

SUMMER 2019

Sheet Metal Journal

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Western Washington



Building in virtual reality
Creating citizenM

OUR CONTRACTORS SET THE STANDARDS FOR THE INDUSTRY



SMACNA-Western Washington is a trade association and a Local Chapter of the Sheet Metal & Air Conditioning Contractors National Association (SMACNA), which is located in Chantilly, Virginia.

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 work
- Manufacturing and custom fabricating
- 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 areas of construction 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.



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TECHNOLOGY BOOM

There was a time, nearly ten years ago now, when I tried to talk to people in construction about technology and innovating their practices and business models, and a certain heaviness would hang in the silence over the phone line. In person, this line of questioning would cause people to stare at me as if I were on fire. Technology? Innovation? Change? You're barking up the wrong tree, lady.

Am I?

Here we are, just a few short years later and 78 percent of construction firms use three or more software technologies to manage their businesses, with estimating, project management, and BIM programs taking the top three popularity spots.

According to a report by Construction Executive, 77.4 percent of contractors surveyed said they receive bids electronically, and 32 percent use pencil and paper when performing a takeoff. Only 26 percent use project management or collaboration tools on the majority of their projects, while 23 percent don't use them at all.

BIM is taking a large portion of the market, in particular for its collaborative features—according to the CE report, 65 percent of contractors surveyed use it for collaborating across the construction phase, 50 percent see its potential as a marketing tool, and 47 percent use it to collaborate with the team pre-construction.

The report lists barriers to adoption – cost of devices, resistance to change, difficulty finding suitable programs, and cost of programs – but the natural progression of technology pricing will eventually evolve and take care of these matters, opening a whole new world of possibilities for contractors in all realms of construction.

If I could go back in time a decade and ask, I wonder what those same people would think of MacDonald-Miller's use of virtual reality to design, view, and change projects in the



By / Jessica Kirby, Editor

pre-construction phase of a project. This is the leading edge of technology and no doubt the future of the construction process. Check out page 12 for more.

These kinds of innovations are drawing a young, smart, hard-working cohort of people to the construction trades, and thank goodness because the labor shortage isn't going anywhere soon. The ability to draw new people to the industry is contingent on knowing what they are looking for and how that differs from what the generation before may have been looking for. Read Mark Webster's thoughts on this on page 6.

And speaking of technology, Auburn Mechanical recently completed an incredible modular building that showcases the possibilities these structure present, especially in the realm of labor-management partnerships. Read more on page 14.

Of course, with change comes uncertainty and we all deal with that differently. Some feel thrilled by the possibilities and others feel nervous, but at the end of the day change is inevitable. It brings opportunity and change, and welcomes a fresh slate for learning and growth. Thank goodness SMACNA-WW members have a strong, passionate association behind them for support and technical advice. Check out the fabulous association events coming up and previous highlights pages 8-11, and feel free to reach out with questions or for more information. ■

UPCOMING SMACNA-WW EVENTS

August 20

Women's Alliance Luncheon with Sylvie di Giusto
Hyatt Regency Lake Washington, Renton

September 18

Teatro ZinZanni Membership Event
Woodinville, WA

August 2

Annual Golf Tournament
Washington National Golf Club, Auburn

October 20-23

2019 SMACNA National Convention
Austin, TX

November 12

Membership Meeting with Anirban Basu
Seatac Marriott

December 6

2019 Holiday Gala
Seattle Waterfront Marriott

MAJOR CHANGES COMING TO THE 2018 INTERNATIONAL MECHANICAL CODE

Many code jurisdictions are currently (and inevitably) working on adoption of the 2018 family of International Building Codes, including the International Mechanical Code (IMC). This article will focus on a significant group of code changes and additions regarding commercial kitchen ventilation systems, including for the first-time code language relating to requirements for “pollution control units” installed in Type 1 grease exhaust systems. The SMACNA Western Washington Code and Technical Committee has done a recent review and scrub of this new code language and would like to share our findings with our fellow SMACNA-WW members. We should also note that the code sections referenced below are from the 2018 IMC code, which the committee uses in its review and presentation of findings below.

Section 202, Commercial Cooking Appliances Definition (Revised):

The technical committee reviewed the revised definition of “Commercial Cooking Appliances”. Previous code language attempted to define commercial kitchen code requirements based on the cooking appliances in the space. The list was incomplete and subject to a wide range of interpretation. This definition needs to be clear as it effects the requirements for kitchen hoods (Chapter 5), including when these are required, and if required, which type needs to be installed. The new definition of a commercial cooking appliances is, “Appliances used in a commercial food service establishment for heating or cooking food. For the purpose of this definition, a commercial food service establishment is where food is prepared for sale or is prepared on a scale that is by volume and frequency not representative of domestic household cooking.” The committee agrees with this revised definition, as it more clearly defines commercial kitchens and their associated code requirements as kitchens that either make food for sale or make quantities of food that do not compare with domestic cooking quantities. This definition also provides clarity for small kitchens located in commercial buildings (e.g. office building break rooms with kitchen appliances) that now fall under residential/domestic kitchen code requirements.

Section 202, Pollution Control Unit (PCU) Definition (New):

The technical committee reviewed the new code language describing this type of equipment, which is becoming more common in use but to date has not been addressed by the IMC. The new definition a PCU is described as “Manufactured equipment that is installed in a grease exhaust duct system for the purpose of extracting smoke, grease particles and odors from the exhaust flow by means of a series of filters”.

Section 506.3.13, Type 1 Exhaust Hood Termination: The group reviewed this code “clarification” and decided that there is no significant change to previous code requirements.



By / Peter Boileau

Chairman of SMACNA-WW ICC Code/Technical Advisory Committee

The additional documentation provided in the 2018 IMC provides additional details, including a diagram to clarify minimum distance requirements from a Type 1 exhaust hood wall outlet to fixed windows, operable windows, doors, and outside air intakes. In past code descriptions it was not completely clear on minimum distance requirements from Type 1 exhaust hood outlets to operable windows and outside air louvers (could be interpreted as 3 feet; code intent is 10 feet). The committee agreed that there has been uncertainty in the past on minimum clearances and this code clarification better defines these minimum code distances for each type of exterior wall opening.

