

FALL 2017

# Sheet Metal

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Western Washington

Journal

## Project Spotlight: MacDonald-Miller

*Also in this issue:*

**Safety as a Mirror of Engagement**

**Pike Place MarketFront**



WESTERN WASHINGTON  
Official Journal of  
Record for SMACNA-WW

# 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:

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- Industrial sheet metal
- Kitchen equipment
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- 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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## PUBLISHED QUARTERLY BY

Point One Media Inc.

Sheet Metal Journal - Western Washington  
P.O. Box 11, Station A Nanaimo, BC V9R 5K4  
Toll-free: 877.755.2762  
www.sheetmetaljournal.com

While information contained in this publication has been compiled from sources deemed to be reliable, the publisher may not be held liable for omissions or errors.

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Printed in the USA.

Postage paid at Aberdeen, SD.

To update or cancel subscriptions please call 1.877.755.2762, email circulations@pointonemedia.com, or visit www.sheetmetaljournal.com

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## FEATURES

### 10

#### Project Spotlight: MacDonald-Miller

MacDonald-Miller employed multi-trade racks at University of Washington for higher productivity and quality control.

### 14

#### Safety as a Mirror of Engagement

Safety, as a cause everyone can stand behind, can bring a business back from the brink of ruin.

### 16

#### Pike Place MarketFront

Seattle's iconic Pike Place Market employs a cutting edge new mechanical system thanks to Auburn Mechanical, Inc.

## DEPARTMENTS

- |    |                    |    |                  |
|----|--------------------|----|------------------|
| 4  | Editorial Comment  | 20 | It's the Law     |
| 5  | SMACNA-WW Update   | 21 | Engineer's Desk  |
| 6  | Association Events | 22 | Contractors 101  |
| 8  | Industry News      | 23 | Advertiser Index |
| 19 | Legislative Update |    |                  |

Next issue: Technology • Construction Outlook • Project: Johansen

**INNOVATION KEY TO SUCCESS**

Construction association reports in several jurisdictions indicate the construction sector lags behind others when it comes to innovation. While this shouldn't come as a surprise to most, it is important to understand how "innovation" is defined and what the criteria are for establishing one's rank, as an industry, company, or individual, in the innovation race.

Innovation defined means a new idea, device, or method, and but it can also mean, in more specific terms, the application of better solutions that meet new requirements, unarticulated needs, or existing market needs, according to an article in *Journal of Education for Business*. In this sense, innovation doesn't always mean a new thing; it is just as relevant applying old tricks to new scenarios to create more effective, productive, and lucrative results.

One 2016 report defines innovation as the successful introduction of new technologies or procedures into industry. In terms of construction, this means anything from products, equipment, and materials to techniques and management strategies. Construction innovation across the sector is largely locally-focused, undiversified, and with relatively small export markets, compared with other industries. Some will say, "So what?" as they drive the same vehicle to the same shop and use the same tools to produce the same widget they have for decades, knowing everything is running smoothly and if it isn't broken ...

Except sometimes it doesn't have to be broken to instigate change. If we jump into deep water wearing a child's life jacket, we will not stay afloat, even if the life jacket is in excellent shape. External factors are ever present in our growing, changing, and in many ways, shrinking world and the static rarely survive.

As we move into the next five years we have a global market, labour shortages, advancement in technology, and social pressures urging us to the edge of our comfort zones where the successful will leap into new forays and the others will wave from the shore.



By / Jessica Kirby, Editor

Although it may affect individual businesses very differently, there is general agreement that the way construction gets done ten years from now will be very different from today. Innovation will be essential to the industry as a whole to reduce capital construction costs, improve productivity, increase the number of projects completed on time and within budget, and reduce the number of defects and accidents. Investment in innovation can also help companies to differentiate, improve their reputation, and compete for the next generation of talent in a tight labour market, according to one 2016 report produced in Canada, but the results apply across North America.

Remember, innovation doesn't have to mean a full-on, made-for-reality-TV makeover or from-the-ground-up rebuild. Create and market a Facebook page and reach new clients. Train foremen on management and leadership and see internal productivity boost. Renovate the front office to rejuvenate office staff and see what it does for customer service. Demo one new tool a month and blow your mind with the efficiency of new technology. Automate just one process and save time for more important things like golf.

Never forget: the edge the construction industry has over other sectors is it's essential nature—no matter the business climate, we will always continue to build into the future in some capacity. Whether your company is part of that future depends on your ability and willingness to innovate. ■



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## SPONSORS TAKE WOMEN HIGHER UP THE CORPORATE LADDER

Discussion around the difference between sponsorship and mentorship has been ongoing since Sylvia Ann Hewlett, present and CEO of think tank Center for Talent Innovation, launched a two-year study on the subject followed by a book titled, *Forget a Mentor, Find a Sponsor*.

Mentors, says Hewlett, provide a sounding board, a shoulder to lean on, and one-sided guidance with little expectation in return. A sponsor, on the other hand, is an invested party engaged in a two-way relationship. The sponsor delivers straightforward advice and feedback, and the protégé delivers outstanding performance that demonstrates the sponsor's investment is well warranted.

According to Hewlett's research, men and women were 38-56% more likely to ask for a pay raise or request assignment to a high-visibility team or assignment with the support of a sponsor. The measurable difference between people working with and without sponsors is higher for women than for men, pointing to an obvious advantage for women to enter into these types of arrangements if they are interested in climbing the corporate ladder.

Women are encouraged to choose their sponsors selectively, choosing those powerfully positioned rather than personal role models, and to be prepared to work hard to ensure they deliver on their sponsor's investment of support. Consider a sponsor's high-level contacts, access to career-advancing assignments, ability to give critical feedback, and other traits when choosing.

Be sure to attend the upcoming SMACNA National convention session, developed by the SMACNA Women in Leadership Council, to learn the difference between mentors and sponsors and how to identify potential sponsors.

At this session, you will discover eight steps to gaining sponsorship and leave with a personalized plan to attract the attention of influential sponsors. Participants will also take part in a discussion about what it takes to be an effective sponsor and ways to create a culture of sponsorship in your organization and industry.

The session will be hosted by Jo Miller, founding editor of BeLeaderly.com, CEO of Women's Leadership Coaching Inc., and the creator of the Women's Leadership Coaching® system, a roadmap for women who want to break into leadership positions in business. Her system is used successfully by thousands of women worldwide, and identifies key steps women must take to advance to positions of influence and leadership.



By / Julie A. Muller-Neff, Esq.  
Executive Vice-President, SMACNA-WW

This workshop is just one of several ways SMACNA continues to develop future leadership and recruit members. Another growing incentive, SMACNA's Young Leaders (SMAC-YA) program, is focused on recruiting and retaining the best and helping them climb the ladder of success. This initiative of SMACNA-Western Washington's began in 2016 and is chaired by Brian Fluetsch, SMACNA-WW's current president, with assistance from its committee members: Dave Baggott, Lisa Connors, Trenton Fluetsch, David Happe, Ryan Lund, Rylan MacCay, Nathan Marsh, Marshall Nichols, Ryan O'Rourke, and James Slater.

