

FALL 2019

Sheet Metal Journal

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British Columbia

**Myths vs.
Realities
of a Sheet
Metal Career**

**SMWTC 25th
and SMITB 50th
Anniversaries**

Generation Gap



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Official Journal of
Record for SMACNA-BC



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Formed in 1969, the British Columbia Sheet Metal Association (SMACNA-BC) was the first international chapter of the Sheet Metal & Air-conditioning Contractors National Association (SMACNA). Founded in 1934, SMACNA traces its history to the National Association of Sheet Metal Contractors established in 1910, and has 2,300 members worldwide.

SMACNA-BC is a member-driven association representing unionized sheet metal contractors in the Mainland of BC, and suppliers to our industry. It promotes the growth and stability of the members and industry.

OUR MANDATE

- To improve the financial stability and business conditions of the sheet metal industry, and to develop and promote methods to improve managerial proficiency
- To improve quality, efficiency and productivity of this industry, and to implement high standards of work
- To establish and maintain high ethical standards of conduct between members of the Association, and between members and owners, architects, engineers, other contractors, and the public
- To study and help in the development and enforcement of governmental codes and regulations, and such legislation as may be necessary for the best interest of the public and the sheet metal industry
- To promote harmony in labour relations
- To exchange technical, professional, and educational information with other contractor associations in the sheet metal industry and its allied trades in Canada and other countries
- To affiliate as a Chapter with the Sheet Metal & Air-conditioning Contractors National Association, Inc.



[BC Sheet Metal Association \(SMACNA-BC\)](#)

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FALL 2019

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LIKE TRUE CANADIANS

In a thrilling drama of showpersonship and trash-talking, Canada has survived another federal election. On the lips of every candidate this past October were several typically Canadian topics: 1. the energy sector, 2. climate change, 3. infrastructure, and 4. all the skeletons waving from the other candidates' closets. Yet, voters plowed through the rhetoric and cast their votes with an also typically-Canadian ferocity at around 64% eligible voter turnout, down three percent from last time. Despite stern warnings from the international community that Canada must take a strong stand on at least the first three of these issues, as a country we came together in our favourite place: the middle.

We proved we are aware of and in support of mitigating climate change, but not so much to vote outside the main party lines. We waved banners for economic development and supporting the energy sector but not enough to change the government completely. We showed support for infrastructure development and addressing the deficit, but also that any of the more-or-less-identical platforms on these subjects would do. And when it was all over we were left with a government that campaigns to the left and makes policies to the right, claiming the centrists' throne in a country that shines internationally as peacekeepers who balance the congeniality of a treehugger with the brute resilience of a hockey centreman. We were left, above all else, true Canadians.

This means several great things for construction moving forward. It likely means a growing deficit that will spur growth in housing and infrastructure. It means the future of the energy sector as we know it might be a crapshoot for now, but this opens up intriguing possibilities about what might come next. It means anything you can do to green your projects, businesses, and homes will be a step forward for the entire global community, and will probably make or at least save you some dough. And most importantly, it means the stage for those willing to stand out with new ideas, fresh technology, and game-changing innovation is still clear and taking auditions on an on-going basis. What will you do to step forward into the limelight?

This issue of *Sheet Metal Journal* reviews another fabulous year at the SMACNA-BC Annual Golf Classic. Anyone who questions the legitimacy of golfing as a business activity need only look at the smiling faces (and shenanigans) in the photos beginning on page 6 to see there is no better way to connect with others than in the spirit of relaxation and friendly competition. Congratulations to this year's raffle and skill winners, and I hope to see you at next year's event.

Did you know that only about a quarter of young people thinking about their life-long working options are well-



By / Jessica Kirby
Editor, Sheet Metal Journal

informed about a career in sheet metal? The rest are at the mercy of misinformation and agenda-driven advice, but our syndicated writer from *Partners in Progress* (pinp.org) sets the record straight in her article about Myths and Realities of a Sheet Metal Career on page 10.

The Sheet Metal Worker's Training Centre and the Sheet Metal Industry Training Board celebrated monumental anniversaries in September, coinciding with the SMWTC's launch of the UTIP program, which brings cutting edge training technology to the Centre. Read more on page 14 about how the event paid tribute to the past, present, and future of sheet metal.

And finally, we take a look at how industry can build stronger intergenerational partnerships and leverage the best of all worlds. Check out page 18 to see how experience, know-how, and an emotionally driven workforce can create great things.

Though you wouldn't know if from looking outside, the end of the year is near. This is the last issue of *Sheet Metal Journal-BC* you will read in 2019, and I want to acknowledge the support we continue to receive from our advertisers, the sources who inform our articles, partnerships with other publications, and last but far from least, SMACNA-BC. These industry and community relationships continue to inspire our success and forward movement, and we appreciate each and every person who contributes.

Before the end of November, I will be asking our friends at SMACNA-BC to distribute the link to our third annual construction outlook survey for the sheet metal industry. The survey takes five minutes to complete (less if you don't add comments), and it is the only local and specialized means by which we garner information about your interests, challenges, and successes. The results are tallied, and I report on them in the winter issue, providing readers with a sense of what contractors are thinking as we move into 2020. Your answers also form the basis of our editorial calendar as I strive to cover the issues most important to you. Why bother, you ask? Because it is the fair, right, and Canadian thing to do.

As the season changes and the holidays descend, we at Point One Media wish you a warm and happy season with much love, happiness, and prosperity moving into the new year. ■

SMACNA-BC'S 36TH ANNUAL GOLF CLASSIC

As usual, the SMACNA-BC's Annual Golf Classic proved to be a fantastic success. It is always a great day for the industry to get together, share a game, network, and enjoy each other's company on the course. The weather that day was mostly dry, and the feedback was that everyone had a great time. Contestants enjoyed 18 holes, a Beat the Pro contest, the always-favoured airgun shot, and several raffles. Check out our list of lucky winners below.

Thank you to all of the sponsors who help make this an important and memorable event. We couldn't do it without you. Each year we choose a different community association or non-profit to support and this year funds raised went to an incredibly worthy cause—the Parkinson's Society British Columbia.

Parkinson Society BC was established 50 years ago and relies entirely on donations from individuals, members, corporations, foundations, and volunteers.

Its mission is to ensure every person touched by Parkinson's knows they are not alone in their journey, and to offer support,

reliable information, and fundraising for programs and research. Learn more at parkinson.bc.ca.

Through many efforts \$4,000 was raised on the course. SMACNA-BC matches all donations, which means \$8,000 will go to the charity. Thanks to everyone who supported and contributed to this important cause and the organization that helps so many.

Check out photos from the event in the following pages, or email the office at smacnabc@smacna-bc.org for a link to the full set. Mark your calendars for next year! ■



By / Bruce Sychuk, Executive Director, SMACNA-BC

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**SMACNA-BC Annual Golf Classic
Skill and Raffle Prize Winners**

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Dave Brown, Vets Sheet Metal Ltd.
Jeff Dupley, Vets Sheet Metal Ltd.
Rick Godkin, Vets Sheet Metal Ltd.
Leo Huot, Vets Sheet Metal Ltd.