Section 506.5.2, Pollution Control Units: This is a new code section, which describes the requirements for the installation of Type 1 grease hood pollution control units, which are built to extract the majority of grease and odors from type 1 hood/duct systems. As this is a relatively new technology, no specific code requirements have been in place to address the specifics of this type of installation. The new code language relies heavily on compliance with “manufacturer’s installation instructions”, but also addresses details on how to hook this equipment into Type 1 grease duct systems (e.g. requirements for flexible connectors). The specific code language describing the installation and operation of pollution-control units (PCU) is as follows:

1. Pollution-control units shall be listed and labeled in accordance with UL 1978.
2. Fans serving pollution-control units shall be listed and labeled in accordance with UL 762.
3. Pollution-control units shall be mounted and secured in accordance with the manufacturer’s installation instructions and the International Building Code.
4. Pollution-control units located indoors shall be listed and labeled for such use. Where enclosed duct systems, as required by Section 506.3.11, are connected to a pollution control unit, such unit shall be located in a room or space having the same fire-resistance rating as the duct enclosure. Access shall be provided for servicing and cleaning of the unit. The space or enclosure shall be ventilated in accordance with the manufacturer’s installation instructions.

continued on page 22

MARK WEBSTER, DIRECTOR EXECUTIVE VP AND COO, MACDONALD-MILLER

By / Jessica Kirby

Mark Webster is a director with the SMACNA-Western Washington board, serving his second two-year term. He also serves a president of the Mechanical Contractors' Association (MCA) in Western Washington and sits on and is past-chair of the Industry Advisory Council at the University of Washington.

Webster has been with MacDonald-Miller for 34 of his 37 years in the sheet metal industry. MacDonald-Miller is a full-service mechanical contractor servicing the Western Washington area with a specialty in downtown construction, hospitals, tenant work, and service.

He started out putting his mechanical engineering degree to good use as a consultant, when MacDonald-Miller contacted him with an opening. He went to work for the company and has never looked back.

"I like the people in the industry, and I like learning new things," Webster says. "And I like building things and so all those things go together in this job. I have been very fortunate to have many different positions at MacDonald-Miller and opportunities to learn many things."

As Executive VP and Chief Operating Officer, Webster has an important perspective on what makes a company successful. "If you are not building projects in the company, you are building people," he says. "And that is even more important than the projects. They deserve as much or more attention and quality of your time than any project."

He has seen many changes, challenges, and opportunities unfold in the sheet metal industry over the years, not the least of which is the demand for more complicated projects in less time than ever.

"Thankfully, we have the technology to help achieve these projects," he says. "I think the technology is both a challenge and an opportunity because it can be immensely helpful, but challenging to know when to incorporate it so it makes the company better and not because it is the latest and greatest."

Tying in with the rise of technology is the influx of young people to the sheet metal trade—a trend Webster says is the industry's biggest opportunity moving forward. "The younger people coming into our industry are very smart, hard working, and driven to be successful," he says. "All of us need to understand how to tap into that talent, because what they are



Photo courtesy of MacDonald-Miller

looking for isn't necessarily the same as what we were looking for. Every generation needs to learn what motivates the next. It's going to be a big opportunity to see where these bright young people are going to take our industry."

As the trade moves forward into its bright future, SMACNA will have three important roles, Webster says. "The first is to continue to attract young people and make opportunities available to them," he says. "Next, we must continue to develop a good relationship with labor because they are on the same team, and if we are both focused on the problem we will both be more powerful than working against each other. Finally, we must become better today than we were yesterday by always working on improving and being better and never being satisfied."

This last point is an important part of what Webster hopes to bring to the industry and make his mission during his time on the board. "I would say my personal mission is to make us be better tomorrow than we are today," he says. "I am going to work with labor to develop a good working relationship, and I want to make sure we set goals and objectives in SMACNA that will truly make SMANCA and our industry better. I also want to make sure we get the right people working on those goals and objectives."

"I'm very grateful for the career I have and that I've been afforded a lot of great opportunities," he adds. "I want the next generation to have all of those and more." ■

WELCOME NEW SMACNA-WW MEMBERS

SMACNA-Western Washington is proud to welcome its newest contractor and affiliate members. Membership in SMACNA-WW ensures collective information sharing, problem solving, and industry betterment, and offers all members the support and resources they need to help contribute to a stronger industry for all.

CONTRACTOR

Pacific BIM Services

Pacific BIM Services is a premier HVAC detailing service contractor, dedicated to helping MEP contractors improve speed, efficiency, and profitability through the use of BIM tools and processes.

Signatory with Sheet Metal Local 66, its team of virtual design and construction experts boasts unparalleled industry expertise and experience tailored especially to meet the needs of the MEP sector. By using pre-construction 3D laser scanning, modeling, or coordination services, HVAC contractors are able to achieve far more accurate planning and control on projects.

Learn more at www.pacbim.us

AFFILIATES

Ahlers Cressman & Sleight

With more than a century of combined experience in construction law, Ahlers Cressman & Sleight is able to offer top-level counsel and personal service. Its team understands the inherent challenges of both large-scale and smaller construction projects, and the depth of their experience and focus on the needs of on-time and on-budget project delivery allows them to help anticipate and avoid costly and disruptive disputes. The firm's dedication to creating a diverse and open work environment helps it to attract the top minds in construction law, and to put their passion and talent to work for clients all over the Pacific Northwest and Alaska.

Learn more at www.acslawyers.com

Johns Manville

Johns Manville is a leading manufacturer and marketer of premium-quality insulation and commercial roofing, along with glass fibers and nonwovens for commercial, industrial and residential applications. Its history goes back to 1858, when the H.W. Johns Manufacturing Company began operations out of a tenement building in New York City.

Today, JM products are used in a wide variety of industries including building products, aerospace, automotive and transportation, filtration, commercial interiors, waterproofing, and wind energy. A proud member of the Berkshire Hathaway family of companies, JM serves customers in more than 80 countries around the globe.

Learn more at www.jm.com

Sunbelt Rentals

Sunbelt Rentals equips customers for success. Its company vision is built on providing uncommon responsiveness no matter where, no matter what, and on supporting customers with solutions that bring value to any project, from the small projects to the industrial giants and for the planned or unplanned.

Sunbelt is one of the largest equipment rental companies in North America with more than 825 locations. As it grows, its expertise, product range, and specialty solutions grow, too. Sunbelt is paving the way to serving customers' many needs. That's the power of Sunbelt.

Learn more at www.sunbeltrentals.com

Ductmate Industries

With manufacturing and distribution facilities dotting the planet, Ductmate is one of the largest HVAC system components manufacturers in the world and the largest in the United States. Its emphasis on engineering and R&D produces distinct advantages over competing duct system manufacturers.

By delivering consistently-high product quality, uninterrupted supply, and unparalleled service and support, Ductmate improves on-time delivery and finished project quality, while reducing time on the job and installed system cost.

Learn more at ductmate.com

Do you have an article idea you'd like to share? Great!

Please reach out to our editor, Jessica Kirby, to table your suggestions for a future issue of *Sheet Metal Journal - Western Washington*

Contact Jessica at: 250.816.3671 or email jkirby@pointonemedia.com

SMACNA NATIONAL CONVENTION

October 20– 23 • JW Marriott, Austin, TX

To kick off the National Convention, SMACNA-Western Washington has arranged a fabulous brunch at Formula 1 – Circuits of the Americas, which will include an exciting driving experience. This event is optional, but one you won't want to miss.

