

SUMMER 2018

# Sheet Metal Journal

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Western Washington

## THE CHANGING FACE OF LABOR

*Also in this issue:*

**Women in  
Construction**

**University of  
Washington:**

**NanoEngineering &  
Sciences Building**

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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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## WOMEN IN CONSTRUCTION

As of 2015, women working in construction made up 1.3 percent of the workforce in America. On the average, women make 81.1 percent of the wages men make; however, this gap is far smaller in construction at just 4.3 percent difference between the genders. In 2016, studies numbered women in construction at around 939,000—equalling about 9.1 percent of the industry's workforce.

With the number of women in construction growing 81.3 percent over the past 30 years, recruitment efforts, retainment strategies, and general understanding of gender-specific barriers to successful careers in trades are on the table and under scrutiny. The challenges – sexism, assault, lack of opportunities, lack of mentorship – prevail, but to a much lesser degree than in the past. And, as today's generation of workers acclimates to diversity from the very beginning, the brightest future women in trades have seen for three decades is surely on the horizon.

Why, then, dedicate an issue to women in construction? Because change is relative. It is true, the number of women in the industry has grown and resistance to changing demographics is down, but issues still persist. As observed by members of the Women's Leadership Council, a SMACNA National initiative co-chaired by myself and SMACNA National vice-president Angie Simon, attitudes and efforts around drawing women and minorities into construction vary dramatically across the country, despite tangible evidence of the social, economic, and productivity-driven benefits of diversity in the workplace.

A diverse and inclusive workforce lowers employer costs associated with employee turnover. Re-strategizing the workplace culture to embrace diversity fosters a more creative workforce, and improves companies' competitiveness on local and global scales. The return on investment is guaranteed as adequate training, inclusive HR policies, and the optics of a diverse workforce are key components of effective employee retention.

Recruiting and retaining women is not so different from recruiting and retaining other individuals. Companies need inclusive policies, family-friendly hours and flex time, and preventative diversity training for all employees and from day one.

Mentorship is one of the most importance factors in any recruitment / retention plan, so create mentorship opportunities for women, take women to trade shows and recruitment fairs, and ask women to speak to their friends and relatives about the opportunities that exist in our trade. And when opportunities for extra training or advancement arise, ensure everyone has equal access.

According to the Construction Sector Council's Women in Construction Engagement Strategy, the following six tips should



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

be the prime components of a successful recruitment strategy for women:

*Industry leadership:* Leaders must drive behavioral change, develop policy to encourage respectful and welcoming workplace culture, provide straightforward avenues to report abuse, and consider family-friendly workplace policies.

*Apprenticeship:* Women need opportunities to complete the full range of trade-related skills and responsibilities, strong and relevant mentoring opportunities, and assistance building strong and useful relationships with industry agencies and training entities.

*Training:* Diversity/cultural sensitivity training should be available to all management, supervisors, and tradespersons, and diversity should be a strong component of mentoring and supervision practices. Technical training should also be specific to women's requirements, including general orientation in the construction workplace and accessibility focused on family responsibilities.

*Outreach, Recruitment, and Retention:* Examine and articulate a strong business case for women in construction. Share best practices to promote the use of successful programs, resources, and tools. Look for industry heroes and tradeswomen to act as spokespersons.

*Policies and Procedures:* These should be developed to address intrinsic, ingrained barriers to recruiting women. Support internal best practices that can influence labor groups in developing overarching inclusion policies. Be sure safety policies and equipment are appropriate for all employees, including women.

*Partnerships with regional stakeholders:* Seek opportunities to partner with national and regional stakeholders in support of women in the construction industry. Communicate the importance of diversity to all construction stakeholders, and work with them to integrate women into the construction industry.

This kind of inclusion is an investment in your companies today, that will pay off in the decades to come. ■

## MEET THE BOARD: THOMAS MONTGOMERY

Tom Montgomery is serving a three-year term as SMACNA-WW's vice-president, and served as secretary/treasurer for two years prior. He is currently the management chair and secretary/treasurer for the Western Washington sheet metal worker's JATC. He is also general manager of service operations at ACCO Engineering Systems, which specializes in commercial HVAC engineering, fabrication, installs, service, and controls.