SMAC-YA hosts two events per year, plus recruiting events—one of its most successful was featured in the summer issue of *Sheet Metal Journal – Western Washington* (see “Construction Management College Night at the Seattle Mariners” on page 6 of that issue).

Coming up is an Industry Career Night at UW, followed by a SMACNA-sponsored networking event at Flatstick Pub. This event and others like it are designed to bring college recruits together with young leaders in our industry to show them how cool the HVAC and mechanical industry is.

Until next time... ▀

Sheet Metal Journal  
www.sheetmetaljournal.com Western Washington

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## SMACNA – WW 2017 PAC-12 GOLF TOURNAMENT

*Photos courtesy of SMACNA-WW*

It was a fabulous day for SMACNA-Western Washington's 2017 PAC-12 golf tournament held at Washington National Golf Club this June.

The only things that make amazing weather and a picturesque golf course even better are scrumptious food, free flowing drinks, and a massage cabana, and this event had all of it. Throw in a photo booth, golf cannon, crane ball drop, and fabulous contest prizes (including Maui Jim sunglasses for tee gifts) and the result is an exciting day of fun and networking for all participants. The tournament concluded with a mouthwatering dinner, raffle drawing, and contest announcement.

SMACNA-WW would like to thank all participants and send congratulations to the tournament's big team winners:

- **Team with the most school spirit:** Jim Frees and William Gonzales
- **3rd place overall:** Mike Reichert, Joel Slagg, Nate Waagen, and Josh Stokes
- **2nd place overall:** Jim Reynolds, Dale King, Jerome LaMear, and Grant Willman
- **1st place overall:** BJ Giri, Binit Giri, Ryan O'Rourke, and Mike Greenheck

The Association would also like to send a big thank you to its golf committee: Marshall Nichols, Ryan O'Rourke, Carrie Grage, and Mike Reichert.

Last but far from least, SMACNA-WW would like to give an enormous thank you to all of its sponsors, without whom this event could not take place. Their contributions helped make this a fabulous and memorable tournament.

Mark your calendars for the 2018 tournament August 3, 2018. ■





**UPCOMING SMACNA-WW EVENTS**

**October 22 - 25**  
**SMACNA National Convention**  
 Maui, HI

**November 8**  
**SMACNA Membership Meeting**  
 SeaTac Marriott

**November Membership Meeting w/ Dr. Jean Twenge**  
 Mark your calendars for November 8, 2017, and join your fellow SMACNA-WW members at our membership meeting with guest speaker, Dr. Jean Twenge. Dr. Twenge will speak on the topic of iGen—how iGen and Millenials differ from previous generations and how to recruit iGens and Millenials. This meeting will be held at the Seatac Marriott, and begins at 4 p.m., followed by reception and dinner. Watch your email for more information.

**December 1**  
**SMACNA Annual Holiday Gala**  
 Seattle Waterfront Marriott



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.

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### INTRODUCING SMACNA'S NEW DOWNSPOUT AND GUTTER SIZING CALCULATOR

One of the most frequently asked architectural questions SMACNA receives is on sizing gutters and downspouts. In response, SMACNA's Technical Resources Department has created a free Downspout and Gutter Sizing Calculator.

The Downspout and Gutter Sizing Calculator is located on the Tools, CAD, and Apps page of the SMACNA website.

Now architects, engineers, designers, and contractors can easily and accurately size downspouts and gutters according to the specifications in SMACNA's "Architectural Sheet Metal Manual," 7th edition, 2012.

#### Includes Rain Intensity Wizard

The calculator includes a Rain Intensity Wizard enabling one to select the nearest city and the information taken from the tables in the "Architectural Sheet Metal Manual." The rain intensity according to Table 1-2 (Rainfall Data and Drainage Factors) uses a 5-minute duration for a 10-year or 100-year storm, thereby providing a worst-case scenario for the downspout and gutter design.

Since the rain intensity data is constantly being updated by the National Oceanic and Atmospheric Administration (NOAA), this calculator also allows the user to manually enter the rainfall intensity. This feature allows one to use calculations according to the local authority with jurisdiction in that area. For the most up-to-date Rain Intensity Data, visit NOAA's website and use "Precipitation Intensity" as the data type.

#### Design Area Wizard

SMACNA's new Downspout and Gutter Sizing Calculator enables the user to manually enter the Design Area of the roof or use the Design Area Wizard for the calculation. This Wizard makes it easy to calculate the roof Design Area by providing various shape calculations and the calculation for Vertical Walls area per International Plumbing Code (IPC).

The gutter and downspout size requirement depends upon the number of sections and length of the gutter sections as well as the number of downspouts. Adding additional sections of gutter reduces the length of each section and will reduce the gutter size. Also, the gutter width in relation to height may also be adjusted. Plus, adding more downspouts will change the downspout volume, resulting in smaller gutters/downspouts.

The Sheet Metal and Air Conditioning Contractors' National Association is an international trade association representing 3,500 contributing contractor firms and is dedicated to promoting quality and excellence in the sheet metal and air

conditioning industry. SMACNA has national offices in Chantilly, Va., outside of Washington, D.C., as well as on Capitol Hill. Visit [www.smacna.org](http://www.smacna.org) for more information. ■

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### RECORD INVESTMENT PROPELS DOWNTOWN DEVELOPMENT IN 2017

The Downtown Seattle Association's *2017 Mid-Year Development Guide* indicates a record \$5 billion in current construction activity downtown. Residential builders are racing to meet demand with more than 30,000 units under construction or in development. Hotels continue to invest in new rooms, and as more employers locate downtown, commercial contractors are poised to deliver millions of square feet of new office space.

A mix of public and private investment is fueling this transformative growth in downtown Seattle. The Pike Place MarketFront expansion, Hing Hay Park improvements and other public space enhancements are providing more community assets for people who live, work or visit downtown.

Industry leaders like Amazon, Apple, Facebook, F5 and Google are expanding their downtown footprints, bringing additional workers and residents to downtown, and spurring additional economic growth in downtown neighborhoods.

Highlights include:

There is currently \$5 billion in construction activity, a 40 percent increase over last year and more than triple its lowest point in 2011.

Residential projects continue to dominate, representing two-thirds of all projects under construction downtown. Most of this continues to be focused on apartment development.

The pace of office construction has nearly tripled over the past decade, which will deliver over the next three years as much square footage as was delivered in the previous nine.

Hotel development is setting records, including what will be the largest hotel in the region – a new 1,264-room Hyatt Regency in the growing Denny Regrade area. That project will be completed in 2018.

For a link to the Development Guide and other downtown construction information, please visit DSA's development homepage. ■



## SAVE TIME, STREAMLINE WORKFLOWS WITH CONSTRUCTION MOBILE APPS

If you are interested in saving your field staff time and money by streamlining processes, you'll want to attend "Apps for Construction—Exploring the Five Workflows for Mobile Devices," during SMACNA's 74th Annual Convention in Maui.

Rob McKinney will demonstrate the ins and outs of the five work flows for mobile devices, mobile device management, and app selection and implementation, as well as his thoughts on the future of technology.