Men's Low Gross

Mark Halvorsen, Viaduct Sheet Metal Ltd.

Ladies Low Gross

Debbie Halvorsen, Viaduct Sheet Metal Ltd.

Men's Low Net

Wayne Davidson, guest, Ridge Sheet Metal Co.

Ladies Low Net

Tasha Ceraldi, guest, Viaduct Sheet Metal Ltd.

KP/Honey Pot Winners

Rick Gordon, Vets Sheet Metal Ltd.
Eric Staniscia, Austin Metal Fabricators LP
Mark Kuelle, Austin Metal Fabricators LP
Jeff Dupley, Vets Sheet Metal Ltd.

50/50

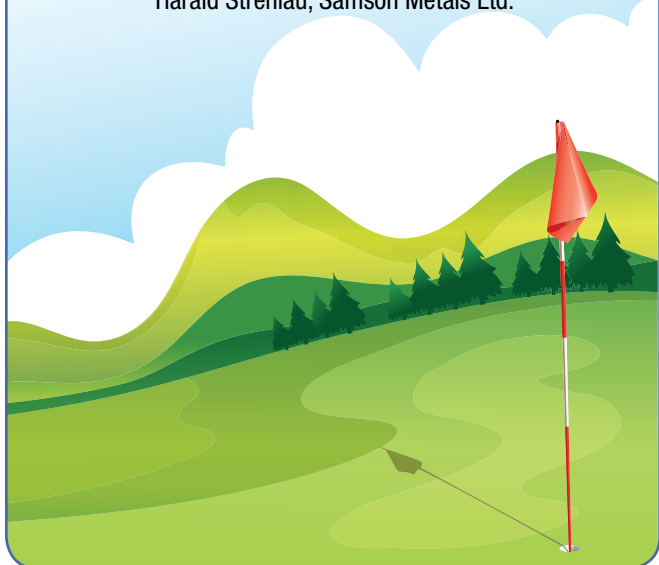
Justin Van Tongeren, guest, Crossroads C&I

Crossroads C&I / Johns Manville – Beat the Pro Raffle

Jeff Dupley, Vets Sheet Metal Ltd.
Craig Benson, guest, Ridge Sheet Metal Co.

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British Columbia Sheet Metal Association (SMACNA-BC)

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The unmatched technical and managerial expertise of SMACNA-BC Contractors is enhanced by the talent and skills of the workforce they employ. SMACNA-BC Contractors employ only Red Seal Certified Sheet Metal Journeymen and Registered Apprentices.

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MYTHS vs. REALITIES of a Sheet Metal Career

By Sheralyn Belyeu

A RECENT SURVEY FOUND that just over a quarter of young people understand that graduates leave trade school with less debt than they would incur in traditional colleges. Only 11% realize that a trade school education can lead to high paying jobs, and only 16% know that trade schools can give job security.

These common misunderstandings cost young people millions of dollars in unnecessary debt and missed opportunities every single year. But SMART and SMACNA are working together to spread the truth about sheet metal careers so they can build the work force they need for a strong future.

1 Myth One: All college level classes are expensive.

Reality: “College is great,” says Kris Harmon, business agent for Local 36 in central Missouri. “But traditional colleges require students to pay while they aren’t working. In a JATC, students are paid for their labour while they gain valuable skills.”

Tiffany Crawford learned about education costs the hard way. She started college right out of high school with a full-ride

scholarship and dreams of becoming a writer. When Crawford’s scholarship ended, she paid for a year out-of-pocket, but quickly realized that continuing on a traditional path was too expensive.

“Four years of college might cost \$100,000, and many people can’t find work after they graduate,” she says. She decided against taking on student debt and dropped out of school.

A few years later, she is in demand as a sheet metal apprentice with a promising career and a retirement plan. “I wanted something mentally challenging,” she says. “Now I get paid to learn while I earn a great wage.” Crawford receives college credit for her classes at Local 28’s Nicholas Maldarelli Training Center in New York. “All of the CUNY and SUNY colleges accept our credits,” she says. “I may go back to school someday, but next time I’ll study something architectural.”

Crawford’s classes follow industry standards published by SMACNA and SMART. These demanding standards include all the skills she needs to work for an Architectural Metal Expertise contractor. “We draft blueprints, design equipment, fabricate

in the shop, install, and weld,” Crawford says. “Sheet metal specialists do the TAB work on HVAC systems to ensure high quality results. With so many different aspects of the industry, you can find something you enjoy.”

2 Myth Two: There aren't many high-paying jobs for young people.

Reality: Trade school graduates have a four percent higher employment rate than four-year graduates. “As far as overall construction, there’s a shortage of skilled craftspersons,” says Harmon. “I get a couple of calls a week from places like Georgia and Florida. HVAC expertise is in short supply, so experienced craftspersons can earn six figure incomes.”

The demand is international. “We’re in the middle of a construction boom,” says George Colussi, sheet metal and HVAC manager for Trade Mark Industrial Multi-Trade Contractors of Ontario. “And we have to replace valuable employees who are retiring. We need more apprentices.”

Colussi’s situation is common. Between a shrinking labor force and a misguided habit of steering all teens to four-year colleges, employers have been challenged to find enough skilled workers. As experienced craftspersons move toward retirement, employers are eager to hire young people with the skills to deliver high quality results.

• **“We’re in the middle of a construction boom,” says George Colussi, sheet metal and HVAC manager for Trade Mark Industrial Multi-Trade Contractors of Ontario.**
• **“We need more apprentices.”**
•

3 Myth Three: Only college graduates have good retirement plans.

Reality: The urgent need for skilled labour translates into financial security for young people. “Students are always surprised to learn about our retirement plan,” says Jacob Crismon, director of marketing for Local 36. “Here in Central Missouri, members who have 30 years of credit can retire at age 55 with full pension benefits.”

Various locals have different retirement ages, but they all offer exciting retirement options. “I have a great retirement plan with two separate pensions,” Crawford says. “Local 28 allows me to choose how to invest my pension and provides training in how to invest for my future. Some jobs pay well, but don’t include financial counselling to help people manage money. Professional athletes have amazing incomes, but they often end up poor. Local 28 has the resources and people to help me protect my money. My future is secure.”

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4 Myth Four: All insurance plans are equal.

Reality: Most young people don't think about insurance until they need it. By then, they might not be able to find policies that cover their actual expenses. "Two of the last three people who came to talk to me about insurance already have babies on the way," says Crismon. Fortunately, Local 36 is prepared to support members with complete medical coverage. "We buy insurance in a large group with several hundred other locals. By purchasing together, we lower our insurance costs so we can offer affordable medical and dental coverage for the whole family."

