REVIEW OF SMACNA'S DUCT CONSTRUCTION STANDARDS, 4TH EDITION

At our last meeting, the Western Washington Technical and Code Committee reviewed the changes and updates to the new edition of SMACNA's *HVAC Duct Construction Standards*, which builds on a duct construction standard that is almost 100 years old. The 3rd edition was published in 2005, so it was appropriate that this industry standard for the fabrication and installation of our duct systems should be updated to include new methods, materials, and technologies. With the release of this new edition, the accompanying press release stated:

"The sheet metal and HVAC industry continues to evolve and adapt to new technologies, and those changes are reflected in this new edition of the HVAC Duct Construction Standards. SMACNA has provided best-in-class information that allows code officials, design professionals, and contractors to deliver safe, modern, and resource-efficient constructed duct systems."

"Technical standards and manuals developed by SMACNA members have worldwide acceptance by the construction and code community, as well as local and national government agencies. SMACNA standards and manuals address all facets of the sheet metal and HVAC industry—including duct construction and installation, indoor air quality, energy recovery, roofing and architectural sheet metal, welding, and commissioning— and advancements are made possible by those in the industry who provide suggestions for improvement based on knowledge, experience, and research."

As a reference note, when using the 4th edition of the standards, please refer to the preamble on page "x", immediately preceding the Table of Contents, for a listing of changes and updates to this edition. The committee has listed these updates with page numbers (listed in the manual as "chapter number" followed by a period then "page number") and descriptions, including our committee's comments as applicable to assist our members in incorporating these updates into their own duct fabrication specifications and installation standards.

Item 1 – Added information on aerosolized and spray duct sealants: This new information can be found on chapter/page 1.13 under Sections 1.4.9 and 1.4.10. Aerosol based sealant systems are typically applied after the duct is fully assembled and installed, with the sealant blown into the interior of the duct under pressure, where the sealant material migrates to leakage points, collects there, and seals the duct. Although the committee members' experience with this system is limited, several members pointed out that this method of sealing ducts can adversely affect the operation of any moving parts inside ductwork, specifically damper operation. Spray based sealants, on the other hand, are similar to liquid-applied sealants on the



By / Peter Boileau, Chairperson

SMACNA-Western Washington Code & Technical Committee outside of duct seams and joints. This type of sealant can be more convenient to use for small repair or remodel projects and may be more cost-effective in our committee members' opinions.

Item 2 – Added tables for spiral flat oval duct for positive and negative pressure applications: These tables can be found on pages 3.30 through 3.43 (Tables 3-16 through 3-22). The committee reviewed this information and recommend that users pay particular attention to not only the information in these tables, but also to the explanatory notes on page 3.27. Notes S3.12, S3.14, S3.16, and S3.17 have all been updated from the previous edition of this standard to provide more clarity on how to use the tables to construct this type of ductwork.

Item 3 – Added options for internal supports for spiral flat oval duct: As in previous editions of these duct construction standards, reinforcement of the flat sides of spiral flat oval duct uses the same reinforcement requirements as rectangular duct (per page 3.27, note S3.13). This directs us to chapter 2 for guidance on joint and intermediate duct reinforcement requirements, including the use of internal stiffeners, if desired. Upon the committee's brief review of this item, we could see no obvious major changes to reinforcing tables/information and therefore this group will reach out to the national task force that developed the 4th edition for more information on what new options are available.

Item 4 – Updated liner requirements to include non-fiberglass liner types: Duct liner material and installation requirements can be found on pages 1.6 through 1.7, and pages 7.13 through 7.21. Based on our brief review, the committee could find no specific alternate materials described (e.g., closed cell foam as an alternative to fiberglass) and the information contained in these sections still describes installation techniques focused on fiberglass liner (e.g., "seal all raw edges with adhesive" which would not be necessary if using closed cell foam). As in item 3 above, we will reach out to the national task force for clarification on this item.

Item 5 – Added information for lined round duct: New information for lining round ductwork is found on pages 7.16 and 7.18, which includes basic installation standards, requirements,

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SMACNA-WW EVENTS

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presented at the conclusion of the program. Participants were encouraged to set goals and develop personalized action plans for their development. The purpose of this session was two-fold. Atiyeh was seeking to help participants make the learning stick by defining and committing to making changes when they return to the office. Secondly, the training aimed to encourage goal setting behavior by teaching how to set goals and develop plans to achieve those goals. ■

duct used in negative pressure applications. There is also significant information under the “Additional Considerations” and “Commentary” sections that in the committee members’ opinions provides excellent detailed information on how to properly use duct liner in round duct systems.

Item 6 – Added details for hangers to better illustrate where hangers are required: Updated information on hanger requirements can be found on pages 5.22 (elbow supports) and 5.23 (branch supports), which include additional support placement requirements spacing dimensions. These details reference Table 5-1 (page 5.7) and now include cable hanging systems as equivalent to straps and/or rods in certain cases.

Item 7 – Updated requirements for flex duct hanger spacing and hanger width: These new requirements can be found on pages 3.52 and 3.53, with some related commentary on page 3.54. The major change for this item is the reduction in hanger spacing from 5 feet to 4 feet. This change was discovered by our committee comparing the 3rd edition requirements to the new, 4th edition requirements, and we would recommend that this change be confirmed by our members as well, as the cost impact could be significant.

Item 8 – Added information for spiral fittings: The committee had a difficult time trying to determine the extent of the added information referenced by the new edition. Subtle changes were noted in the commentary on page 3.2, including some additional verbiage related to double-wall, rigid, round duct and lined, round duct, which is more thoroughly addressed in Item 3 above. As the committee had no additional reference information about what “added information” the 4th edition may have pertaining to spiral fittings, we will have to get clarification from the national task force that developed this edition.

In closing, the notes in the preamble on page “x” state that some inconsistencies were fixed in duct tables addressing TDC/TDF duct systems (including gage, reinforcement, size, and number of rods required) and minor corrections have been made to the round duct tables, as well. The committee recommends that our member companies use the information provided here, plus their own review of this updated standard to confirm they are fabricating and installing ductwork in accordance with this new standard. ■

INDUSTRY NEWS

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The researchers concluded that additional efforts would be needed to ensure that all schools could access and use resources for the ventilation improvements.

“Ensuring use of ventilation improvement resources might reduce transmission of SARS-CoV-2 and other infectious diseases in schools,” they wrote. “Focusing support on schools least likely to have implemented resource-intensive ventilation strategies might facilitate equitable implementation.” ■

IT’S THE LAW

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recently diagnosed depression, to establish no testifying medical or vocational expert believed that he could sustain full time gainful employment. Accordingly, Claimant persuasively showed he has ■

J.P. joined Employer Solutions Law in September 2021 as an Associate Attorney. He comes to the firm with a wide breadth of experience in employment litigation, personal injury law, insurance litigation, and business law. J.P. received his B.S. in Business from the Kelley School of Business at Indiana University in Bloomington, Indiana. He received his J.D. from the University of Washington School of Law. When not working at Employer Solutions Law, J.P. enjoys trail running in the greater Seattle area and playing with his Great Dane, Wallace.

CODE CORNER

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requirements for mechanical fastenings for certain duct sizes and orientations, nosing requirements for exposed liner edges, and fastening requirements for lined, single-wall, round

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