After 38 years in the industry, Montgomery recalls his entry into sheet metal work. "I stumbled into it as a summer job out of high school as a delivery driver," he says. "I liked what I saw and enrolled in college while working to learn more about the business. I became very interested in the design aspect as well as the service side."

He sees the industry facing some big challenges over the years—customer access to information and access to purchasing their own equipment, for one. "Selling equipment and parts is a vital part of our business and we are challenged more and more everyday when customers want pricing for labor only," he says.



Tom Montgomery,  
Vice-President, SMACNA-WW

Technology has made a huge impact on the work, rendering the equipment smarter and more energy efficient. BIM has also allowed trades to coordinate in advance during design phase and eliminate waste in the field from rework.

This is where the future's biggest opportunity lies, says Montgomery. "Technical advances in our industry will continue to attract top level talent and will drive innovation into buildings and our systems in ways we can't even imagine today," he says. "The way we have always done it' is being challenged today and will continue to be challenged for many years to come."

He says these changes will fuel the necessity for innovation inside companies and companies' processes and approach to jobs. Customer needs change as fast as technology changes, and real time information on buildings, projects, services, and people will be available through smart devices with easy access even more than is evident today. Keeping up these demands will be the key to success for any company providing these services.

Moving forward, SMACNA has an important role to play in the industry's development and success. "[It must] assist in the overall success of the industry through training, technical support, lobbying, and contractor representation in labor negotiations and disputes," says Montgomery. As vice-president, he hopes to break the 'business as usual' mind set and lay the ground work for the next level of leaders who will help lead the industry through the opportunities and challenges that lie ahead.

"Lastly, I like to model and teach that you give back to the industry that has helped provide us with great careers and means to take care of ourselves and our families," he says. "Pay it forward to the ones coming up behind you."

His ambition ties in well with his professional philosophy:

"Don't kill the goose that lays the golden eggs," he says. "It can all be gone tomorrow if we don't work together and take care of business." ■



### UPCOMING NATIONAL EVENTS

**Oct 06 - 09, 2018**

Advanced Project Managers Institute  
Raleigh, NC

**Oct 14 - 17, 2018**

2018 SMACNA Annual Convention  
San Diego, CA

**Dec 02 - 04, 2018**

2018 December Council of Chapter Representatives  
Miami, FL

**Jan 27 - 29, 2019**

2019 Chapter Executive Institute  
Austin, TX

**Mar 03 - 07, 2019**

2019 Business Management University  
Tempe, AZ

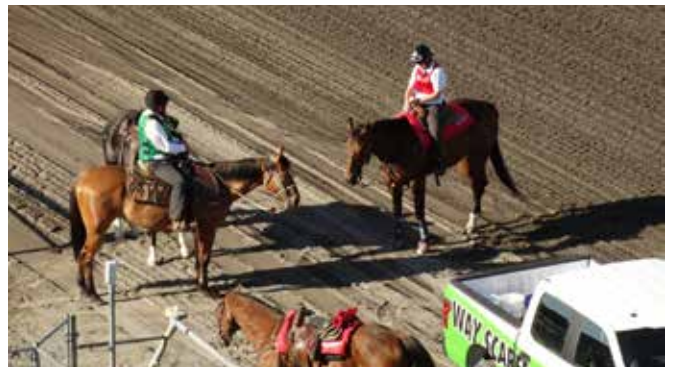
**Oct 20 - 23, 2019**

2019 SMACNA Annual Convention  
Austin, TX



## JUNE MEMBERSHIP SUMMER EVENT: AN EVENING AT THE RACES AT EMERALD DOWNS

SMACNA-Western Washington held a fun and successful membership event in June—an evening at the horse races at Emerald Downs. Approximately 80 members and their guests came out to experience the thrill of the race and the competitive excitement of this age-old sport. This was an excellent turn out for the event. Members enjoyed the races while connecting with one another, forming new friendships, and rekindling old ones. Having some interactive and relaxation time away from the office was an excellent opportunity for everyone who attended. To top things off, SMACNA-WW ordered up some great food and spectacular weather, and members were invited to go down to the winners' circle and meet some of the horses and jockeys. Thanks to everyone who attended and we can't wait to see you at our next membership event September 19 at LeMay Americas Car Museum in Tacoma. Watch your email for details and information ■