5 Myth Five: Math is hard.

Reality: "The math we use in sheet metal is very different from what most apprentices remember from high school," Harmon says. "We use geometry, and we put it to work directly in the field. It's a completely new experience when you use the math to build something."

ITI-certified instructors use proven teaching techniques to help students succeed. "Our apprentices are in the JATC classroom in the morning, and in the afternoon they move to the workshop to lay a project out," explains Jacob Crismon, Local 36 director of marketing. Apprentices learn from practical experience how important correct measurements are. "You can't stretch the metal back if you cut it wrong," he says.

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Like many students, Crawford prefers math she can apply. “To my surprise, the math is what I’ve enjoyed most,” Crawford says. “Math was not my strongest subject in school—I was actually an English major. But now I’m loving it. I can see how the math problems translate into building things. It’s very hands-on, and there’s plenty of help to understand.”

The specialized training isn’t just interesting for students; it also leads to better job security. Trade school graduates have a 4% higher employment rate than graduates of four-year programs, and are 21% more likely to find work in their desired fields.

6 Myth Six: Sheet metal work is only for men.

Reality: “The myth that only men succeed in this field is just that... a myth,” says Barbie Simpson, owner and president of Simpson Sheet Metal in Santa Rosa, California. “In fact, their ability to attend to details as needed with architectural sheet metal is great. As for me and my company, we are all about women in the business. I have one young lady who works in the field and would welcome any others who come my way.”

In New York, Crawford also finds that women are welcome in sheet metal. “I’d guess that my co-workers are about 98% male,” says Crawford. “That took some getting used to. Often I am the only woman on a worksite, but people treat me with respect.”

The Payoff

Local 36 has worked for years to spread the truth about sheet metal careers in Missouri, and Harmon is seeing the results. “Local high school counselors used to push college for everyone,” he says. “Now they talk to kids about other career options, including HVAC. They teach our classes on high school campuses and point kids to the JATCs.”

As SMACNA and SMART continue share the facts about sheet metal with the public, they will open doors of opportunity for future apprentices and for the industry as a whole. ■



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THE TRADES ARE EVOLVING.

By Jessica Kirby

Technology is slowly infiltrating this previously impervious industry, hinged on tradition and a “not broken, don’t fix it” ideology, and smart contractors and training centres are embracing the change. But it’s not just an eye to the future that will keep the sheet metal industry successful, says Jud Martell, training co-ordinator for the Sheet Metal Workers Training Centre (SMWTC). It will be a birdseye view of what is coming, what is current, and what has gone before that will ensure a solid foundation moving forward.

The SMWTC and the Sheet Metal Industry Training Board (SMITB) celebrated 25 and 50 year anniversaries, respectively, in September at an event held at the SMWTC. The celebration represented a visit through history, the present, and into the future and tied in the Centre’s newly announced Union Training and Innovation Program (UTIP).

UTIP is a federal cost-sharing initiative developed to increase investment in training equipment and materials for higher quality training, leading to a more skilled and productive trade’s workforce and improved participation and success of key groups in trades training and careers including women, Indigenous People, and newcomers to Canada.

For the SMWTC, UTIP means a number of goals and objectives (see sidebar) that will improve educational and recruitment

opportunities. The program officially launched this summer with a presentation by Ken Hardie, Port-Kells MP, and a ribbon cutting ceremony was held at the anniversary, which also showcased the program’s new technologies.

The anniversary was organized around Passport Through Time activities that led attendees through the facility to visit eight stations presenting some aspect of the theme—the Past was represented by historical displays, the Present focused on shop curriculum and project showcases, and visitors glanced into the Future with opportunities to demo new technology and equipment.

Station #1, located in the office, covered the history of the centre and many of the people and projects that gave it its strong foundation. Guests milled out at this station looking to find themselves and people they know in photographic displays.

Station #2, set up at registration, featured boards outlining all of the connections that brought together and have continued to build the fabric of the SMWTC and SMITB—trustees, staff, instructors, and various supporters.

In the shop area, attendees found Station #3, which was the competition and project showcase and highlighted specialty

training. Close by in the welding shop was Station #4, which was a close-up look at the SMWTC's new welding equipment.

Up on the mezzanine at Station #5, Jake LeBlanc introduced visitors to the level three architectural sheet metal area where students learn the sheet metal and architectural curriculum.

The first station to showcase some of the UTIP technology was #6 where students learn to operate an aerial platform in a virtual environment. At Station #7 instructor Bob Pascuzzi went over some of the classroom and drafting theory, and at the final station, #8, visitors could see how students learn welding in an augmented reality simulation.

Guests had pass cards initialed for completing the activity or hearing the presentation at each station, and submitted the full card into a draw for some great door prizes. Congratulations to prize winners Donna Henderson from the Industry Training Authority and Martin Rachel from Crosstown Metal.

"I thought this was a great event," says Dan Burroughs, retired sheet metal worker and former business agent for Local 280. "Everyone did a great job of presenting their station. I really enjoyed the virtual reality training, and I just loved looking at all the pictures—it brought back so many memories. Jud and team, well done."

Into the Future

Martell says the UTIP project is a prime example of how the SMWTC is defining itself as a place where innovation is embraced and students are supported in being prepared for the future.

"We are trying to look into the future and recognize how things will be done differently in the world moving forward," Martell says. "This technology is a part of that. I can imagine sitting around in 20 years and being surprised about what we didn't see coming. Maybe by that time you will go to work in a clean room with clean tools where you walk in and fire up your augmented space or your virtual tools to drive the robots that do the actual work," he says.

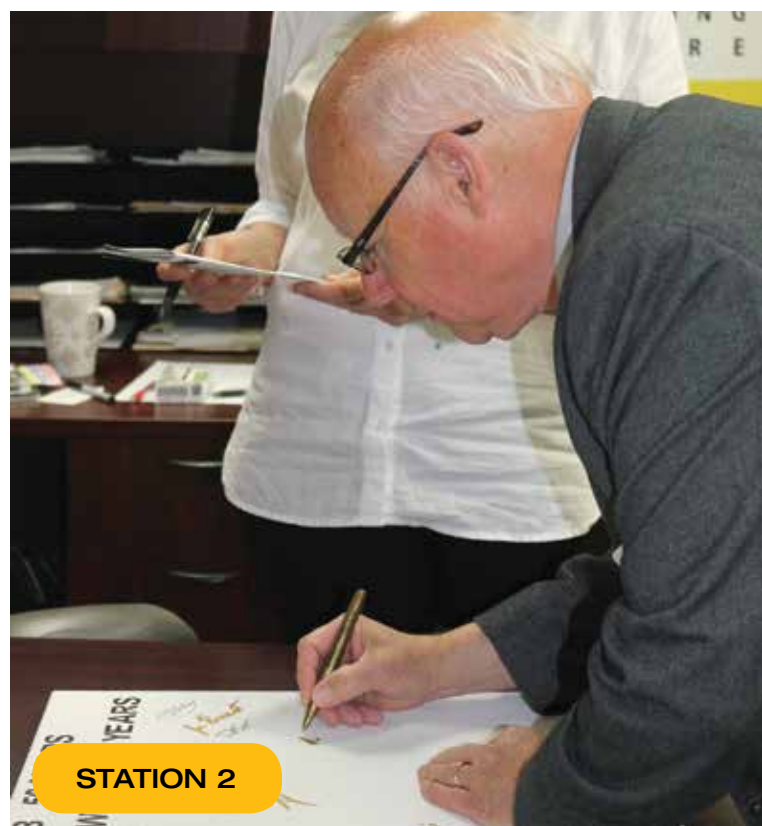
Virtual and augmented reality are different, Martell explains, because in the first the user is having an immersive experience in a completely contrived environment, and in an augmented reality the learning components are added to actual reality.