A consultant with JBKnowledge Inc. and a self-taught construction technologist, Mr. McKinney has developed a mobile device program centered around applications used on tablets and smartphones.

The session's purpose is to research and implement new apps and devices to improve workflows. The end goal is to save field staff time and money by streamlining processes and creating a more collaborative work environment.

Don't miss SMACNA's 74th Annual Convention in beautiful Maui on Oct. 22-25. Register today on SMACNA's Annual Convention webpage. ■

## CAPITOL HILL UPDATE: SHAHEEN "HEAT ACT" REDUCES MANUFACTURERS' COSTS, SUPPORTS ENERGY RELIANCE

SMACNA supports the "Heat Efficiency through Applied Technology (HEAT) Act of 2017" (S. 1711), which will enhance both manufacturing and national industrial competitiveness. The legislation will help make our manufacturing sector more energy efficient by boosting energy grid reliability and reducing carbon emissions through increased industrial energy efficiency.

Sen. Jeanne Shaheen (D-N.H.) recently reintroduced the bill in the Senate. It would address the major regulatory barriers hampering the deployment of heat recovery technologies, such as combined heat and power (CHP) and waste heat to power (WHP).

The HEAT Act would direct the Department of Energy and the Federal Energy Regulatory Commission to establish model best practices addressing regulatory barriers to CHP and WHP. It would also create a targeted, voluntary grant program to help states implement Environmental Protection Agency guidance on output-based emission standards which

encourages efficient use of fuel through CHP and WHP.

Show your support by communicating with Congress on this key legislation and more on SMACNA's Advocacy webpage. ■

## SAFETY FIRST! ATTEND SAFETY CHAMPIONS CONFERENCE, FEB. 25-27

Learn the industry's latest best safety and health practices at the Safety Champions Conference Feb. 25-27, 2018, at the Talking Stick Resort in Scottsdale, Ariz.

A continuing effort to help create an improved safety culture, the Safety Champions Conference will focus on current safety and health issues facing the sheet metal industry and how to overcome them. The conference is sponsored by SMACNA and the Sheet Metal Occupational Health Institute (SMOHIT).

The conference is free to all Industry Fund contributing contractor representatives—you only need to pay for travel and hotel accommodations.

Prior conferences have traditionally included a diverse list of attendees including representatives from SMACNA's labor partner SMART, SMACNA contractors, and JATC training centers.

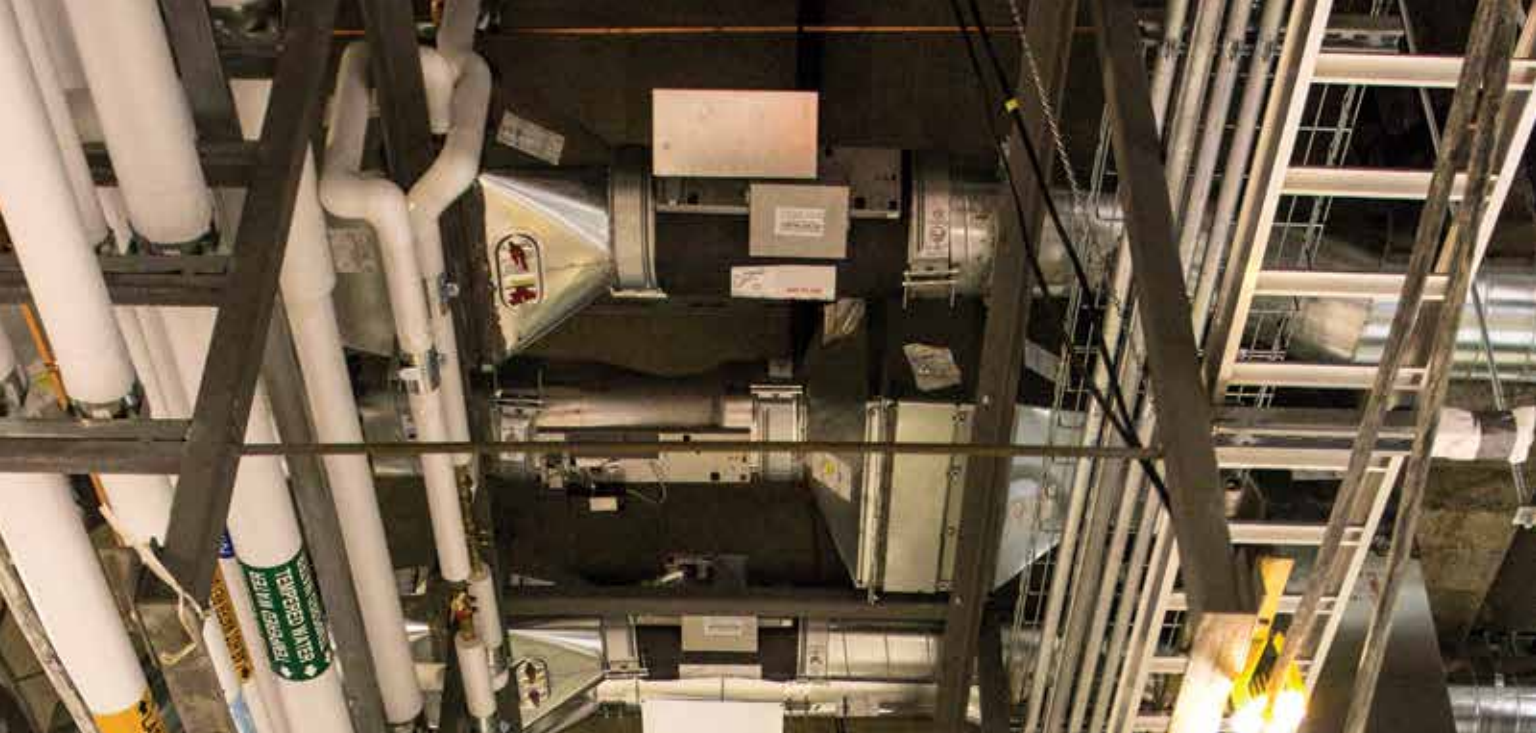
The SMOHIT Safety Matters Awards will also be presented to individuals and companies who actively spread the word about safety and health. Directed to those who have a "voice in safety and health" regardless of job title, responsibilities, or company size, winners demonstrate safety through example and have a passion for keeping workers safe and healthy.

SMACNA contractors interested in attending or submitting candidates for Safety Matters Awards, contact SMACNA Director of Market Sectors and Safety Mike McCullion ([mmccullion@smacna.org](mailto:mmccullion@smacna.org) / (703) 995-4027).