## SAVE THE DATE

**Thursday, August 30 – Women's Luncheon with Guest Speaker Stephanie McShane**

Stephanie McShane, Maxim Consulting Group, LLC, will discuss *Critical Communication Skills for the 21st Century Construction Industry*, an essential topic in our industry's contemporary business climate. McShane will address members at the Renton Hyatt Regency. Contact the SMACNA-WW office for more information and to register.

**Wednesday, November 14 – Membership Meeting with Guest Speaker Michael Geraghty**

Michael Geraghty is an expert in cross-cultural communication and negotiation with 14 years' experience in a Fortune 500 company having negotiated contracts all over America, Europe, and Asia. He will discuss *Key Secrets of Master Communicators* with members at the Seatac Marriott. For more information, contact the SMACNA-WW office. ■

## UPCOMING SMACNA-WW EVENTS

**August 3**

**Annual Golf Tournament, Washington National Golf Club**

**August 30**

**Women's Luncheon - Stephane McShane "Critical Communication Skills," Hyatt Regency Lake Washington at Seattle's Southport, Renton**

**September 19**

**SMACNA Membership Event America's Car Museum, Tacoma**

**October 14-17**

**SMACNA National Convention, San Diego, CA**

**November 8**

**Membership Meeting - Michael Geraghty "Key Secrets of Master Communicators," Seatac Marriott**

**December 7**

**SMACNA-WW Annual Holiday Gala, Seattle Marriott Waterfront**



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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## SMACNA CHAPTER EXECUTIVE OF THE YEAR ENCOURAGES INNOVATION

*Muller-Neff took dad's love of career and a law degree to help contractors compete*

From the northwest corner of the United States, Julie Muller-Neff, executive director of the Western Washington chapter of Sheet Metal and Air Conditioning Contractors' National Association's (SMACNA) and 2017 SMACNA Chapter Executive of the Year, is doing her part to change her industry.

Muller-Neff worked closely with Sheet Metal Air, Rail and Transportation Workers (SMART) Local 66 and its Western Washington Sheet Metal training center to bring the first SMART Heroes program in the country to the Seattle area. The veteran training program provides new and soon-to-be veterans with a seven-week, concentrated training, allowing them, upon graduation, to enter sheet metal training centers across the country as a second-year apprentice.

SMART Heroes was established by SMART and SMACNA, in collaboration with SMART Local 66, SMACNA Western Washington, Western Washington Sheet Metal training center and Helmets to Hardhats.

"Julie has been a great advocate for training for all of our members," said Don Steltz, administrator for Western Washington Sheet Metal. "She has always taken the time to see what the needs are for the local members and contractors. Julie and her team at SMACNA bring in outside vendors to provide training, giving our members a leg up on the competition."

As a daughter to a construction worker, Muller-Neff was in awe of her father's trade. Once she graduated college, she went on to earn her law degree. She then went to work in construction law, helping subcontractors and contractors retrieve payment for completed projects. Through that work, Muller-Neff became aware of Orange County/Inland Empire SMACNA (now part of Southern California SMACNA) and was hired as its executive director.

Three years ago, she and her young family moved to Washington so Muller-Neff could accept her current position.

"I thought this was a great way to use my law degree," she said. "I love working with people in the construction industry. They are so down to earth and innovative. They never stop working. Sheet metal contractors are constantly thinking about their companies. They're constantly thinking how to make it better."

Muller-Neff also consistently thinks about how to make what is now her industry better. Together with Angela Simon, 2016 SMACNA Contractor of the Year and SMACNA national vice-president, they have formed the Women in Construction

Leadership Council, a national SMACNA committee, and will hold its first summit this summer. The committee will get the best minds together to seek opportunities that help women grow in the industry.