For its Chapter Dinner, SMACNA-Western Washington has planned an exquisite dining experience at the historic Driskill Grill. After dinner, you are welcome to explore the various music venues on Sixth Street. Additionally, a shuttle service will be provided throughout the evening.

For more information contact Carrie Heinrich at cheinrich@smacnaww.org ▪

JOINT MEMBERSHIP AND COLLEGE NIGHT AT THE MARINERS

In one of the year's most popular events, SMACNA-Western Washington once again hosted a joint membership and College Night event at the Mariners vs. Angels on May 31. Construction management, engineering, and business students were invited to participate in a fun networking event with SMACNA-WW members so they could learn more about a fast-paced, innovative, fun, and challenging career in commercial construction. More than 80 members and 40 college students from University of WA, Washington State University, and Central WA University came out to enjoy a fabulous evening of networking, great food, and beverages. The evening capped off with a 4-3 win for the Mariners and a stunning firework display.

Stay on top of future membership events with SMACNA-WW by reading these pages, keeping an eye on your email, or reaching out to cheinrich@smacnaww.org. ▪

Photos courtesy of Julie Muller-Neff



SMACNA-WW ANNUAL GOLF TOURNAMENT – WASHINGTON NATIONAL GOLF CLUB, AUBURN

Join us Friday, August 2, 2019

The lucky registrants who filled this day's roster of fun, frolic, and friendly competition will not be disappointed when the gang gets together this August for golfing excitement. Check-in and registration begin at 8 a.m., and at 9:45 a.m. a helicopter drop and shotgun will kick-off the day.



Don't forget to come in your PAC-12 attire and similarly themed decorations for your cart. A prize will be given for the best decorated cart. For optimal performance, SMACNA-WW will provide catered breakfast, lunch, and dinner. Top-scoring participants will receive prizes and awards. Happy hour and tournament scoring are at 3 p.m., finishing off with dinner, awards, and prizes beginning at 4 p.m. Bring your golf clubs and your best shot!

Anyone who didn't register but wishes to be placed on a waitlist can contact the SMACNA-WW office. There are still great sponsorship opportunities available, so drop in or email to find out how to showcase your company on this wonderful day that is enjoyed by all. ▪

TEATRO ZINZANNI – SEPTEMBER MEMBERSHIP EVENT

Experience the Mystery September 18, 2019

Witness a three-hour whirlwind of dazzling cirque, comedy, and cabaret at SMACNA-WW's September Membership Event, Teatro ZinZanni. The ever-evolving production combines improv comedy, vaudeville revue, music, dance, cirque, and sensuality that is never quite the same evening to evening. Famous for its intimate setting, the past-paced action of the show unfolds around you as you enjoy a multi-course feast and elegant libations. Don't miss the show *The New York Times* calls "the hottest ticket in town"!

Teatro ZinZanni's main event is part circus, part cabaret, and always magical. It engages, transforms, educates, and delights audiences with a unique celebration of cirque, comedy, and cabaret in an intimate live experience. Teatro ZinZanni was created by a team of creative artists and theatre professionals who have been working together for over 40 years in the Puget Sound area providing live entertainment for the communities of the Pacific Northwest.

To learn more and to register to attend please email Carrie Heinrich at cheinrich@smacnaww.org and watch your email for details. ▪

WOMEN'S EVENT AND LUNCHEON: "YOU HAVE SEVEN SECONDS. MAKE THEM COUNT!"

Be inspired by Sylvie di Guisto August 20, 2019 at the Hyatt Regency Lake Washington

People we meet make quick decisions about us. Should they hire us? Trust us? Buy something from us? It takes a blink of an eye and, like it or not, you are going to be judged.

"You have seven seconds. Make them count!" says keynote speaker and corporate trainer Sylvie di Guisto, CSP, who helps individuals and organizations explore how people make up their minds very quickly about them, their leadership potential, or the company, and either open the door for them or slam it shut. With nearly 20 years of corporate experience, Sylvie empowers people to influence the success of their own careers. She uses her extensive expertise to work for companies, professionals, and politicians who place great importance on the impressions they make.

Sylvie will show you how you can influence the message you send to others, and make customers buy faster ... and return for more. Registration for this event will open at 9:30 a.m. The meeting and program will run from 10-12, and lunch will be served 12-1:30.

All are invited to attend, including project managers, estimators, engineers, administrative staff, safety personnel, field crew, and show crew. ▪



SAFETY & TECH CONFERENCE

SMACNA-WW's Safety & Tech Conference held May 29 was by far the best turnout for any of the association's educational events with over 90 attendees. The event featured several educational sessions on Safety & Tech in the sheet metal industry. Topics and speakers included:

- National Safety Update with speakers Mike McCullion from SMACNA National and Randall Krocka from SMOHIT
- New Technology Session with Guy Skillet, Rhumbix
- Keynote: Districted Driving with David Teater, Focus Driven
- Safety 101 with Travis Brock, Shield of Armor
- Stretch-n-Flex with Kevin Rindal, Vimocity
- System Effect with Mark Terzigni, SMACNA National
- Focus Four Construction with Travis Brock, Shield of Armor
- Risk Management with Karen Forner, K-Law Solutions
- Duct Design and Fitting Selection & National Update with Mark Terzigni, SMACNA National

The sessions were well-received with attendees speaking highly of all speakers, with particular focus on keynote speaker, David Teater.

SMACNA-WW is looking to host another conference for 2020—if there are any topics and/or speakers that you feel would be beneficial to our membership please email Carrie at cheinrich@smacnaww.org.

Contact Carrie at cheinrich@smacnaww.org if you would like to receive any of the presentations or handouts from this event.

SMACNA-WW would to thank all of those who attended and the following sponsorship exhibitors:

- Cole Industrial, Inc.
- Dorse
- Federate Insurance
- Fully Effective Employees
- Johns Manville
- K-Solutions Law
- Ness & Campbell Crane
- NW Safety Consultants
- On-Site Safety
- PlanGrid
- Shield of Armor
- SMOHIT
- Star Rentals
- Vimocity
- Western Safety



Submit your news, story, or photo idea



SMJ-WW is on the lookout for interesting HVAC, architectural sheet metal, testing & balancing, and industrial / specialty news and feature topics. If you have a great idea, notice an industry issue that needs addressing, or want to weigh in on a technical subject, we would love to hear from you.

We also need great pictures – current and historical – of people working in all aspects of the sheet metal industry. If you have something to share, please email it to our editor with a caption about what is going on in the photo.