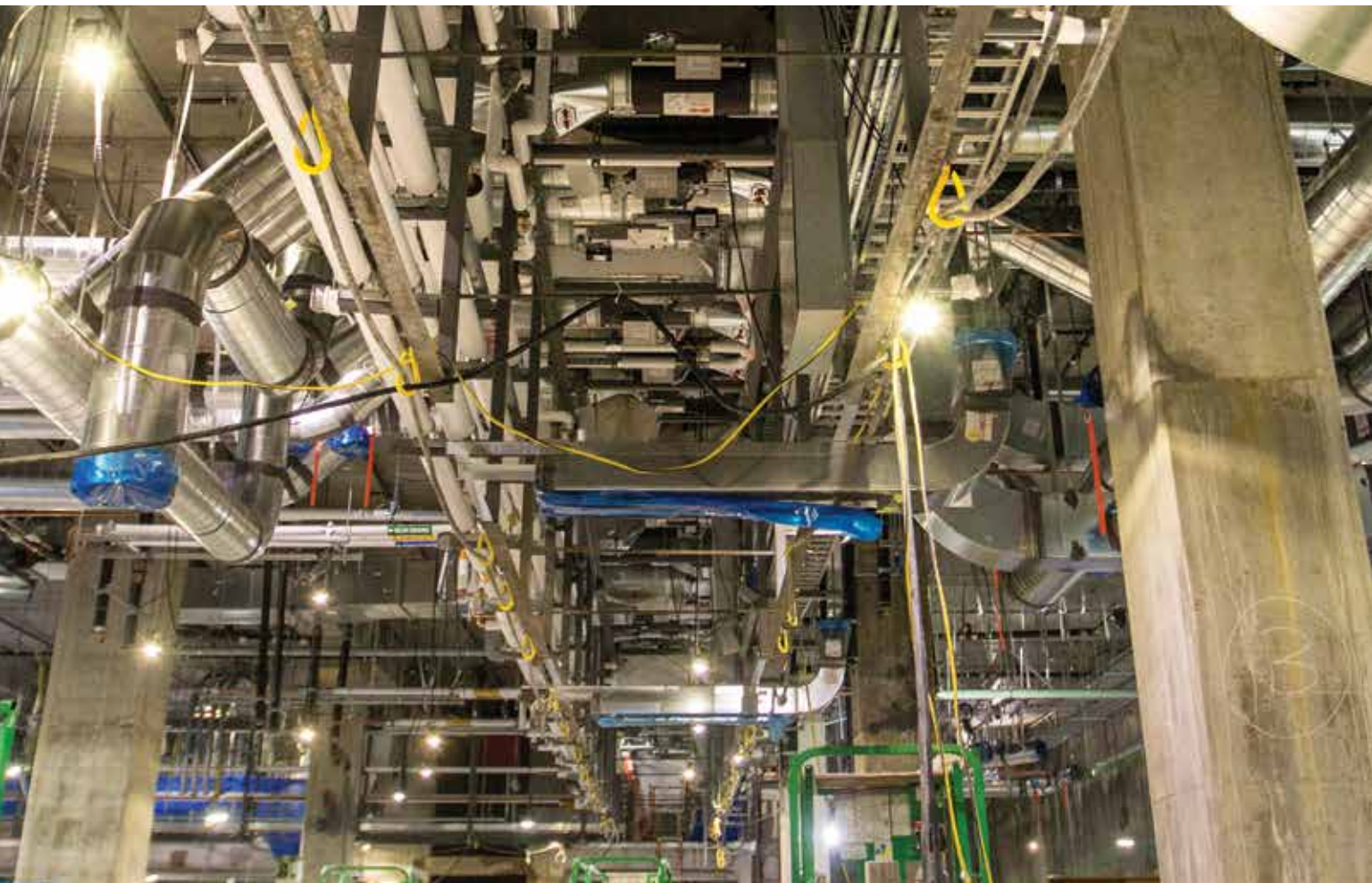
Learn more about the conference on the SMOHIT website. ■

## NOVEMBER MEMBERSHIP MEETING WITH DR. JEAN TWENGE

Mark your calendars for November 8, 2017, and join your fellow SMACNA-WW members at our membership meeting with guest speaker, Dr. Jean Twenge. Dr. Twenge will speak on the topic of iGen—how iGen and Millennials differ from previous generations and how to recruit iGens and Millennials. This meeting will be held at the Seatac Marriott, and begins at 4 p.m., followed by reception and dinner. Watch your email for more information. ■



# Project Spotlight: MacDonald-Miller





# University of Washington Embraces Multi-Trade Racks

By / Brian Hickory  
Photos courtesy of MacDonald-Miller

**What's truly integral** to the success of any initiative is leveraging MacDonald-Miller's skills in the context of collaboration – both internally and with external partners – and meticulous planning. On this project for the University of Washington, the design team embraced this approach on all levels.

A review of the final MEP model for the new lab space under construction at the University of Washington will show over 270,000 lb of duct and 50,000 liner feet of pipe packed into two interstitial spaces. Looking at the overhead plan view in the model, it looks like a tangled spaghetti mess, but in reality it's a fine-tuned machine that took tremendous effort by the project team to coordinate.

This is where the multi-trade rack (MTR) concept provided a major benefit for facility maintenance and overall project schedule. The success of MacDonald-Miller's multi-trade racks on past projects paved the way for its experienced project team to play a lead role in designing, modeling, fabricating, and installing the MTRs.

MTRs are essentially structural steel support hangers that allow components that would usually be installed by a number of trades to be pre-fabricated in a controlled environment for higher productivity and quality control. Multiple building systems are designed and fabricated in a single location where they are factory tested, loaded into MTRs, and sent to the site for installation. Configurations are modelled for space efficiency and logistics, and nearly eliminate waste generated during field installation.

MacDonald-Miller installed 58 multi-trade racks at the University of Washington, each approximately 6 feet wide by 14 feet in length. The racks accommodated sheet metal, plumbing, fitting, and electrical trades—the sheet metal trades were attached to the top of the trade rack, the plumbing and fitting trades were on one side of the house, and all electrical trades were on the other side of the rack.

The prime objective was to create for the building maintenance team easy access to the system's valves, VAVs, and electrical and control panels throughout the building. In addition, fabricating the MTRs in MacDonald-Miller's shop while



*Fabricating the MTRs in-shop while the structure of the building was being erected created an opportunity to shorten the construction schedule.*

the structure of the building was being erected created an opportunity to shorten the construction schedule. The MTRs were installed as the precast slabs were being set in place and eliminated hours of work in the field among multiple trades.

The multi-trade rack fabrication and installation timeline was just four months of an overall two-and-a-half-year construction timeline.

In many ways, MTRs act as the spine for the mechanical systems of the building as all the MEP trades branch off of them to different spaces in the building. This creates a challenge when design changes occur because one small change can affect multiple trades on every single rack. It took a significant team effort among all MEP contractors during BIM coordination and field installation to execute this successfully.

BIM coordination began during the design phase so the MTRs could be custom designed with the structure. A unique design feature of the racks was they had to be adjustable to accommodate the slope of the slab they hung from.



Another challenge was competing with an extremely congested interstitial space—the racks had to be designed for maintenance to have proper head clearance and ability to access to all valves, equipment, filters, and electrical panels without a ladder. The design team came up with an inverted u-shaped rack that allowed maintenance to walk inside the rack with easy access to all MEP trades on both sides and overhead.