"When you look through the screen you can see the world," says Martell of augmented reality. "When you turn on the machine, it adds the welding points, equipment, and materials to create welding situations in your real world."

Knowing and understanding the technology is a key part of staying ahead of changes in the future, he adds. "Ours has traditionally been a reactive industry, but we've realized that



STATION 1



STATION 2



STATION 3



STATION 4

if we don't think about new technologies or solutions until the contractors mention it, by then someone else is probably already doing it. We need to understand that so we don't just do work for today, but so we also have the resilience and critical thinking to apply skills to whatever is coming next."

Looking back to the initial development of the SMWTC, Martell points out it was considered crazy talk to put one trade into its own training centre, even though it promised direct communication with and training of individuals in that trade.

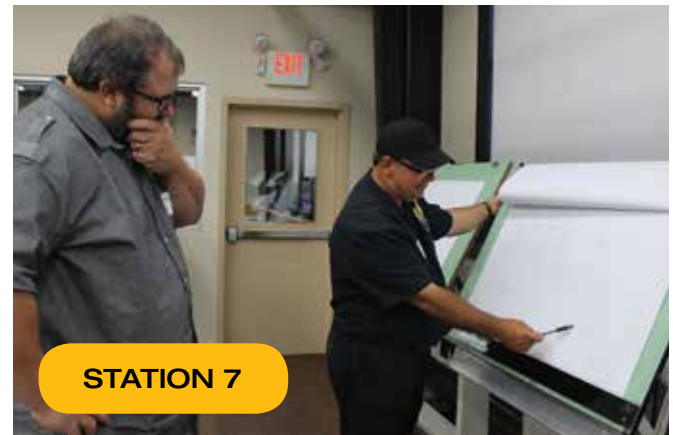
"What are we doing today that the people doing the 75 year anniversary will tell stories about?" he adds. "What a great feeling at the end of this event to see that all the great work done by people who came before us has been recognized and not taken for granted."

Creating and maintaining partnerships and community will be an important part of keeping the momentum going, and, speaking of technology, social media serves an important role in doing that, he adds.

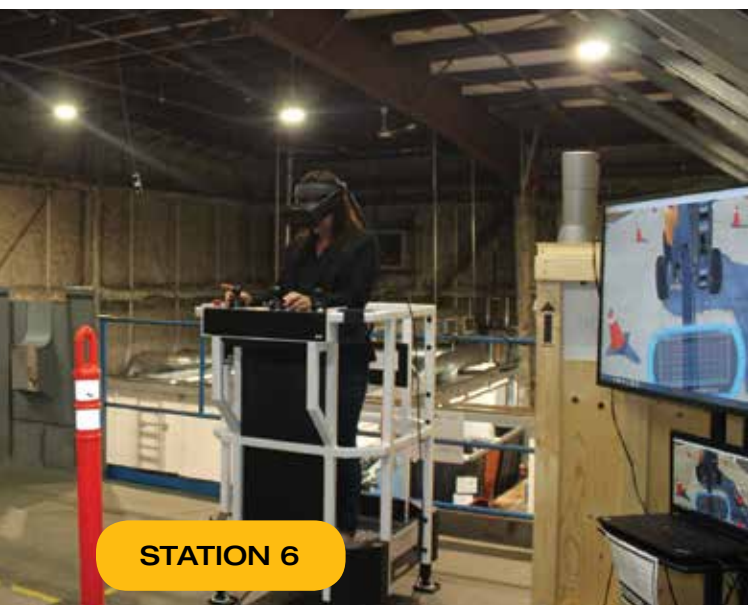
"As an industry we are good at the person-to-person interaction, but as people who are looking to expand our networks and see what is going on outside our own doors it pays to be a part of a wider social presence. You might see something amazing going on in Arizona that is worth a share because they are still a partner and still part of our community." ■



STATION 5



STATION 7



STATION 6



STATION 8

TECHNOLOGY AND AN INCLUSIVE WORKFORCE: FORGING OUR FUTURE SHEET METAL INDUSTRY WITH UTIP

The Technology and an Inclusive Workforce: Forging our Future Sheet Metal Industry Project has been developed to improve the success of sheet metal workers using new equipment and to address emerging technology trends in the sheet metal industry.

Funded through the Union Training and Innovation Program (UTIP), this federal cost-sharing initiative was developed to increase investment in training equipment and materials for higher quality training, leading to a more skilled and productive trades workforce.

UTIP is also intended to improve the participation and success of key groups in trades training and careers including women, Indigenous People, and newcomers to Canada.

Project Objectives:

1. Purchase new equipment and technology to prepare a skilled workforce
2. Increase representation of key groups to build an inclusive workforce
3. Build broad-based partnerships to influence change in the sheet metal industry
4. Assessment and reporting on results of the project

Project Goals:

★ GOAL #1:

SMWTCS students (apprentices and journeys) will have access to and benefit from training on the new equipment leading to a more technologically skilled workforce. The following equipment and technology will be purchased:

- Mobile elevated work platform simulator
- New welding machines
- Virtual reality/augmented welding technology
- Fan service equipment for new a specialty training course

★ GOAL #2

SMITB will develop recruitment strategies to build a more diverse and inclusive workforce by targeting key groups including women, Indigenous People, and newcomers to Canada. SMITB will build off their expanded partnerships to influence change in the sheet metal industry.

★ GOAL #3

SMITB, working in collaboration with the project evaluation consultant, will develop data collection systems and resources to support the assessment and reporting on results of the project.

UTIP Partners include:

SMACNA-BC
WorkBC
Industry Training Institute
SMART
VanCity
Downtown Custom Metal Works Ltd.
Constriction Foundation of BC
BC Building Trades
ITA (Industry Training Authority)
PICS (Progressive Intercultural Community Services Society)



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BRIDGING

the Generation Gap

Can experience, know-how, technology, and an emotionally-driven workforce build great things together?

Absolutely.