Questions about how else to get involved in a future issue of Sheet Metal Journal? Reach out to our editor, Jessica Kirby, at jessica.kirby@pointonemedia.com or 250.816.3671 and get the scoop.



FOREMAN TRAINING

An engaging, insightful success

SMANCA-Western Washington hosted Foreman Training with guest speaker Kevin Dougherty on June 12 with more than 60 member attendees.

Kevin provided an engaging and insightful presentation on the realities of “people management” and making the “transition into leadership”. To help attendees be successful in such areas, Kevin introduced a method of time management and organization called the “bullet journal”. Bullet journals were handed out to all attendees in the class and Kevin walked through setting up the journal and explained how it would help plan, organize, and effectively execute time management skills over time.

One attendee remarked, “Kevin is a great speaker. I will always make it a priority to attend.” ▪



SMACNA members perform work in industrial, commercial, institutional, and residential markets. They specialize in heating, ventilation and air conditioning, architectural sheet metal, industrial sheet metal, kitchen equipment, specialty stainless steel work, manufacturing, siding and decking, testing and balancing, service, and energy management and maintenance.

CONTRACTOR MEMBERS

ACCO Engineered Systems	Holmberg Mechanical
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AIRTEST Co., Inc.	L & M Sheet Metal Fabricators Inc.
Apollo Mechanical Contractors	MacDonald-Miller Facility Solutions Inc.
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Auburn Mechanical, Inc.	Miller Sheet Metal, Inc.
Ballard Sheet Metal Works, Inc.	Miller's Smith & Losli Sheet Metal, Inc.
Capital Sheet Metal Inc. dba Capital Heating and Cooling	Neudorfer Engineers, Inc.
D/B Solutions, LLC	Olympia Sheet Metal, Inc.
Delta Technology Corporation	Pacific BIM Services
Distribution International	Phoenix Mechanical, Inc.
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Emerald Aire, Inc.	PSF Mechanical, Inc.
ENVIROMECH	PSR Mechanical
Evergreen State Heat & AC	Schmitt's Sheet Metal & Roofing
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H & R Mechanical Systems, Inc.	Sunset Air, Inc.
Hermanson Company, LLP	Temp Control Mechanical Services Corp.
Holiday-Parks, Inc.	University Mechanical Contractors, Inc.

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FBM SPI	Sunbelt Rentals
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Building in virtual reality

Pre-construction walkthroughs and changes in virtual reality are now possible at MacDonald-Miller Facility Solutions

By / Meg Landies

Photos courtesy of MacDonald-Miller

As a design-build mechanical contractor with projects throughout the Pacific Northwest, MacDonald-Miller Facility Solutions is in the business of designing, installing, and optimizing a building's HVAC systems. As the construction industry grows, with it the company understands the growing need for technology to bridge gaps between resources, manpower, and time.

The MLAB is a computer-aided virtual environment in the heart of MacDonald-Miller's Seattle headquarters. This 750-square-foot room, with 24-foot-tall movie-theater screens for walls, is a space for groups to gather in a multi-use experience of a project. This capability allows any piece of equipment to be modified through software, solving problems before the walls of a building even go up, and saving time and money down the road.

"When people are experiencing their project at the MLAB, there is more than just excitement to walk through their building," said Luke Barendse, sheet metal detailer for MacDonald-Miller. "The value for our customers comes from a sense of control over their project, the ability to make changes to design on the fly, and coordinate in real-time with their teams."

Because of the MLAB, MacDonald-Miller can take a project, plug in the schedule, and see its aesthetic and functional form and its level of completion at any given date or time. With this level of technology in the industry, the full range of possibilities is yet to be discovered.

This project collaboration does not require everyone to physically be in the MLAB room. Someone in the company's Tri-Cities office can throw on a virtual reality (VR) headset and join the virtual experience with other members of the team. "This means we can expand our partnerships and streamline our communication with no geographical limitations," says Bradd Busick, chief information officer.

MacDonald-Miller's use of VR technology takes 3D modeling and traditional building information modeling (BIM) further by integrating 4D time simulations and 5D cost analysis, which means labor and time costs are also taken into consideration. For example, using VR one can move a piece of equipment and receive instant, real-time feedback on the cost and time associated with the change.

“There are new jobs being created that we haven’t even thought about yet. Perhaps a virtual designer or a virtual engineer. We think this will be a huge market sector.”



“To be able to come in before construction begins, see the structure, and make changes if necessary saves tons of time and money and change orders,” said Nicole Martin, marketing manager. “The MLAB helps build this collaborative environment for the architect, the owner, the general contractors, and us. I really think it’s going to change the construction industry, and I’m excited for how it’s going to change the workforce. As younger people come to the industry, we’re facing a huge shortage of union workers and field people, so having this technology that they can get excited about is really going to help.”

Virtual reality technology includes the ability to adjust the user settings, including literal perspective. That means even if the VR headset user is 5 foot 9 inches, he can see the project from the perspective of someone who is 5 foot 4 inches.

“That is a key factor when you have a facility guy who is 6 foot 8 inches come in and you need to know if he will be able to fit into a space comfortably to work,” said Busick.

The introduction of technology streamlines the work process and mitigates the possibility of error, but a strong human workforce is still at the core of these projects' success.

“At the end of the day, there are still people swinging hammers,” said Busick. “But upstream of that, there are new jobs being created that we haven’t even thought about yet. Perhaps a virtual designer or a virtual engineer. We think this will be a huge market sector.”