“Making the multi-trade racks come together for this project has been a team effort from the beginning and seeing our



team execute the plan at such a high level is amazing,” said Rylan MacCay, shop and detailing manager for MacDonald-Miller. “The capability we have to detail and install down to 1/8” accuracy enabled us to take thousands of man-hours off a very congested jobsite and install our work at our shop, in conditions that are the safest and most productive for our employees and the other trades we work with.”

Without a doubt, the challenges MacDonald-Miller overcame on this project could not have been met without the experience and dedication from the wide range of professionals in the shop and field. With Skanska, MEP trades, and UW-CPD leading the way, the University of Washington will soon have a state-of-the-art-facility that will further advances in science and medicine and create a more centralized, efficient, and flexible facility to address current and future research needs. ■

## WE'RE ON YOUR TEAM!

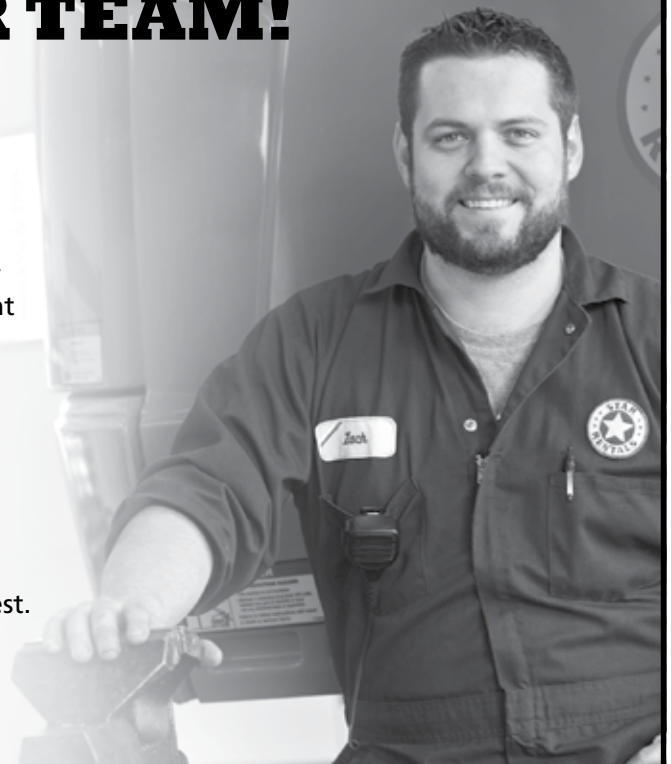
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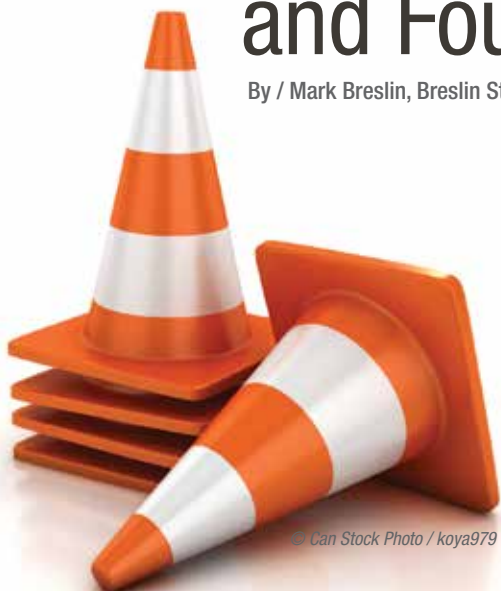
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# Safety as a Mirror of Engagement and Foundation for Success

By / Mark Breslin, Breslin Strategies, Inc.



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**What is safety?** A set of rules and practices? An organizational value? An individual responsibility? A set of metrics that indicate performance? Risk management and the costs and benefits? Probably all of those, but something a little less visible, I think. Safety is a reflection of the level of engagement your employees from top to bottom bring to the organization. It is, without question, the most common rallying cry that bonds and unites people in the construction workplace. But it is also the foundation upon which engagement is built. And the effort has some unusual roots based in the following case study.



**Many were left scratching their heads wondering if this leader was crazy—a broken company is starting with safety to rebuild itself?**

In 1987 Alcoa Aluminum was in trouble. It was an organization that was underperforming at every level internally and suffering in the marketplace. Productivity was poor. Quality was poor. Clients were not happy. And the answers that had been enacted to date were ineffective. Along came a leader with a new set of ideas based on the idea that if you could find a rallying point for everyone, that intersection of belief and buy-in could serve as a cornerstone for progress in all other areas. The CEO Paul O'Neil sifted through recommendations of the many senior level executives and came away headed in a totally different direction. Instead of focusing on manufacturing processes, quality initiatives, or productivity enhancement, he decided the starting place would be safety. When he announced this, the market punished him and major brokerages all went to a Sell recommendation.

He had a vision of unifying everyone. Something that everyone could believe in. Something everyone could get behind. Something that benefited everyone and the company. Many were left scratching their heads wondering if this leader was crazy—a broken company is starting with safety to rebuild itself? But he was on to something powerful. One year after he made that speech to investors, the company hit record profits. By the time he retired 13 years later the company had increased profits 500 per cent. (See his YouTube presentation on *Safety as the Keystone Habit*.)

It turns out, having that common vision and objective was exactly what the company needed. It was the thing that bonded labour and management. It was a clear indicator by the company that they cared about their employees' health and welfare. It was a brilliant, simple, and effective foundation upon which to build. And build they did.

Alcoa, in a relatively short time, built a culture of safety, but also a culture of unity and belief. Most importantly though, it build a culture of engagement. Engagement in the workplace is what leads to buy-in and commitment. It is the door you have to open for your employees to voluntarily walk through. It is the opportunity to participate and, more importantly, contribute. It is this that we are achieving at a remarkable pace in our industry today.

Many safety award winners are firms that maintain flawless records. Many of my clients will work millions of man-hours

without lost time incidents. These at face value are strong indicators of vigorous and effective safety programs and training. But what they really reflect, most of all, is the level of committed engagement evident in the workplace.

This lesson is vitally important as we continue our efforts to attract young people to our industry. Generation X and especially the Millennials are seeking engagement as a primary element of their workplace experience. Engagement, even more than money, is the currency of retention. It is the effort made by companies today to show they care and that they want and need input and participation by everyone in the workplace.



I think there are lessons to be learned and applied here. There are many other areas of jobsite focus in which we can use our “safety engagement” expertise for great dividends. But those are secondary to asking the questions over and over again: “How do we engage our people? How do we obtain their buy-in and commitment? How do we tap their talent and discretionary effort? How do we build off of safety, precisely how Alcoa did, to reap long-term rewards?”

Take a big picture look at safety, engagement, and culture. Think about how Alcoa bridged the safety focus to company performance. Ask yourself, “What are we doing that works amazing well and how can we leverage it in other areas of our business?” Engagement, once gained, is a powerful tool. Let's be visionary about how we build the industry of the future based on the hard lessons learned on our way to today's safety excellence. ■



## Project Spotlight: **Pike Place MarketFront** **Mechanical Contractor: Auburn Mechanical, Inc.**

By / Lisa Horn & Jessica Kirby  
Photos courtesy of Auburn Mechanical

**The iconic Seattle Pike Place Market** has been in various stages of planning and design for more than 40 years. The project came to life just as Seattle's waterfront is undergoing major transformation with the construction of an underground tunnel to replace the seismically-challenged viaduct and a major retrofit of the sea wall protecting Seattle's waterfront both under way.