By / Jessica Kirby

The question on everyone's mind in the age of digital technology, where even the construction industry is feeling pressure to adapt, is how do we bridge the gap between the experienced generation and new comers to the industry? What can we say, do, and implement to ensure traditional knowledge finds a new home among the next generation, and that contemporary workplaces don't squash innovation in the name of "the way things were"? The answer is complex.

Mark Breslin is an author, speaker, and CEO specializing in workplace success across all levels of business. Having spoken to more than 400,000 people over his career, he has seen his share of workplace disconnect, including that between generations.

He points out key benefits young people bring to the construction trades. "They have the ability to quickly adapt to the new technology," Breslin says. "They offer low ego and high emotional intelligence, and they are innovators. They aren't intuitively 'back in the day' thinkers."

But what about the 'back in the day' thinkers and the value they bring to the workplace? In an article for *Construction Business Owner*, author John Roshala says the longest-serving employees are baby boomers who "display specialized skill sets and dedication to management and professionalism." They may also be slower to adapt to new technology, which brings us to an important point: how do we make the best of

all that these generations bring to the trade? There are a few ways.

Create harmonious teams or mentoring relationships, which means matching a variety of skills to create a completely functional working entity. Leaders should be creating teams that include a cross-section of generational knowledge and technique. Ignore age and focus on experience to avoid overt stereotypes. Make sure members of the more experienced workforce can bring knowledge to those just starting out, and set up opportunities for new recruits to share their passion for creativity and innovation. When people with various perspectives and approaches see they can work together and complement one another's strengths, great things can happen.

Keep everyone connected and engaged. There is a gross overgeneralization that millennials need 24/7 coaching and positive feedback, but the reality is many people of all ages and experience levels appreciate guidance, feedback, and general acknowledgement. It is a leader's job to determine who needs a text every time a task is finished and who needs a few words every two weeks, but regardless of these differences making feedback part of the workplace culture evens the playing field and ensures no one is singled out for enjoying it.

Foster innovation in your teams. Like it or not, technology is here to stay. Bridge the gap among employees with varying feelings about this inevitability by tasking them with

researching—together—the best software for the job. There is no denying ownership promotes pride, and finding a cross-generational team to recommend a way forward for the team will also foster adoption and buy-in.

Recruiting young people will take some of the innovation company owners would like to see in their employees. Watch for soft skills, attitude, and behavior. There is very little by way of practical skills that a student or apprentice can not learn, but what about work ethic? Responsibility? Accountability? Assuming these are characteristics an employer is seeking in his or her employees, these are the characteristics that should be highlighted when hiring. Focusing less on what new hires can do and more on who they are can help eliminate some of the intergenerational stresses that arise.

Breslin says a company's online presence matters in recruitment like it never has before. "Tell your story effectively or suffer," he says. "Attempt to become a Best Workplace winner, and have existing young people in the company participate in recruitment efforts."

Inc.com, for instance, collects feedback on workplace satisfaction and lists winners in its annual Best Workplaces survey. The information forms a searchable database of workplaces ranked high by their employees, and the website encourages browsers to use it to find the qualities in a workplace they are most proud of.

"In a tight labor market, these businesses are out to nab top-performing employees by making life on the job ever more rewarding," says Inc.com. "You can search this year's list by state, industry, company size, and benefits—including generous parental leave, onsite medical and fitness, pet-friendly policies, tuition reimbursement, and more."

Would your company make the list? Being introspective and honest with what you discover takes courage, but it is an investment in yourself and your business that you can't afford to avoid. Trade contractors who make the list and succeed at recruitment follow some key points. They are forward-thinking, open to new ideas, and still true to their founding values of quality, craftsmanship, and value.

Breslin adds that contractors also need to invest in their workforce, young or old. "Have a career path plan for new people," he says. "It is important to interview and evaluate candidates effectively, and to have a serious training budget."

It is time to stop buying into stereotypes and start seeing individuals for the value they bring to the workplace. When we choose to meet on common ground and see both strengths and weaknesses as opportunities for growth, we will begin to close the gap and move into a brighter collective future for all. ■

BRIDGING THE GAP: KEY MESSAGES THAT APPEAL TO WORKERS ACROSS THE AGES

- Showcase how a job in the trades solves everyday problems and makes a difference in people's lives.
- Promote job security, including living wage, pension, and benefits.
- Integrate technology thoughtfully—adoption for the sake of it is worse than not using technology at all. Think about ease of use, learning curve, and its effectiveness at eliminating mundane tasks.
- Use real life stories to sell recruitment.
- Use social media. Even certain platforms are moving into realms of "current" and "for old people" so a broad social media strategy should reach everyone.
- Reward hard work of all kinds—physical accomplishment, creativity in the work place, problem-solving, or meeting a company or personal goal all deserve recognition, not necessarily for the task itself but for the determination and drive it took to get there.



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Business Representative	Richard Mangelsdorf
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STREAMLINE AND IMPROVE YOUR BOTTOM LINE WITH FASTEST ESTIMATING SOFTWARE

As we head into the year 2020, digital plan files are the new normal when it comes to project estimation across all trades and scopes. FastEST, Inc. with its award-winning program set of FastDUCT®, FastPIPE®, and FastWRAP™, has the perfect estimating tools for HVAC, mechanical, and plumbing contractors to tackle project estimating in this truly digital age.

With FastEST's line of easy-to-use and accurate estimating software programs, contractors can increase the accuracy and output of HVAC, plumbing, and mechanical insulation bids. With FastDUCT® for HVAC ductwork and industrial sheet metal; FastPIPE® for plumbing, mechanical, and site utilities; and FastWRAP™ for piping and ductwork insulation, FastEST has an estimating solution for all types of mechanical, plumbing, and insulation contractors.

Whether customers started out estimating by hand, with a spreadsheet, or with an alternative software product, they have experienced consistent success stories transitioning to using FastPIPE®, FastDUCT®, or FastWRAP™. What makes the switch so beneficial for contractors? Here are just a few examples of how contractors can streamline the estimating process while improving the company's bottom line.



Digital plan import – One of the cornerstones of the FastEST suite of estimating software programs is the award-winning On-Screen Digitizer feature. Included with all systems, users are able to import PDF and several other digital plan formats directly into their estimate. From there, they can set the scale and start their takeoff right on the monitor. Takeoff speeds and accuracy are greatly increased, and users save time and money by avoiding the need to print or borrow hard copy plans just for the bidding process.

Estimate jobs of all sizes and scopes – Another great aspect of the FastEST programs is their ease-of-use and flexibility. Customers range from one-person shops to some of the largest mechanical contractors in North America, running 50 or 60 stations of the software. The programs can handle anything from small change orders to National Football League stadiums with ease (one of FastEST's long-time customers estimated the mechanical piping and ductwork on Levi's Stadium, home of the San Francisco 49ers, back in 2011). Regardless of job size or scope, plan takeoff and report calculations still only take mere seconds.