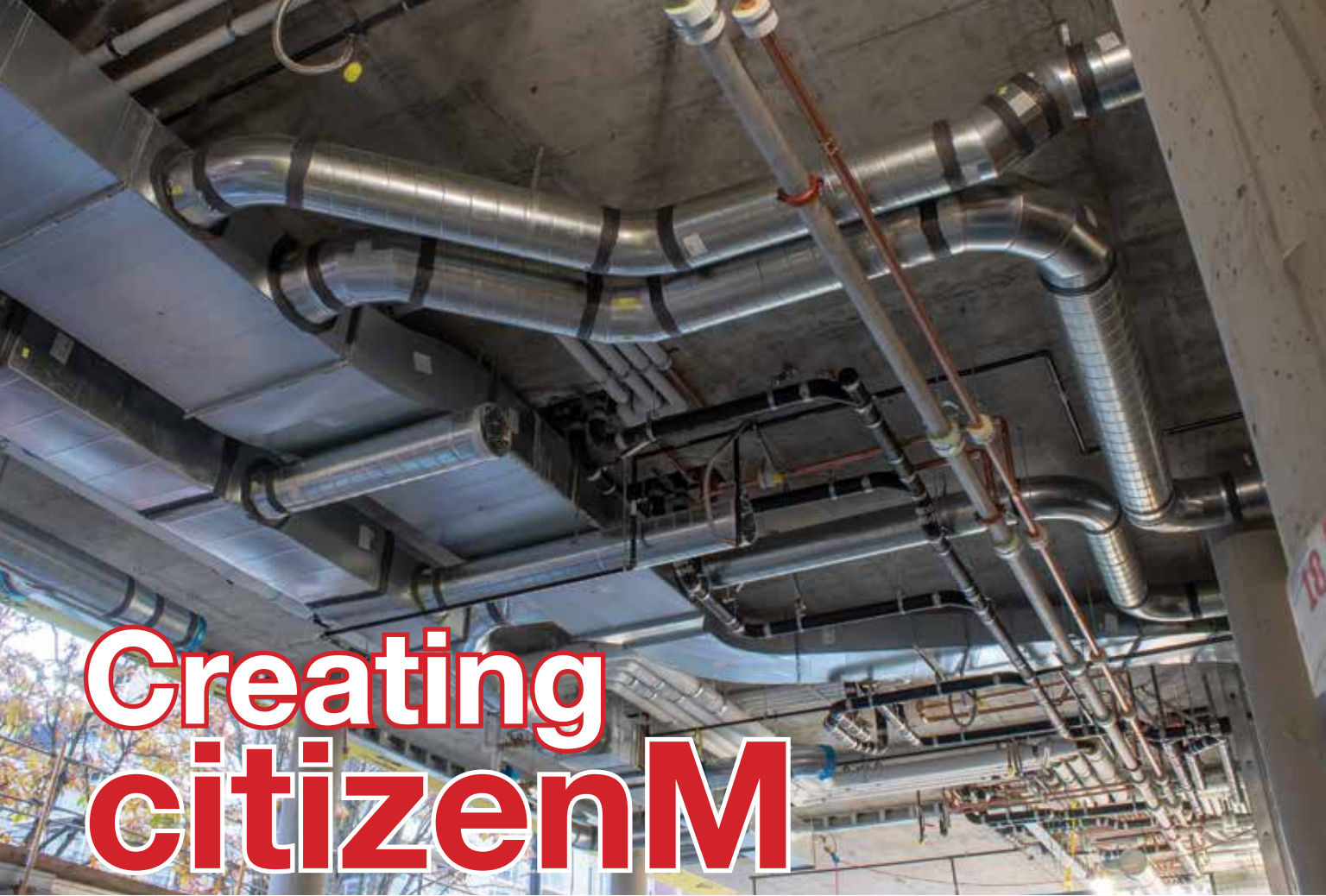
Detailing is another field that will prove vital to the future of the construction industry, especially as 4D and 5D technologies become more prevalent.



“The amount of time saved, material saved, and overall planning saved by designing and coordinating prior to construction is worth its weight in gold,” said Barendse. “Being part of the MLAB has been one of the most satisfying and exciting parts of my job. Being able to view a project I’m working on and walk around in it in a literal sense is exciting. The MLAB brings projects to life in a new and fresh way.”

Confident VR will become standard in the future, MacDonald-Miller is breaking ground with the technology now, and its team is excited to see where the possibilities can take the company, its customers, and its projects.

“We’re the first of our kind, and we’re using this time to work through all the kinks,” said Busick. “We’re calling it a lab because we’re experimenting—we’re trying things out, breaking things in. And we’ve had some pretty wild success with it thus far.” ■



Creating citizenM

By / Natalie Bruckner

Photos courtesy of Auburn Mechanical

Reprinted with permission from Partners in Progress magazine February 2019 issue. Visit www.pinpmag.com for back issues and more information on this jointly-funded partnership.

Seattle's South Lake Union district, better known among locals as SLU, is headquarters to cutting edge businesses like Starbucks and Amazon. It makes sense that any new hotel in SLU should be cutting edge too, which is why Dutch firm CitizenM is creating Seattle's first lodgings built in a modular fashion, intended for guests who are tech-savvy and prefer urban, contemporary settings.

The lobby, offices, and infrastructure of the 264-room CitizenM Seattle South Lake Union hotel were built traditionally by Mortenson Construction, but the hotel rooms were prefabricated in Poland, shipped to Seattle, and are being stacked by crane on top of one another.

This type of construction is endemic to CitizenM projects around the world because it means speed-to-market and early revenue (projects can be delivered in up to half the time of regular construction, in addition to requiring 90 percent fewer vehicle movements to and from the construction site); and in Seattle the job was facilitated by a fruitful collaboration between Auburn Mechanical and Local 66.

Jim Reynolds, vice president, HVAC design and construction for Auburn, explains, "We relied on Local 66's skilled detailers throughout the design stage to help turn our shop drawings into construction documents."

He points out that this was crucial to the expediency of the stacking process, since each prefabricated hotel suite was outfitted in Poland with utilities that had to be connected to the new hotel infrastructure in Seattle. Reynolds goes on to note that CitizenM sought Auburn to provide value engineering, constructability input, and pricing.

"We made sure to involve the detailers from day one of the design process," Reynolds says. "All of us sat down with the project manager, combed through the drawings and filled in gaps as they appeared, and gave our input back to the engineers—a process that lasted about nine months."

One of the biggest challenges of the new CitizenM hotel from Auburn's perspective was deciding the most efficient way to get outside air into the hotel and inside air out, because there

would be six levels of stacked modules on top of a ground level lobby, a food service canteen, and a basement full of mechanical components.

“We had to take great care deciding where to go with the shafts and eventually decided to work from the top of the building down,” Reynolds says.

It should be noted that every pair of rooms on each level of the hotel would be a reverse image of the other, and the HVAC shafts, plumbing, electrical, and other utilities would be run in between the room pairs, which worked out to 44 rooms per floor and 22 shafts.

The successful design collaboration was especially fulfilling, given a recent CitizenM hotel project in New York City that had the modular component but minus the off-site installation of utilities. “Everything was done on site, and the project became very labor intensive and expensive,” Reynolds says.

CitizenM’s devotion to modular design was enthusiastically embraced by Mortenson, whose general manager, Phil Greany, pointed out last year as the company was preparing for an August start to the stacking process, “It solves the specific regional issues we are facing in skilled labor shortages, capacity/backlog of the local subcontractors and suppliers, and the logistical nightmare created on our streets, with projects on what seems like every block.”

The modular division of Poland’s Polcom Group was tasked with the fabrication of the Seattle hotel units, based on its experience working with CitizenM in New York and other international locations. Full-time inspectors presided over construction of the 264 suites, which began with the formation of steel cages. The completed modules were wrapped in an air and water barrier that would remain in place when the units were stacked on top of each other on-site, and then shipped to Seattle, a four-week journey. “Essentially, all we have to do on-site is hook everything up,” says Reynolds.