"The initial mission of the committee is to focus on the women who aspire to take on leadership positions in member companies, chapters and/or are interested in becoming involved in SMACNA both locally and nationally," Muller-Neff said. "That can definitely evolve as the group gains momentum."

All of her advocacy and work on behalf of sheet metal members can be traced back to her father's career and what the industry gave to her family.

"Our contractors are constantly changing and seeking those creative solutions. The best of the best compete against each other, and it's unbelievable what they're able to accomplish," Muller-Neff said. "I've always had respect for what my dad did, but I have more respect for it now." ■

## US CONSTRUCTION SPENDING UP 0.4 PERCENT

A 0.4 percent increase in construction spending in May compares with a downward figure in April, indicating fluctuations in the construction market despite overall growth in the American economy.

May's increase brings total construction spending to a seasonally-adjusted high of \$1.31 trillion, which represents 4.5 percent growth over last year.

April's numbers were initially reported as an 1.8 percent increase, but were later readjusted down to 0.9 percent. These figures follow a 0.9 percent drop in March—the first since July of 2017. Total private construction figures rose by 0.3 percent, while private, non-residential building fell 0.3 percent.

Moving into the rest of this year, forecasts suggest construction spending making an impact on overall economic growth, despite rising interest rates.

Although government budgets have tightened, public project development rose 0.7 percent in May to \$304.1 billion—the highest since October 2010. Economists say a 0.6 percent rise in state and local construction prompted the gain. State and local government construction spending amounted to \$282.1 billion, the most since September of 2009. ■

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## KNOW HOW TO PROTECT YOUR WORKERS FROM FALLING

*Falls are one of the most common causes of serious work-related injuries and deaths in construction—yet are very often preventable*

By law, employers must set up their work places to prevent employees from falling off platforms, ladders, and elevated work stations or into holes in floors and walls. The height at which fall protection is required varies by workplace (shops and construction sites) as well as by state regulation.

OSHA also requires that, regardless of the fall distance, fall protection must be provided when working above dangerous equipment and machinery.

To prevent employees from being injured in falls, members need to:

- Ensure ladder safety is part of an effective fall-protection program.
- Guard every floor hole, including skylights, that a worker can accidentally fall through, using a railing and toe-board or a floor hole cover.
- Provide a guardrail and toe-board around every elevated open-sided platform, floor, or runway.

- Provide guardrails and toe-boards to prevent workers from falling and being injured if a worker can fall into or onto dangerous machinery or equipment (i.e., a vat of acid or conveyor belt), regardless of height.
- Provide additional fall protection that may be required on certain jobs, including safety harnesses and lines, safety nets, stair railings, and hand rails.

OSHA requires employers to:

- Provide working conditions that are free of known dangers.
- Keep floors in work areas clean and dry.
- Provide required personal protective equipment (PPE) at no cost to workers.
- Train workers about job hazards in a language they can understand.

For more information on fall protection, visit the OSHA Fall Protection web page or contact Mike McCullion, SMACNA's director of market sectors and safety at (703) 995-4027 or [mmccullion@smacna.org](mailto:mmccullion@smacna.org). ■

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# The Changing Face of Labor

By / Jessica Kirby

**CHANGING LABOR FORCE DEMOGRAPHICS** and supply are catalysts for change in labor force patterns in the sheet metal industry. No longer the exclusive territory of a single gender or ethnicity, initiatives focused on recruiting women and minority groups are growing among local SMACNA chapters and at the National level, and the momentum is building.

In 2008, Angie Simon was president of Western Allied Mechanical, a mechanical contracting firm with around 225 employees, and she'd been involved in the Bay Area SMACNA chapter since 1999. She was asked to join the National board and was surprised to learn she would be the first woman to do so.

"I couldn't believe it," says Simon. "SMACNA is about to celebrate its 75-year anniversary and it had never had a woman on the board? Where were all the family owned businesses run by women?"

The reaction to her appointment was equally baffling for some of the people on the board, which is made up of 25 individuals from across the country.