Fast, easy setup – All FastEST programs come ready-to-use right out of the box. Each new customer can start using the program as soon as they open it, with pre-loaded job templates filled with comprehensive specifications, job items, and assemblies. Then, each customer can customize the programs to be tailored to their particular estimating situation, with assistance from FastEST's knowledgeable, reliable support staff.

Excellent customer support – As mentioned above, FastEST prides itself on unmatched, dependable customer support. A great majority of FastEST users say that is one of the top reasons they are satisfied with FastEST's estimating software programs. Technical support and online training are just a phone call, email, or website visit away.

Find out more about FastEST, Inc. and its programs by visiting <https://fastest-inc.com>. Check out the videos, or schedule an online demonstration to get a full walkthrough of the software. ■

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MOBILIZING FOR THE FUTURE: FIELD TECHNOLOGY

In the last two years alone, 90% of the information in world history has been generated. In all aspects of our lives, technology is moving at an unprecedented pace and elevating the way we live, work, and communicate.

Technical solutions focused on the construction industry are growing at an extremely rapid pace as well. During 2018 US based construction technology startups raised \$3.1 billion dollars in over 130 major investment deals. How do you learn about new ideas, separate the buzzwords from the strategies, and use construction technology to your advantage in driving safety, productivity, and a competitive edge for your company?

In order to champion innovation and increase efficiency at your organization, the first step is to ensure that your company has a robust culture prepared to take on new challenges. As explained by Frederic Le Play, “the most important product of the mines is the miner.” No matter the complex buildings or other precious resources produced by your employees, the people themselves are the most important output of your company’s efforts. Focusing on a people-first mentality creates an environment of loyalty, creativity, and generates strategic mindshare far beyond that of a company driven by isolated visionaries.

To purposefully look at innovation, first seek to understand the needs of your workers and help to elevate solutions that eliminate their unique challenges. Working in the field presents high exposure risks for any construction company. Strong safety practices reduce these risks while increasing worker focus and quality of output.

Not every safety technology is appropriate for every corporate culture. Allowing your team to champion and test their own safety practices enables employee engagement during all levels of implementation. Special consideration should be taken to avoid fatigue and worker exposure. Your body is the most important tool that will ever be used on the job and care should be taken to prevent injuries at all costs. Technologies empowering worker safety include the following:

1. Triax Technologies’ Spot-R wearables create a live network of site awareness. This enables zone-monitoring and worker biometrics while maintaining privacy limits for active jobsites.
2. Construction Robotics’ Material Unit Lift Enhancer (MULE) reduces muscular strain caused by heavy material transport. By shifting the burden of material movement to a robotic arm, workers can exercise dynamic control over site materials.
3. Smartvid.io makes use of the massive amounts of progress and security data already created on a jobsite to predict safety



By / Tauhira Ali, Sr. Manager of
Construction Technology | Milwaukee Tool

incidents. By leveraging artificial intelligence, this software provides information to empower workers and eliminates risks long before accidents can occur.

Connected equipment improves awareness and operating functionality during all phases of new construction and site maintenance. Smart equipment provides information that extends a human worker’s ability to make informed decisions. Technological advancements in the field create opportunities for versatile, robust devices that can record operating and environmental information and enable contractors to perform tasks more quickly, safely, and efficiently. Below are some connected tool products that are advancing field productivity:

1. Milwaukee Tool’s ONE-KEY platform reduces worker downtime by ensuring that contractors have the right tools for the job. Through customizable tool control, ONE-KEY drives efficiency in precise and repeatable tasks, records operation information, and provides tool diagnostics.
2. Verizon Connect’s Telematics Platform keeps teams safe and engaged through scheduling and logistics tracking. Workers can better understand and control their equipment through these connected devices.
3. Johnson Controls’ Enterprise Management 2.0 platform leverages the power of connected equipment on a comprehensive analytics system for energy management, space planning, and equipment performance. By interpreting multiple sensors through precise data analytics, key decision makers can develop proactive site plans.

Digital transformation is driven by much more than startup funding and powerful technology capabilities. In an industry where each contractor has unique identity and corporate culture, innovation must start from an internal desire to improve. By exploring new solutions and engaging employees at all levels of an organization, companies can position themselves to be strong and agile for whatever the future looks like. As the world continues to evolve and be disrupted by new technologies and processes, the time is ripe to create pioneers for a sustainable future. Be brave, be curious, but above all, be advocates for your people. ■

A MILLION MILES LATER, SOME THINGS NEVER CHANGE

Last month I was flying along, minding my own business, when the flight attendant came up to me. In the crowded cabin she announced to me and the other passengers that on this flight I would pass one million miles flying on United. Everyone clapped. I sat there stunned. A thousand presentations and four hundred thousand people later—and now, a million miles. My thoughts were interrupted by the woman next to me. She asked, “So what do you get for a million miles?” And before I could think, it just popped out of my mouth.

“You get an ex-wife.”

Everyone howled with laughter.

So, after that many miles and years, I want to take an inventory on what has changed or improved in our industry and what has remained the same. With pretty much unlimited access to the owner community; construction CEOs and International Presidents; learning specialists, training directors, Business Managers, field leaders, rank-and-file union members, and even apprentices, here are my findings for your consideration.

The Good

1. Unions are much more businesslike and ROI-focused. The old school, status-quo dinosaurs have finally died off. The younger leaders are more professional and often getting it done.
2. Our safety culture is outstanding and remarkable in its depth and execution.



By / Mark Breslin

3. Accountability and performance matter. Finally.
4. Negotiated work becoming dominant has changed a lot of the low-bid mentality and bad business practices.
5. The amount of resources dedicated to training now being provided is unprecedented and noteworthy.
6. The new generation of leadership has way more emotional and social intelligence and uses it well.
7. Contractors are finally focusing on people as their most valuable assets and investing in them at a level not seen before. Recruitment and retention are part of any successful contractor’s strategy for the first time.
8. The Millennial apprentices that I meet today are better educated, more open to change, highly optimistic, and will change the game for our industry (despite their “issues”).

The Bad

1. The stigma about working in our industry still exists. Parents, teachers, and counsellors still don’t get the amazing opportunity. But at least the value of a college education (and debt) is up for debate.

continued on page 26

SHARE YOUR NEWS AND IDEAS

Got news? *Sheet Metal Journal* represents diverse voices in the sheet metal / HVAC industry, and we’d like to hear yours. We are actively seeking ideas and suggestions for upcoming stories, articles, and project highlights. If you have a significant project underway or recently completed, or the inside scoop on an industry issue, then you have something to contribute to *Sheet Metal Journal*.

We take your ideas and set our editorial team to work on developing high-quality, informative news stories and photography that fully explore your ideas. Telling us what is important in your industry ensures *Sheet Metal Journal* is always timely and relevant, and representing your projects in print showcases your workmanship and expertise in a straightforward, credible manner.

It’s easier than you think. We accept pre-written articles, or take five minutes to call in or email your idea and tell us why it’s important, and we will do the rest. You will always have

the opportunity to review the article for technical accuracy before it goes to press. So, what are you waiting for?