As of February the stacking process continued on time and on budget. “Seattle has always been an early adopter of different building concepts, and prefab modular is one of them,” Reynolds says. “But for me, this project was also an opportunity to continue the bridge-building between SMACNA and SMART that began when we reached our six year agreement.”

Modular building, is just one evolving technology bringing a new face to the sheet metal industry, and Local 66 keeps a key eye on regional trends that help shape its programming. “Technology is an ever moving target and as a Local union we are dedicated to staying in front of these technologies in order to provide a trained workforce to signatory contractors,” Business Manager for Local 66 Tim Carter, says.

Reynolds says he believes there is a place for modular construction, especially in the hotel and residential marketplace.





The biggest risks to the modular construction model are the modular manufacturer’s quality control, shipping and protection of the modules, and high quality 3D modeling—the latter being the place SMACNA and SMART have the most control and can bring the most value to the modular concept.

“This is where our highly trained labor partners make a significant contribution, converting the engineers documents to constructible 3D fabrication documents,” Reynolds says. “It is also where we bring the opportunity for modular design and fabrication—specifically prefabrication—to the infrastructure outside of the room modules, meaning the chilled and hot water piping, domestic waste water, and venting and the electrical distribution.”

This last item is where previous projects have fallen short, and was a major contributing factor to Auburn Mechanical being selected for the projects, Reynolds adds.

Johnson says the relationship between the Local and Auburn—Reynolds in particular—was a key factor in the project's success. “[He] is a very fair and open person to work with on the management side,” says Johnson. “Our senior managers have a lot of respect for him. I know that for those of us who swing the hammers we’re all grown up and don’t need an 'atta boy' from anyone, but in reality we like a good word here and there, and that’s the kind of support we get from Auburn.” ■

Auburn is scheduled to do a second CitizenM hotel in Seattle that will not be modular because its high-rise classification is not compatible with CitizenM’s current modular design.

“It will be very interesting to compare pricing and labor efficiency on these two projects, since they are very similar except for the high-rise provisions,” Reynolds says.

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4 WAYS FASTDUCT® 18 MAKES ESTIMATING FASTER AND BETTER THAN EVER

At the turn of 2019, FastEST, Inc. released the latest and greatest versions of its estimating software programs. FastEST is well into its third decade of providing top-tier estimating solutions and continues to improve upon the already award-winning FastDUCT®, FastPIPE®, and FastWRAP™ programs. The programs have changed and improved in a variety of ways. Let's take a look at a few of the examples within the FastDUCT® 18 program.

Improved takeoff interface

As technology evolves, FastEST is staying on the cutting-edge. The latest version is programmed to be able to handle the details and intricacies of HD, ultra HD, and 4K monitors. The display, both in-program and, most importantly, in the takeoff screen, is now higher-resolution with an optimized layout. The simplified takeoff screen design streamlines how the buttons are organized, plus increases the plan viewport window, so users can see more of their digital plan as they takeoff. This improved takeoff screen means faster takeoffs than ever before, which means more bids completed faster and more awarded projects in a contractor's backlog.

New features galore

Within the latest version of FastDUCT®, there are many new, innovative features available, along with the opportunity to add more features down the road. One example is our new Visual Deduct takeoff tool, which grants users the ability to takeoff on the digital plan with highlighted mark-ups like usual, but it will actually count towards deducted work, or perhaps change order work (where there is some removal but some new work installed as well, for example). Another instance of a new feature is the ability to create scalable assemblies so that a kit of parts (for example, a run of multiple ducts on a trapeze hanger) can be scaled off in linear feet.

File compression, program speed

The file structure has changed with the latest versions of the FastEST programs, as well. These changes "under the covers" wouldn't be easily explained to a layman, but the bottom line is, the changes affect estimators, project managers, and other users of the programs for the better. Files have been compressed, which means faster saving of estimate data, quicker report calculations, and faster real-time movement within the active takeoff screen. It's also very handy for improved file back-ups, so estimates can easily be recovered should a user's computer crash or if the network connection gets interrupted.

Benefits for multi-user and network users

This file compression also extends benefits into the realm of contractors who use our program within an office, across multiple users, and especially in a networked environment.



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AN UPDATE ON LEED AND SMACNA IAQ GUIDELINES

In 2008, an article was published in *Sheet Metal Journal-BC* titled “SMACNA’s Indoor Air Quality Guidelines and LEED Environmental Quality Credits”. Eleven years later, it’s time for an update.

At that time, the Leadership in Energy and Environmental Design (LEED) green building rating system—then for new construction and major retrofits—was titled LEED NC-1.0. Since then, there have been several revisions and updates, including LEED 2009, a major change with the introduction of LEED version 4 (known as LEED v4) in 2016, and most recently, the release of LEED v4.1 in January 2019.

These various versions of LEED have pushed the global green building market progressively, with over 90,000 registered and certified projects and more than 19 billion square feet of space worldwide.

LEED continues to provide a benchmark for the design, construction, and operation of high-performance green buildings and promotes a whole-building approach to sustainability. LEED v4.1 now recognizes performance in eight key areas: (1) location and transportation; (2) sustainable sites; (3) water efficiency; (4) energy and atmosphere; (5) materials and resources; (6) indoor environmental quality; (7) integrative project planning and design; and (8) innovation.

LEED certification continues to be based on the total point score achieved, following an independent review and an audit of selected credits. There are four levels of LEED certification: Certified, Silver, Gold, and Platinum. Successful LEED projects across the United States are frequently highlighted on the USGBC website at www.usgbc.org.

Even as LEED requirements have changed with each revision, a SMACNA publication continues to play a key role in obtaining one of the Environmental Quality (EQ) Credits. In LEED v4.1, the stated intent of the EQ credit titled Construction IAQ Management Plan During Construction is “to promote the well-being of construction workers and building occupants by minimizing indoor air quality problems associated with construction and renovation”.

In LEED v4.1, to achieve this EQ credit, the following requirement is specified:

During construction, meet or exceed all applicable recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, NSI/SMACNA 008 2008, Chapter 3.



By / Chris Collett

Principal Consultant and CEO
Christopher Collett and Associates Ltd.

Chapter three in the SMACNA IAQ Guideline describes a series of control measures to help minimize contamination of a building from construction activities. These include HVAC System Protection, Source Control, Pathway Interruption, Housekeeping, and Scheduling.

The primary goal of HVAC Protection is to prevent construction debris from entering the ductwork and spaces. To achieve this, the return side of the HVAC system should be isolated during heavy construction or demolition. At times when the HVAC system has to be operated during construction, temporary filters should be installed, and these should be replaced just prior to occupancy.

Source Control is achieved through the selection of low emission materials and finishes including paints, sealants, adhesives, carpeting, other furnishings, and cleaning products. There are an ever-increasing number of low-emission products available in the construction industry.