The project occupies 210,000 total square feet of mixed-use space, targeting LEED Gold. The space configures 30,000





**The mechanical system contributes to the LEED Gold with its demand-controlled ventilation and 100% air economizer system, and high efficiency fans, pumps, and HHPs.**



Auburn's mechanical and electrical equipment cooling scope included dedicated exhaust systems that incorporate energy recovery in the public restrooms; and, a modified condenser water-based hydronic heat pump (HHP) HVAC system in the retail spaces.

“Unlike traditional HHP systems that use fixed outside air quantities, the MarketFront system incorporates full 100% outside air economizer capability,” said project manager for Auburn, Lisa Horn. “A demand-controlled ventilation strategy using CO2 sensors is utilized to minimize energy consumption and react to actual occupant ventilation needs.”

The condenser water system is used to temper incoming outside air using duct-mounted water coils, and all piping and ductwork is fully exposed in the occupied space, requiring special attention to layout and quality of installation.

“Building pressure relief is provided by a series of motorized louver/damper assemblies built into the storefront curtain walls,” said Horn. “The existing condenser water system was extended to include capacity for the new common and retail spaces.”

A boiler system provides domestic hot water for the low-income residential units and the main domestic waste system includes lead/lag circulation pumps to handle the variable capacity of the hot water in the new common and residential units.

“The storm water management system routes rainwater and surface water to an underground vault and is then pumped

square feet of open public space with 47 all-weather rooftop stalls for farmers and artists in the Pavilion and 12,000 square feet of commercial and retail space for artisans in what is known as Producers Hall. It also comprises 40 units of low income housing, a Market Commons space, 124,000 square feet or 300 stalls of underground parking, and public art installations

Auburn Mechanical, mechanical contractor serving the Puget Sound area and SMACNA-Western Washington member, was a proud participant in the Pike Place Market expansion in what is known as the Pike Place MarketFront. The company's scope of work involved central garage exhaust systems that comprise in-line exhaust fans with VFD controls that collect air from collector ducts routed along the west and north walls. Exhaust air is routed to a shaft and discharged to the west through wall louvers.





to the utilities storm water management system,” said Horn. “The expansion includes services for all new public restrooms, janitor’s services, and a vendor kitchen sink with fixture grease collection.”

New drainage piping systems support the custom-built surface and overhead planters throughout the open decks.

The mechanical system contributes to the LEED Gold with its demand-controlled ventilation and 100% air economizer system, and high efficiency fans, pumps, and HHPs.

As with any project, this one had its share of challenges, including installing louvers and garage exhaust ducts within a four-foot proximity to the Seattle Viaduct.

Coordination with all trades within a very tight product schedule,” was also a challenge, said Horn, given there were different sub-contractor teams on the commercial and residential elements. “System completion and final sign-offs of the residential building were 100% dependent upon installation of the house systems installed as part of our commercial scope of work,” said Horn.

The job site is sandwiched between Western Avenue and the Seattle Viaduct, plus the existing Pike Place Market maintained full functionality during construction. To successfully manage the space and time constraints, the team utilized LEAN construction principles (pull planning) and just-in-time deliveries.

Maintaining a minimum 13’ overhead clearance in as many areas as possible within the retail spaces also presented a challenge, said Horn. “The intent was for the exposed mechanical systems (ductwork, piping, plumbing, and HHP units) to enhance the buildings design and feel,” she said. “To achieve this criteria, Auburn Mechanical provided design assistance revising the system layout to accommodate the tenant improvement architect’s design criteria, and coordinated running mechanical ductwork and piping within the beam pockets to visually enhance to the architect’s design intent.”

The initial phases of the project were 3D modeled, with Auburn Mechanical taking lead on MEP coordination. Increasing the scope to include commercial space 150 occurred later in the project, and with minimal time allowed prior to substantial completion. “To meet schedule, the team determined the best plan would be to field-detail the mechanical systems and hold in-person on-site MEP coordination meetings,” said Horn.

The project’s underground garage and Level 1 Interior Spaces reached substantial completion in March 2017, and the commercial space exterior, Level 1 exterior plaza, breezeways, and Level 2 plaza reached substantial completion by the end of April. ■

## GETTING TO KNOW YOUR LEGISLATORS

The stereotype is that it is hard to get to know legislators. The reality is the individuals who serve as state senators and representatives are normal people with a variety of backgrounds and interests and a desire to make a difference. They arrive in Olympia with their own interests and the interests of their constituents at heart. The Legislature deals with a wide diversity of issues, so most legislators develop expertise in only selected areas dictated in part by committees they serve on and their interests. Legislative committees cover specific topics and SMACNA issues are covered in a few key committees. This article will highlight some of the legislators on two of the most important committees for contractors, the Senate and House labor committees.

The Senate Commerce, Labor & Sports Committee handles all issues related to employment such as workers compensation, unemployment, apprenticeships, wages, and leaves. It also handles many of the issues related to construction contracting. This is a profile of some of the committee members.

- *Senator Michael Baumgartner*, a Republican from the 6th legislative district in Spokane, is Chair of the Senate Commerce, Labor & Sports Committee. He has a background in international business and economics. He supports small business issues and promotes affordable higher education. He sponsored the bill that created the Department of Enterprise Services.
- The lead Democrat on the Committee is *Senator Karen Keiser* from the 33rd legislative district that includes Des Moines, SeaTac, and Burien. Senator Keiser currently is the lead on capital budget for the Democrats, the budget that funds state and local construction projects. She chaired the Senate Health Care Committee when the Democrats were in control and has been a long-time member of the labor committee. Senator Keiser sponsored the state's first Family Leave Act in 2007 and helped negotiate the updated Family Leave Act passed this year.
- The Vice-Chair of the Committee is *Senator John Braun*, a Republican from the 20th legislative district in south Thurston County and Lewis County. Senator Braun runs Braun Industries, a firm that builds emergency vehicles for jurisdictions across the U.S. He has served on the labor committee since joining the Senate in 2012, sponsoring many employment bills aimed at improving the business climate and employers' rights. Senator Braun is Chair of the Senate Ways & Means, the committee charged with writing the state budget and handling all revenue matters.
- *Senator Steve Conway* is a member of the Committee. He is a Democrat from the 29th district, covering south Tacoma and Spanaway. Senator Conway was the chair of the House labor committee for many years before moving to the Senate



By / Kathleen Collins,  
SMACNA Legislative Consultant

in 2011. He retired as a business agent from the commercial food workers. Over the years he has been supportive of union and employee rights and has worked on many health care issues.

- *Senator Lynda Wilson* is a Republican member of the Committee from the 17th district in east Vancouver. She won her Senate seat in 2016 after serving in the House for two years. She and her husband run DeWils Industries, a custom cabinetry business with international sales. Her priorities are increasing jobs and decreasing regulation on business. She is Chair of the Senate Higher Education Committee.
- *Senator Bob Hasegawa* is a Democrat member of the Committee from the 11th district that includes the southern half of SODO, Tukwila, and Beacon Hill. He worked for the Teamsters Union for 32 years as a truck driver and operating engineer. His passions in the legislative process are social justice, labor issues and small business. He recently ran for Seattle mayor, losing in a crowded primary.