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- Low time commitment: interviews by phone or email require a 15- to 20-minute time commitment
- “Show don’t tell”: marketing tells people how great you are; editorial coverage shows your expertise
- Simple process: call or email your idea and we will follow up within 24 hours
- Editorial accuracy: you will always have the opportunity to review the article’s technical accuracy
- Cost-free: contributing to news and project stories doesn’t cost a dime. In fact, your company benefits from the exposure.

Share your ideas with Jessica Kirby, editor, at 250.816.3671 or jessica.kirby@pointonemedia.com.

DOES SIZE MATTER?

We are entering a period of significant change when it comes to energy code upgrades and more stringent mechanical engineering specifications. The engineers who take the time to understand the significance and implications these changes are having on our industry will do well. Others? Not so much.

The BC Building Code (BCBC) currently cites ASHRAE 90.1-2010, and that standard includes increased minimum pipe insulation thicknesses (size) over previous editions of 90.1. The National Energy Code for Buildings-2015 (NECB-2015) is also an improvement over previous editions, particularly when it comes to minimum mechanical insulation thicknesses.

The tables relating to minimum pipe insulation thicknesses in NECB-2015 were based on ASHRAE 90.1-2010 with a few changes reflecting the Canadian experience. However, NECB-2015 goes beyond ASHRAE 90.1-2010 in a very significant way. But before we get to that, let's take a very brief look at "code harmonization".

The federal government entered discussions with those provinces that currently have their own building/energy codes, namely BC and Ontario. The ultimate goal is to take the most stringent requirements from the provincial codes and the federal codes in order to ultimately establish a uniform code throughout Canada. This is ongoing with no end date at this time.

A number of mechanical engineers have revised their specifications to reflect the changes in NECB-2015. Keep in mind these codes require minimum. An engineer or a municipality, such as the City of Vancouver, can, if they wish, go "better than code"—that is, above minimum. This is where NECB-2015 comes into play. Because of statements in that code, yes, size (thickness) does matter. The following is copied directly from the sections on duct and pipe insulation:

5.2.2.5. Duct and Plenum Insulation

5.2.2.5.2) The insulation thickness used to determine compliance with Table 5.2.2.5 shall be the thickness of the insulation after installation.

5.2.2.5.8) Manufactured thickness shall not be altered.

5.2.5.3. Piping Insulation

5.2.5.3.8) The insulation thickness used to determine compliance with Table 5.2.5.3 shall be the thickness of the insulation after installation.

Table 5.2.5.3. This specifies insulation with upwards of 50% greater thicknesses than the previous NECB.



By Norm Grusnick, P. Eng

We should be aware there are no exceptions when it comes to insulation coverage. Either insulation is not required (per ASHRAE 90.1-2010 or NECB-2015) or it is. If insulation is not a requirement, this is the express decision of the "authority having jurisdiction". Insulation must therefore be continuous throughout the pipe system, over valves, elbows, etc., to the same R-value as on the adjacent piping. The same applies to insulation on below ambient pipe systems where the vapour barrier must also be continuous. In practical terms, this is often difficult to achieve.

NOTE: Plastic pipe (e.g.) PEX is not treated any differently in the codes than metallic piping. If metallic piping has to be insulated, then so must plastic pipe.

Engineers and mechanical contractors must be made aware that clearance between components is critical, that saddles and hangers must be correctly sized, and that ball valves must come with valve stem extensions.

It is incumbent on us to educate ourselves and all involved parties. Projects including the BCICA QAC program have a third-party inspection service to make sure these new specified thicknesses are installed as specified. ■

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WELDING FUME REGULATION

In the sheet metal industry, welding is a commonly-executed work task. During welding activities, fumes and gases generated pose a serious threat to welders and to workers situated in close proximity. If not properly controlled, respiratory exposure to metal fumes and a combination of other gases could lead to serious illness and/or disease.

While worker respiratory exposure assessments are typically performed on welders because of their direct involvement, there are also concerns about workers situated in close proximity to the welders—both are at risk of over-exposure.

There are detrimental health effects from both short- and long-term exposure to the gases and fumes generated during welding, and the likelihood of contracting an occupational disease increases with higher concentration and longer exposure. Individual factors such as age and health of the exposed worker also play a role in the susceptibility of contracting an occupational disease. To address the risk, employers and employees must work together to mitigate potential exposures where possible by achieving regulation compliance and implementing safe work controls.

Regulation and standards

Because of the harmful consequences associated with respiratory exposure to the gases and fumes generated during welding, there is legislation within each jurisdiction that requires employers to assess the risk of exposure and address it by implementing various controls. In British Columbia, exposure limits are set for hundreds of chemicals. When it comes to welding, most of the gases and fumes that are generated have exposure limits.