Pathway Interruption is an important strategy to prevent the migration of contaminants through a building during construction. Approaches can include ventilation using 100% outside air during installation of volatile organic compound (VOC) emitting materials and erecting physical barriers between work areas and non-work areas.

Housekeeping should be standard practice in all projects, with frequent cleaning to remove construction dust and debris, immediate clean-up of any spills, removal of accumulated water, and other actions to keep work areas dry to prevent the potential for the growth of microbial contaminants.

Careful Scheduling of the sequence of construction can minimize the absorption of VOCs by other building materials that can act as “sinks”. For example, paints, sealants, and other volatile materials should be applied and allowed to dry before ceiling tile and carpets are installed.

While the SMACNA IAQ Guideline provides the framework to achieve the LEED v4.1 EQ credit for Construction IAQ

continued on page 22

2019 LEGISLATIVE SESSION RECAP

The 2019 Legislative session ended on April 28 with a flurry of activity on budgets and new taxes as well as several new environment and contracting laws. The Democrats had increased majorities in both the House and the Senate giving them the bandwidth to be more aggressive on fiscal and policy issues.

The state's 2019-21 operating budget grew 17.5 percent above the current budget. The Legislature started the session with an additional \$6 billion more from growth in current revenues but still added \$1.9 billion in new taxes by the end of session. These new taxes are:

- A 20 percent increase in the services category for Business and Occupation (B&O), dedicated to education related costs.
- A three-tiered real estate excise tax on the sale price of the property; the new maximum rate is 3% on properties over \$3 million.
- An increase the toxics tax on a barrel of oil imposed at the refinery level.
- A doubling of the B&O tax rate for large banks.

Some of these new taxes will get passed on directly or indirectly to SMACNA contractors. Contractors who pay B&O in the services category for part of their business will pay more. The increased tax on oil will likely will get passed on as an increase in the price of gas.

The Legislature passed several bills related to construction and contracting.

- SB 5334 changes the condominium warranty provisions by applying building codes that were in place at the time of construction, requiring the breach of warranty to be significant and setting up new standards for proving damage. SMACNA supported this bill because it will reduce the risk of law suits that has been a recurring problem for contractors who build condominiums.
- HB 1295 changes provisions for public owner construction projects. It removes the limitations on design build projects between \$2 million and \$10 million, makes job order contracting available to any public entity, and requires apprenticeship utilization for any contract over \$350,000 and exceeding 600 hours in a single trade.
- SB 5418 increases the bid limits for selected local governments and requires a study by the Capital Projects Advisory Review Board. SMACNA opposed the bid limit increases in this bill.

There are new laws dealing with prevailing wage and collective bargaining.

- SB 5035 increases penalties for prevailing wage violations and increases the time to file a complaint. This new law



By / Kathleen Collins
SMACNA Legislative Consultant

also requires contractors to keep a certified payroll for all public projects and to submit the information to Labor and Industries at least once a month. SMACNA can provide resources to find out how to comply with the certified payroll requirement.

- HB 1743 creates an exception from the law passed in 2018 that requires using the collective bargaining agreement to set the prevailing wage. The exceptions are for: affordable housing, homeless and domestic violence shelters, low-income weatherization, and home rehabilitation public works. For these types of programs, the wages will be set by surveys. This compromise bill was negotiated by the Building & Construction Trades Council.
- SB 5233 allows an exception from the state paid sick leave law for construction workers. This new law allows construction workers who are covered by a collective bargaining agreement and participate in an approved referral union program (hiring hall) to waive paid sick leave requirements if they will be covered by equivalent leave that meets the requirements in state law. Payment for the leave may occur before usage. The terms of the waiver must be negotiated with the employer. This new law describes the type of program agreed to by the Mechanical Contractors Association. SMACNA was neutral on this legislation.

Governor Inslee had an aggressive climate change agenda in 2019. Three bills that passed as part of that agenda will be of particular interest to SMACNA contractors.

- HB 1112 phases out hydrofluorocarbons and requires the use of a safe replacement. Several types of refrigerated equipment are included and are phased in at different dates. Of particular interest to SMACNA contractors is the requirement to use of an alternative refrigerant in new and retrofitted commercial AC units and in new and retrofitted refrigerated food storage. The new law goes into effect January 1, 2020. SMACNA joined others in asking for a date extension to ensure adequate supply of the replacement, but we were not successful.
- HB 1257 requires large commercial buildings to retrofit their buildings to meet new state energy performance standards.

continued on page 22

NEW PREVAILING WAGE TRAINING REQUIREMENTS TAKE EFFECT JULY 1, 2019

Effective July 1, 2019, all businesses in Washington State are required to complete training before bidding or performing work on public works projects. The Washington State legislature passed ESSHB 1673, which adds new requirements to responsible bidder criteria for public works contracts.

The training covers a variety of topics relevant to paying prevailing wages on public works projects, including how to handle the bidding process and how to determine the correct rate of pay for the workers. The training is required for all businesses working on public works projects that commence after July 1, 2019. Both the agency awarding the public works contract and the general contractor are responsible for verifying that subcontractors have completed the prevailing wage training.

Verifying that the training is completed

A new “verify a contractor” tool has been launched to assist with verifying that the company or contractors you’ve hired to work on a public works project have completed the required training. The “verify a contractor” tool can be found at: <https://lni.wa.gov/TradesLicensing/Contractors/Workshops/Training.asp>. This tool also provides a link to a list of risk classes and prevailing wages for job descriptions.

Businesses who are exempt from this training

Businesses are exempt from this training requirement if they have been in business with an active UBI number for 3 or more years and have performed work on 3 or more public works projects. Additionally, you may continue to work on a public works project



By / Karen Forner

that commenced before July 1, 2019 and continues on or after July 1, 2019 without needing to complete the required training.

Where is this training?

The training can be completed online or in person. The online training can be accessed through L&I’s “Prevailing Wage Intent and Affidavit” portal on the Department of Labor and Industries’ website. The Department of Labor and Industries is also holding 3-hour in-person training classes, a schedule of which is available on the Department’s website. ■

Karen Galipeau Forner is the founder and managing member of K-Solutions Law in Bellevue, Washington. Karen represents employers in the areas of workplace safety, workers’ compensation, administrative appeals and employment law. She is a frequent presenter at continuing legal education seminars and to employer groups. Karen has over 25 years’ experience defending and resolving a wide range of workers’ compensation, WISHA and employment law matters. Prior to starting K-Solutions Law, Karen worked as senior attorney at a law firm in Seattle and for the Washington State Attorney General’s Office. She was the Program Advisor for the Industrial Insurance and Washington Industrial Safety and Health Act (WISHA) Discrimination Programs for more than ten years and the Program Advisor for the Workers’ Compensation Self-Insurance Program. Karen also litigated complex WISHA, Industrial Insurance, Third Party and Crime Victims Compensation Act cases. She recently served on the Washington State Bar Association Character and Fitness Board.