The House Labor & Workforce Standards Committee works on all of the employment related issues, including workers compensation, unemployment, apprenticeships, wages, and leaves. The Committee used to handle some contracting issues but those are now in a different committee. This is a profile of some of the Committee members.

- *Representative Mike Sells*, a Democrat from the 38th district in Everett, chairs the House Labor & Workforce Standards Committee. Rep. Sells worked as a teacher for 30 years and was active in the teachers' union. His priorities are investing in training and workforce development, especially for emerging industries. He is the current Secretary-Treasurer for Snohomish County Labor Council.
- The lead Republican on the House Labor & Workforce Standards Committee is *Representative Matt Manweller*. He represents the 13th district, an area that runs from Kittitas to Lincoln County. Representative Manweller is a professor at Central Washington University where he teaches political science and constitutional law. His priorities are efficient government and less regulation for business.

*Continued on page 23*

## OPIOIDS, WORKERS' COMPENSATION, AND EMPLOYMENT CONCERNS

Nationwide, there are more than 1,000 emergency department visits and about 91 deaths per day related to prescription opioid use. Since 1999, prescription opioid sales and overdoses have quadrupled. From 2006–2016, there have been 7,595 opioid-related deaths of which 5,559 involved prescription opioids and 1,782 involved heroin. The high rates of opioid abuse and overdose have prompted state and federal action to address the issue.

### Workers' Compensation

The use and abuse of opioid prescriptions impacts industrial insurance claims directly. In 2013, opioids constituted 3% of medical costs on shorter claims and 15–20% of medical costs on longer claims. Injured workers who begin opioid medication due to an injury may develop an addiction even while taking the medication as prescribed. Chronic opioid use and addiction can cause or aggravate other health problems that could become claim-related. Chronic opioid use can also increase pain sensitivity and the likelihood of disability conviction, hampering return to work efforts.

In an industrial insurance context, it is often prudent to get ahead of any opioid-related issues. Sensitivity to red flags and working with the Department of Labor and Industries to limit or halt authorization of opioid medication can mitigate the risk chronic opioid use presents.

Specifically, the following red flags may suggest opioid-seeking behavior or dependence: history of substance abuse, increased opioid dosages, chronic pre-injury use, traveling long distances or to multiple doctors for prescriptions, doctor shopping, other habit-forming prescription medications, change in appearance or habits, or change in job performance.

In addressing actual or potential claim-related opioid issues, communication with the Department is key. The Department recently implemented procedures for chronic opioid therapy that lasts more than 12 weeks. These procedures require a clinically meaningful improvement in function related to the opioid therapy for continued authorization or an increased dosage. If treatment is authorized, it is reevaluated every 12 weeks thereafter. The Department encourages tapering down opioid dosages when discontinuing their use.

### Employment & Best Practices for Employers

Opioid and other employee drug use presents additional risks including absenteeism, poor production, interpersonal conflict, increased risk of injury or workplace accident, theft, after-effects of use, and illegal activity at the jobsite. Proactive employers with robust substance policies can limit these risks, and certain employers covered by the Drug-Free Workplace Act of 1988 may be required to act.



By / Karen Forner

Clear and robust workplace policies that are uniformly applied are among the most effective tools an employer has. Specifically, policies prohibiting substance consumption or intoxication on the job, and establishing consistent drug testing are effective. For example, many employers drug test all workers in the post-offer, pre-hire phase; upon reasonable suspicion of use or intoxication; post-accident; upon return to duty; at set periods; and/or, randomly. The exact parameters of a testing policy are flexible, but they should be clearly communicated to employees and consistently applied to all employees.

Although marijuana/cannabis has been legalized in Washington, there is no job protection written into the law for medical or recreational use. Employees should clearly be put on notice if cannabis is a prohibited substance in the workplace and that disciplinary action, including termination, could result if they test positive.

Additionally, some employers provide services such as an Employee Assistance Program (EAP) to provide short-term, confidential substance-related counseling as an employment benefit. Others work to educate workers about the health and productivity hazards associated with substance abuse or dependence in the broader context of a wellness program. No matter what actions an employer takes, it is helpful to reduce any stigma associated with substance dependence treatment.

An employer's substance use and abuse policies can increase liability exposure if they are applied inconsistently. Additionally, Washington recognizes addiction as a disability in certain instances when an individual is in recovery. Disparate treatment on the job or in hiring procedures could expose an employer to lawsuits. However, this does not mean intoxication or *use* of illegal drugs creates a protected class.

### Summary

Employment laws are changing at breakneck speed, and handbooks should have a recent legal review to ensure they are compliant with current laws. Proactive steps to prevent problematic opioid prescriptions on a workers' compensation

*Continued on page 23*

## DIFFUSER SOUND

The acoustical environment created by an HVAC system may or may not be a critical issue for the tenant or building owner, but understanding the sound data published by manufacturers is necessary to make an appropriate diffuser selection. Since diffusers are the system components in closest proximity to the occupants, they must be selected properly to produce suitable room sound levels.

The first thing to understand is the meaning of the NC numbers manufacturers publish. NC stands for noise criteria. This is a single number that assigns an overall room sound level based on relative loudness and the speech interference level of a given sound spectrum. NC charts plot sound frequency (Hz) versus sound pressure level (dB). Sound pressure is the sound level measured in a space after some amount of sound power has been absorbed by the environment.

Here are some sound levels for common applications as found in the ASHRAE Handbook of HVAC Applications:

- NC45 Gymnasiums
- NC40 Open Plan Offices/Lobby Areas
- NC35 Operating Rooms/ Courtrooms
- NC30 Hotel Rooms/Conference Rooms/Meeting Rooms
- NC25 Music Rooms/Places of Worship
- NC20 Concert and Recital Halls

NC15 is generally accepted to be total silence or the threshold of hearing for healthy adults. You might wonder why some manufacturers publish data less than NC15. The purpose of doing so is to allow multiple products that may be individually inaudible to be added together to predict a combined sound level.



By / Norm Grusnick, P. Eng.  
Commercial products manager, ECCO Supply

NC30 is typically the lowest sound level that can be achieved in most buildings without going to special lengths to soundproof the structure. NC30 is fairly easy to achieve in a suburban or rural setting, but much more difficult in urban or industrial environments. Spaces requiring sound levels less than NC30 include broadcast and recording studios as well as concert and opera halls.

Although it's been said that a noisy diffuser is a good diffuser because you can hear it working, that's not true. There are many issues that can cause diffuser noise to be audible including inlet condition, neck mounted dampers, and undersized or misapplied devices. Diffusers tend to make their highest sound levels in octave bands 4(500Hz), 5(1000Hz), and 6(2000Hz). These are known as the speech interference bands because they are the same frequencies we use when speaking. A noisy diffuser would therefore create a poor speaking environment and should be avoided.