"After the first half day of first meeting I attended we went to lunch and three different guys came up and said, 'Wow, I didn't know a woman could know that much about air conditioning.' They had never experienced women in their business. A lot were floored, and most assumed I got into the industry because my dad owned the business."

Simon, a mechanical engineer who became interested in HVAC in college and whose father does not own a related business,

witnessed many changes after four years on the SMACNA board. Her fellow board members took the message of her success home to their local chapters and the word spread.

"After four years, the membership started transitioning to know and understand women can know HVAC and be good at it," she said. "Two other women came on the board and that really opened the door."

After her board term Simon was approached to see if she would work her way through the various committees and executive chairs, and when she finally agreed, it stirred up excitement for other women on the board and in the industry. Rumor had it, National wanted a woman who could be president. She was elected vice-president in 2016 and will move in to lead the association as president in 2019.

"There was a lot of excitement, so we decided to gather all the women of SMACNA and get them involved," says Simon. "We started at the grassroots level."

Simon, Julie Muller-Neff, executive vice-president of SMACNA-Western Washington, Bridgette Bienacker, director, business management and membership for SMACNA National, and about eight others made up a committee task force to establish a SMACNA Women in Construction Leadership Council.

"We decided as a group we would start, but it would take time," says Simon. "First, at the convention, we had a speaker talking about women's issues, and then a round table discussion sharing ideas and getting to know people."



“We were amazed at the turnout. We had a very involved, interactive group.”

The optics of Simon's rise through the ranks were essential in moving the association forward in terms of attracting and retaining female members. As she moved through the chairs, it propelled momentum as other women could see their peer making progress and being successful at this level.

“Part of the biggest issue we have is we need people in these positions so other ladies can see it can be done,” says Simon. “It is now time to take the next steps in the leadership group. We met in Boston to discuss the strategic plan and decide where this group wants to go and what we can do.”

Of those next steps, the first – and perhaps most important – will be to roll out the group's mandate and initiatives to local chapters and keep the momentum moving forward.

“I went to the Women Build Nations Conference last year in Chicago and there were probably 1600 tradeswomen there and they are working in the field,” says Simon. “Some have been steel workers for 30 years—I can't imagine what that was like.”

Simon also attended the MCA Chicago Women's Leadership Group dinner night and found a great deal of support for joint SMACNA-MCA initiatives.

And while the Women's Leadership Council has set up a listserv for interested members to stay connected about activities, initiatives, and mentorship opportunities, it will also need men's support if it is to reach its full potential. The whole industry must support diversity and address prohibitive issues, and once again it comes down to optics.

Simon addressed the Bay Area membership with 200 in the room. In her speech she noted that contractors tend to talk to their sons, grandsons, and nephews about the business and she issued an important challenge: “If you love this industry so much,” she said, “why not ask your daughters, granddaughters, and nieces? I challenge each of you to go home and tell at least one woman about your industry.”

Simon, Muller-Neff, Mechelle McNew, SMART Local Union

464, and Leah Rambo, SMART Local 28 Training Center presented a session titled *Diversify the Workforce: Recruiting Women and Minority Workers* at the 2018 Partners in Progress Conference, covering research that shows embracing diversity in construction helps contractors experience higher performance and increased profitability.

Other Women's Council efforts include using social media to spread the word and bring women together. “We are breaking barriers in certain parts of the country,” says Simon. “The West Coast tends to be more progressive and collaborative, while other parts are way less likely to try women in key roles.

“We need to find women in those roles and support them so they have the strength to stay and show the guys they can do it, and inspire women.”

Ours is a great industry, but it is not an easy industry,” says Simon, “but the next decade is going to change a lot faster than that last. Millenials are very collaborative. Our sons no longer see color or sexual orientation.

“We can't get frustrated, because things will change. We have to instead focus on the groundswell.”



SMACNA's leadership group is well-timed as chapters across the country have already set up women's groups focused on recruitment and retention and addressing the issues women face in trades.

SMACNA-Western Washington has a women's group focused on helping to foster an environment that welcomes women into the industry and assist with growth and leadership opportunities. Some of its initiatives include yearly educational programs at the convention, and, in future, local quarterly meetings. It seeks to conquer resistance with a positive attitude and policy of inclusiveness.