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GETTING THINGS DONE: URGENT VS IMPORTANT

Making decisions about controlling your time and utilizing your talent requires you to be thoughtful and strategic. One of the first steps on this path is to learn the difference between “urgent” and “important” tasks.

Don't mistake urgency for importance. Don't think that because a fire is burning it warrants your immediate attention every single time. Often the fires will burn themselves out. And don't think that endlessly jumping from one thing to another is good leadership.

Have you ever had a day when you feel you worked your ass off and got nothing done? That was a day when you decided to focus on urgent issues instead of important ones.

If you look at the box to the right, you can easily see how to categorize any task that needs your attention. Everything you do fits into one of the boxes numbered one through four. Let's take a look at what might fit into these boxes:

Box 1: Urgent and Important (Take Action Now)

These are things that need attention now. Both the critical nature of the issue and immediate timing combine in this box. Some examples would be:

- Responses to key clients
- Decisions where time or money is on the line
- Deadline-driven projects, tasks, or important commitments
- Critical decisions that cannot be made by subordinates

Box 2: Important but Not Urgent (Be Proactive)

There are things that are important but often don't jump out as vital. Time spent on these things, though, directly improves the bottom-line results of the organization. Ignore these tasks at your peril. Examples of important-but-not-urgent tasks would include:

- Planning
- Evaluating people
- Evaluating systems
- Client relationship building

Box 3: Urgent but Not Important (Don't Be Reactive)

These are things that are time-driven and may or may not be worthy of your action. Because of habit or others' needs, we can sometimes get lost in urgent-but-not-important activities, which become matters of “daily firefighting.” A lot of work is involved but not much really gets done. Some urgent-but-not-important items include:

- 50% of all phone calls
- 80% of all email
- 95% of text messages



By / Mark Breslin

	URGENT	NOT URGENT
IMPORTANT	Urgent & Important 1 Do it now	Not Urgent & Important 2 Block off time for this
NOT IMPORTANT	Urgent & Not Important 3 Automate or delegate	Not Urgent & Not Important 4 Periodically do this to recharge

- Problems brought to you by others for you to solve that they have not tried to solve themselves
- Personnel issues that can and should wait
- Any form of employee venting, frustration, or emotional dumping that does not lead to resolutions

Box 4: Not Important and Not Urgent (Be Disciplined and Ignore)

We live in a multitasking world where immediate reaction is standard behavior. Young people especially think they need to respond moment-to-moment via email or social media. This is indulgent and simply a bad habit to be addressed. This is a key area where major chunks of time are wasted.

Poor planners fill their time by focusing on tasks that are neither urgent nor important. It's the stuff people do when they are reactive instead of proactive. It means inaction. This is bad stuff.

So there it is. A simple matrix to getting things done. Important stuff—not everything all the time; not what you like to do and are good at; not what other people want you to do for them.

Get your boxes lined up and apply discipline and focus—the results for you and your team will be profound. ■

CODE CORNER

continued from page 5

5. A clearance of not less than 18 inches (457 mm) shall be maintained between the pollution-control unit and combustible material.
6. Roof-mounted pollution-control units shall be listed for outdoor installation and shall be mounted not less than 18 inches (457 mm) above the roof.
7. Exhaust outlets for pollution-control units shall be in accordance with Section 506.3.13.
8. An airflow differential pressure control shall be provided to monitor the pressure-drop across the filter sections of a pollution-control unit. When the airflow is reduced below the design velocity, the airflow differential pressure control shall activate a visual alarm located in the area where cooking operations occur.
9. Pollution-control units shall be provided with a factory-installed fire suppression system.
10. Service space shall be provided in accordance with the manufacturer’s instructions for the pollution-control unit and the requirements of Section 306.
11. Wash-down drains shall discharge through a grease interceptor and shall be sized for the flow. Drains shall be sealed with a trap or other approved means to prevent air bypass. Where a trap is utilized it shall have a seal depth that accounts for the system pressurization and evaporation between cleanings.
12. Protection from freezing shall be provided for the water supply and fire suppression systems where such systems are subject to freezing.
13. Duct connections to pollution-control units shall be in accordance with Section 506.3.2.3. Where water splash or carryover can occur in the transition duct as a result of a washing operation, the transition duct shall slope downward toward the cabinet drain pan for a length not less than 18 inches (457 mm). Ducts shall transition to the full size of the unit’s inlet and outlet openings.
14. Extra-heavy-duty appliance exhaust systems shall not be connected to pollution-control units except where such units are specifically designed and listed for use with solid fuels.
15. Pollution-control units shall be maintained in accordance with the manufacturer’s instructions.

The committee agreed with the new language describing this equipment and the installation requirements for same. We

could not identify any missing or unclear language in the 2018 code language and look forward to having code language regarding this type of installation for engineers, contractors and code inspectors to reference on future projects. ■

ENGINEER'S DESK

continued from page 18

Management, successful application of the credit requires clear documentation of the IAQ Management Plan, and effective communication of the practical management procedures to the trades working throughout the construction process. In successful projects, on-going review of these construction related IAQ issues is included as part of the regular commissioning meetings.

The current SMACNA IAQ Guideline is available for purchase on the SMACNA website at www.smacna.org/bookstore.

LEGISLATIVE UPDATES

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The requirements for building owners to comply start in 2026 for the largest commercial buildings and will go into effect for buildings 50,000 square feet or larger in 2028. The Commerce Department is charged with writing the new energy performance standards for building retrofits by November 1, 2020. Commerce says there are no other similar codes in the country, so they will be relying on energy performance experts to assist them with developing the requirements. Commerce is still sorting out which buildings are included as the new law has several exceptions. Buildings owners that have not complied by the deadlines will pay a penalty. SMACNA supported this bill.

- SB 5116 is the Governor’s 100 percent clean electricity bill. By 2045 all electric utilities must produce electricity from only renewable resources. There are interim targets and exceptions when a utility can’t comply. This new law does not affect residential and commercial use of natural gas.

The 2019 session was a busy one. Besides the new laws mentioned above, the Legislature tackled housing, behavior health, and education. If you need more detailed information about any of the bills described here, please contact the SMACNA office. ■

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A photograph of a factory interior. In the foreground, a man wearing an orange hoodie with 'PSF' on the back and a black cap is leaning over a workbench, looking at a laptop. In the background, another man in a blue shirt and safety glasses is working with a large piece of machinery. The factory has various pipes, equipment, and a high ceiling with industrial lighting.

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