The best way to avoid noisy diffusers is to select them for sound levels at least 10 NC points lower than that desired for the room sound level. This allows the diffusers to disappear into the background without contributing to the room sound level. As a general rule, diffusers should not be selected for sound levels greater than NC25 for any occupied spaces other than industrial applications. ■

Submit your news, story, or photo idea

### CONTRACTORS AND SUPPLIERS

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, Jessica Kirby, 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 [jessica.kirby@pointonemedia.com](mailto:jessica.kirby@pointonemedia.com) or 250.816.3671 and get the scoop.

## SUPPLIER RELATIONSHIPS

As contractors we understand how important it is to have a solid relationship with our customers. We see it as a win/win relationship. We get the repeat business at fair prices and they get good reliable service at fair prices. This relationship generates a lot of goodwill value in our business and those customers are the ones who are likely to give us the best referrals and give us opportunities to price their work and don't insist that we be the low bidder. The relationship is based on trust and on value. It increases the value of our business. It improves our closure rates on bids. Customers that are always complaining about price and who use different providers are of little value to our businesses. It costs a lot in time and money to service them; therefore, we tend to give them a lower level of service and priority and if we don't then they use up our energy and resources that should be going to our best customers. Our "A" customers should the best treatment because they are so important to the sustainability of our business. They are our lifeline.

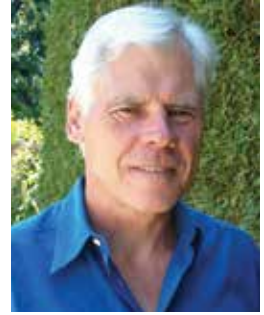
How about your relationship with your suppliers? Is that based on trust and value or just on price?

It is equally important to have a solid relationship with at least one major supplier. As contractors, we face a myriad of decisions that require a broad base of expertise. Very few contractors have the resources within their company to provide that expertise. It is critical for the success of your business to build alliances not only with your customers but with suppliers, subcontractors, and employees. Your business model should be based on having all these alliances in place.

There are numerous elements that make up a successful relationship with a supplier. You should review this and ensure that you are getting all those benefits and taking advantage of them.

Obviously getting good prices is critical. You need to stay competitive. But don't sacrifice the other elements of the relationship over a few pricing issues.

Technical support and technical training are critical so your sales staff, project managers, and technicians can service your customers effectively. Are you getting this support from your supplier? Is your supplier offering sales training or customer service training? Are you sending your team to all the training offered? Insulation is offered in a very wide market segment from residential and commercial to industrial and institutional. Also the products are used in very diverse climates Parts of British Columbia rarely go much below freezing while most areas of the country have much greater extremes of temperature. The right technical support can ensure that the customer gets the best products to suit his situation with the lowest life-cycle costs.



By / Ron Coleman

Your customers need choices. They can't all afford the more expensive systems with all the bells and whistles; many need less expensive options. Can you, in concert with your supplier, provide these alternatives to meet your customers' needs? The supplier with the widest range of products and best technical support is going to be the easiest to deal with as you don't have to shop around for products or knowledge.

Incentives: What incentives do suppliers offer for you to use them as your preferred provider? Do they extend good credit terms? Do you get special discounts if you buy in bulk? Do you get priority on products that are in short supply? Do they have a co-op advertising program, and if so, do you take maximum advantage of it?

Just like you wouldn't want your customers picking you because you are the cheapest option, don't you pick your suppliers and other support people on price alone. There is a difference between value and price.

Your customers, whether residential, commercial, institutional, or industrial, all want the same four outcomes:

- They want products and services that meet their needs.
- They want work completed in a timely manner.
- They want to stay within budget.
- They want to develop an ongoing relationship with their providers to ensure they get good after-sales service and guidance for future projects.

It is meeting these four outcomes that will keep them coming back to you. And you want the same from your providers.

No one contractor can have all the elements in-house to achieve these four outcomes. Building up your team of employees, sub-contractors, and key suppliers that focus on your needs allows you to focus on your customers' needs and gives you the opportunity to win and retain customers. The right relationship with the right supplier can reduce your stress and increase your profits. Spend time building and maintaining that relationship.

Make a list of all elements that are important to you and review with your suppliers. Pick the supplier that best meets

*Continued on page 23*

LEGISLATIVE UPDATES

Continued from page 19

- The Vice-Chair of the Committee is *Representative Mia Gregerson*. She is a Democrat from the 33rd district that includes Des Moines, SeaTac, and Burien. Prior to joining the Legislature, she served on the SeaTac City Council. Representative Gregerson wants to create job opportunities for minorities and women, including construction jobs.
- *Representative Gina McCabe* is a Republican on the Committee from the 14th district. Her district covers Yakima County down to the Columbia River. Representative McCabe runs several small businesses in Goldendale, including a hotel and a performing arts studio. Her priorities include less business regulation and job creation.

If you want to learn more about these legislators you can go to [www.leg.wa.gov](http://www.leg.wa.gov). The House and Senate have a list of all their members, including backgrounds and interests, and the committees they serve on. We will feature more legislators in future issues.

*If you are interested in identifying the legislators for your business location or home residence, go to “Find Your District” on the legislative web site, [www.leg.wa.gov](http://www.leg.wa.gov).*

*SMACNA can assist you in setting up a meeting with your legislators, if you would like. ■*

IT'S THE LAW

Continued from page 20

claim can help limit costs and improve return to work timelines and outcomes. The best offense is a good defense. Smart hiring practices, a robust and up-to-date employee handbook, and consistent application of workplace policies with sensitivity to possible disabilities can limit exposure to liability. ■

*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 10 years and the Program Advisor for the Workers' Compensation Sren 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.*

CONTRACTORS 101

Continued from page 22

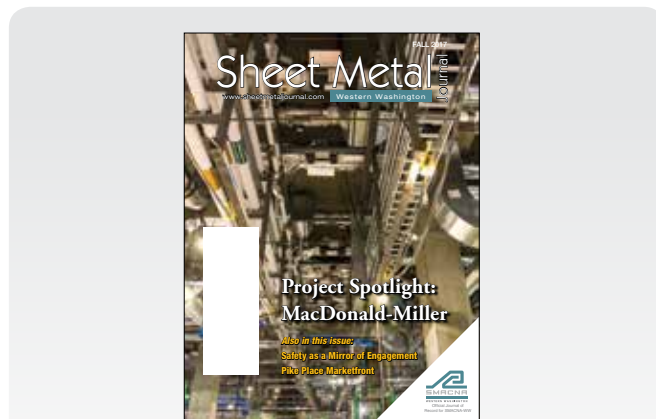
your overall needs—grade them on a points system to ensure you are getting the best outcomes for your business.

Here is a sample checklist you could use. Add any elements that are important to you.

Supplier matrix

Score each 1 to 5, 5 being best

Range of products	
Promptness of service	
Technical support	
Technical training	
Other training	
Availability of products	
Fill rate of orders	
Timeliness of filling orders	
Co-op advertising	
Turnaround time in their facility	
Issues over back orders	
Accuracy rate of orders filled	



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