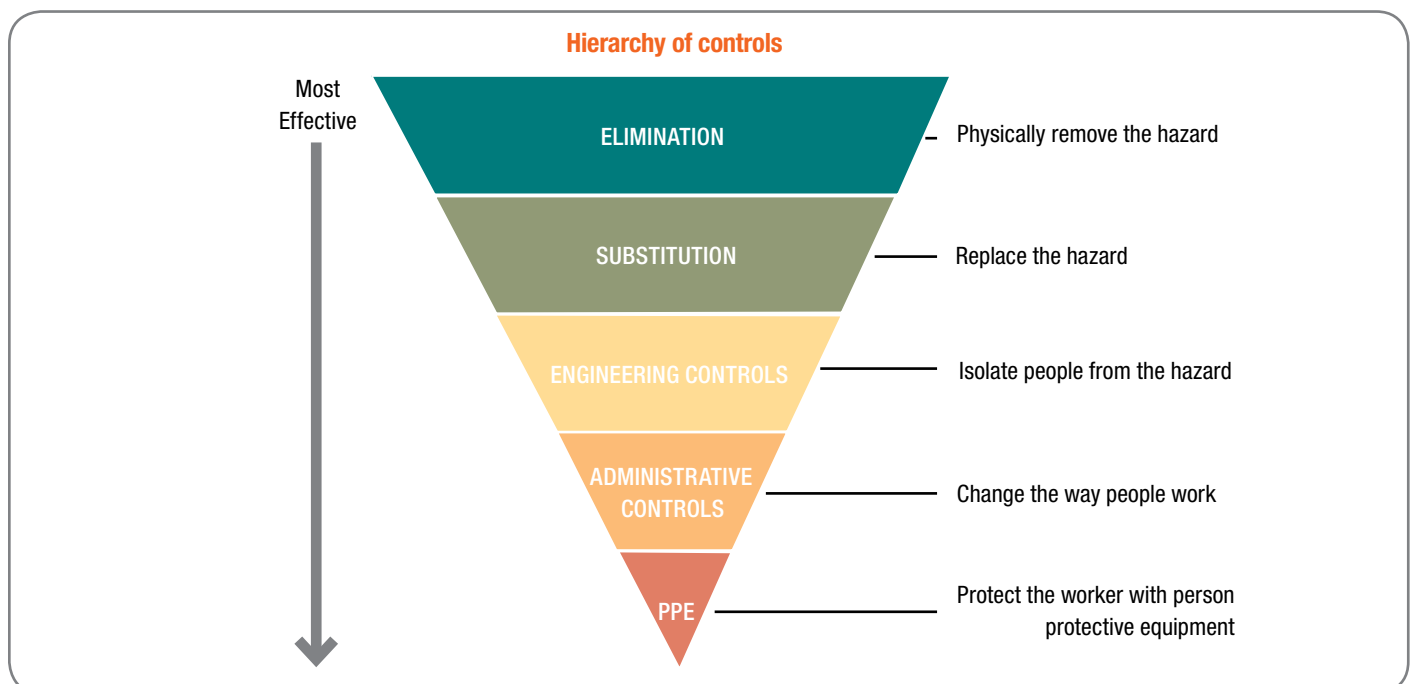


By / Hans Kriekenbeek, Industry and Labour Specialist, WorkSafeBC

When employers measure the gases and fumes their workers are exposed to, they may engage an industrial hygienist to assist them. This assessment can be completed through various exposure monitoring techniques. It is important to work with the industrial hygienist to determine optimal assessment methods. The results of these assessments would then be compared to the local occupational health and safety legislation standard. In B.C., the applicable standard is the WorkSafeBC Occupational Health and Safety Regulatory exposure limit table found at: <https://www.worksafebc.com/en/resources/law-policy/ohs-guidelines/table-exposure-limits-chemical-biological-substances?lang=en>

Control approaches and strategies

Various exposure limits are constantly under review as new data on health effects and new analytical sampling techniques become available. Within BC, a reduction in the exposure limit for Manganese – one of the metals commonly associated with welding – was recently adopted. The exposure limit for a select particle size fraction of manganese has decreased by one order of magnitude; consequently, more effective controls need to be implemented to ensure that exposure among



welders and workers in close proximity is kept below the adjusted exposure limit.

Effective controls generally follow a hierarchy with elimination at the forefront, followed by substitution, engineering, administrative, and personal protective equipment. By implementing controls at each level, the employer can improve the effectiveness of mitigating worker exposures to the gases and fumes generated during welding.

An example of a substitution control is exchanging welding rods that contain higher percentages of manganese for ones with significantly less. This would lead to a reduction of airborne manganese generated during welding activities. In addition, local exhaust ventilation that draws the gases and fumes away from the worker's breathing zone is a tested and proven method of protecting workers. Wearing respiratory protective equipment, such as a tight-fitting respirator, also limits airborne exposures.

Other controls include, but are not limited to, general exhaust ventilation, changing the welding technique (e.g. such as using lower current, lower voltage), and training techniques such as speed of welding and body positioning in proximity to the exhaust fumes.

An effective management system helps assess all workers who could be potentially exposed. Once those workers have been identified, it is up to the organization to see what controls work best for their operations. This can be best done by working together with a combination of safety professionals, the joint occupational health and safety committee, and the workers themselves. A regular process of verifying the effectiveness of safe work controls should be conducted to ensure they are working properly. Ultimately, the goal is to ensure that an organization's best resource – its workers – are kept safe from these exposures. ■

Hans recently joined WorkSafeBC in the Industry & Labour Specialist division having previously spent 13 years in the occupational health, hygiene, and safety (OHHS) consulting industry. His work offers occupational health and safety resources, outreach, and consulting services to the workers, employers and industries of British Columbia in support of WorkSafeBC's vision of a British Columbia free from workplace injury, disease, and death.

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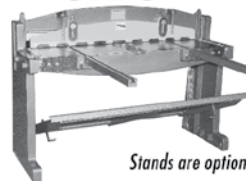
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Left: Jud Martell, Local Union No. 280 President.
Right: Bernie Antchak, Northwest Sheet Metal Ltd., SMACNA-BC President.



Labour & Management
“Embracing the Challenge”

- B. Flaherty, Cornell University, Syracuse, N.Y.

CONTRACTOR'S ADVICE

continued from page 22

2. The intake system for apprentices in union construction still sucks. It is often disjointed and lacks proper testing, interview, and other protocols, leading to 10-30% drop outs and the entry of marginal candidates. We can do much better.
3. The structure of most major unions has not changed much, nor have there been the mergers or consolidation that were expected to increase resources, leverage economies of scale, and reduce union politics as an obstacle to change.
4. The state of training and development by most contractors for their field leaders is pathetic. Field leaders who manage tens to hundreds of millions of dollars in a career still rarely get any form of leadership and management training—and that falls squarely on contractors for their apathy.
5. Many owners still treat contractors poorly. Transfer of risk has become a high art: brutal specifications, insane schedules, poor designs, lack of communication, untimely responses, overreach by retained CMs, and a lot more—despite a full two decades of “partnering,” it still looks to me like the owner community has a long way to go.

The Ugly

1. The other day, at a program for 200 field leaders made up of many companies, I asked how many of them had received praise and recognition for their work in the last month. Not one of them raised their hand. That is a broken “tough guy” culture that has yet to change.
2. Last month, I asked 500 apprentices how many of them had already heard on the jobsite the phrases, “You’re not paid to think” or “You get paid from the neck down.” Every hand went up. That, too, is a broken culture that needs to change.

3. Our industry is still often not a safe and supportive place for women and minorities to grow and succeed. Hard to believe in 2019, but there it is.

In summary, I am actually very optimistic about change and our industry. Yes, it is taking a while. Yes, we probably could have moved faster on a lot of this. But every day now, I see and feel the hunger for more change and a culture of “better, faster, smarter, and safer.” And its pace can be shocking. What I thought might be a little experiment in 2018 with micro-learning leadership video training resulted in contractors and unions putting 15,000 field leaders on the system in one year, blowing my mind and confirming that there is more momentum, belief, investment, and care for our workforce than meets the eye.

As well, what makes me really happy is seeing a holistic change where employers and unions are focusing on our workforce as people—not looking at them as a commodity, a vote to be reelected, or a set of skills to be used for a jobsite function. I feel the care out there, and so do those working for you. I can say for certain that was absent when I got on that first flight way back when.

Finally, I’d like to correct the record. The woman who asked about the million miles? I gave her the wrong answer. The real answer is for all those miles, I was gifted an opportunity, and that was to make a difference—for an industry and for individuals. It’s the same opportunity every reader of this article has every day in our industry. Let us all use it well to create positive change. Many are counting on us to do so. ■

Mark Breslin is an author, speaker, CEO, and influencer inspiring change for workplace success across all levels of business. His new micro-learning video series, “The Professional Construction Leader” is revolutionizing construction foreman training as well as field operations, performance, and profitability. For more information on Mark go to www.breslin.biz

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