“Diversity in the workplace fosters more diversity,” says Muller-Neff, who co-chairs the Women's Leadership Council with Simon. “Get a current woman leader in the company to help recruit. Show there are opportunities for women; show what an amazing industry it is.”

*continued on page 23*



# WOMEN IN CONSTRUCTION

By / Jessica Kirby

Over the past three decades, thousands of women and men have taken strides to open doors, offer a helping hand, and demonstrate commitment, dedication, and – in some cases – unstoppable bravery in the move towards greater diversity in the construction industry, *Sheet Metal Journal – Western Washington* profiles just three of the industry's success stories.

## Grace Pizzey

### Success Through Balance

**SOME WOULD SAY GRACE PIZZEY'S** rise from temp receptionist to company vice-president is a classic Cinderella tale, but it is in fact a story of progress, determination, supportive mentors, and a dynamic company culture.

Pizzey graduated from the Colorado College in 1990 and moved to Seattle. She started as a temporary receptionist at Holaday-Parks, where she quickly demonstrated her aptitude and interest for learning about the industry. After a few months, Holaday-Parks asked her to stay on as assistant controller.

In that role she learned accounts receivable, billing, collections, and other day-to-day, behind-the-scenes systems driving the company's successful operation. "Collections is an interesting way in and to understand a company," she says. "Any time there was a slow payment or dispute I would find out what happened, dig into the job, and find a way to make things right."

As Pizzey's title grew to controller and then vice-president, her responsibilities grew to negotiating contract terms,

settling disputes and managing insurance, banking, bonding relationships, and internal departments including accounting, human resources, administration, and purchasing.

When Pizzey joined Holaday-Parks, it was a small family-owned business. The company has since grown from annual revenues of \$30 million to over \$150 million. When the last member of the original family decided to retire, the company stock was sold to a small group of long-term employees, including Pizzey.

She loves the industry because of its dynamic, changing nature. "The amount of coordination required among so many different trades is staggering," she says. "My favorite thing is driving through town noticing all of the different projects that we had a part in. Construction provides a unique opportunity to shape the community you live in."

Her awe of the built environment is superseded only by her respect and admiration for the people who do the work. "Our



© Can Stock Photo / tashika

people are smart and hardworking,” she says. “They have to have so much strength and tenacity to get things done.”

Company management was supportive of Pizzey's climb through the ranks, allowing her to bring each of her three children to work for the first six months, and accommodating family commitments. “Holaday-Parks did everything they could for me,” she said. “They bent over backwards to ensure that I could succeed at work and at home. We have made similar accommodations for many people, which allows us to retain key employees, and lets them know they’re valued members of our team.”

Allowances made when Pizzey's children were young are part of a larger, over-arching workplace culture that sees life as a series of events, planned and unplanned, and that supports employees in tackling the repercussions of those events as they arise and in good faith.

“Cancer, aging parents, babies—we all have challenges,” says Pizzey.

Her hallmark tips for success in the industry and in business in general are plain: treat all people with respect and recognize your perspective is only one perspective. You aren't learning anything when you are talking, she adds. Do a good job, do it all the way through and finish well; take every opportunity to help other people.

These principles drive the workplace culture at Holaday-Parks.

“We don't have a lot of people doing the same job. We have ownership in the work we perform,” says Pizzey. “My boss is amazing and so gracious. He taught me to listen carefully to other people. By fully understanding issues, we have had great success finding individual solutions to life’s challenges.

“When you hire smart, dedicated people who care about the job, they will make it happen and you can trust them to get the job done.”

As a mid-sized company, it is possible to choose carefully who is hired and really pronounce the importance of work ethic, says Pizzey. She has been at Holaday-Parks since she was 22 so it is the only work culture she knows. “I am not sure you could do it on a giant scale,” she says. “In a company like ours we have low turnover. We know each other well. Those who aren't committed don't choose to stay.”

Pizzey encourages prospective workers to explore the construction industry and recognize the phenomenal opportunities offered in the office and union employment.

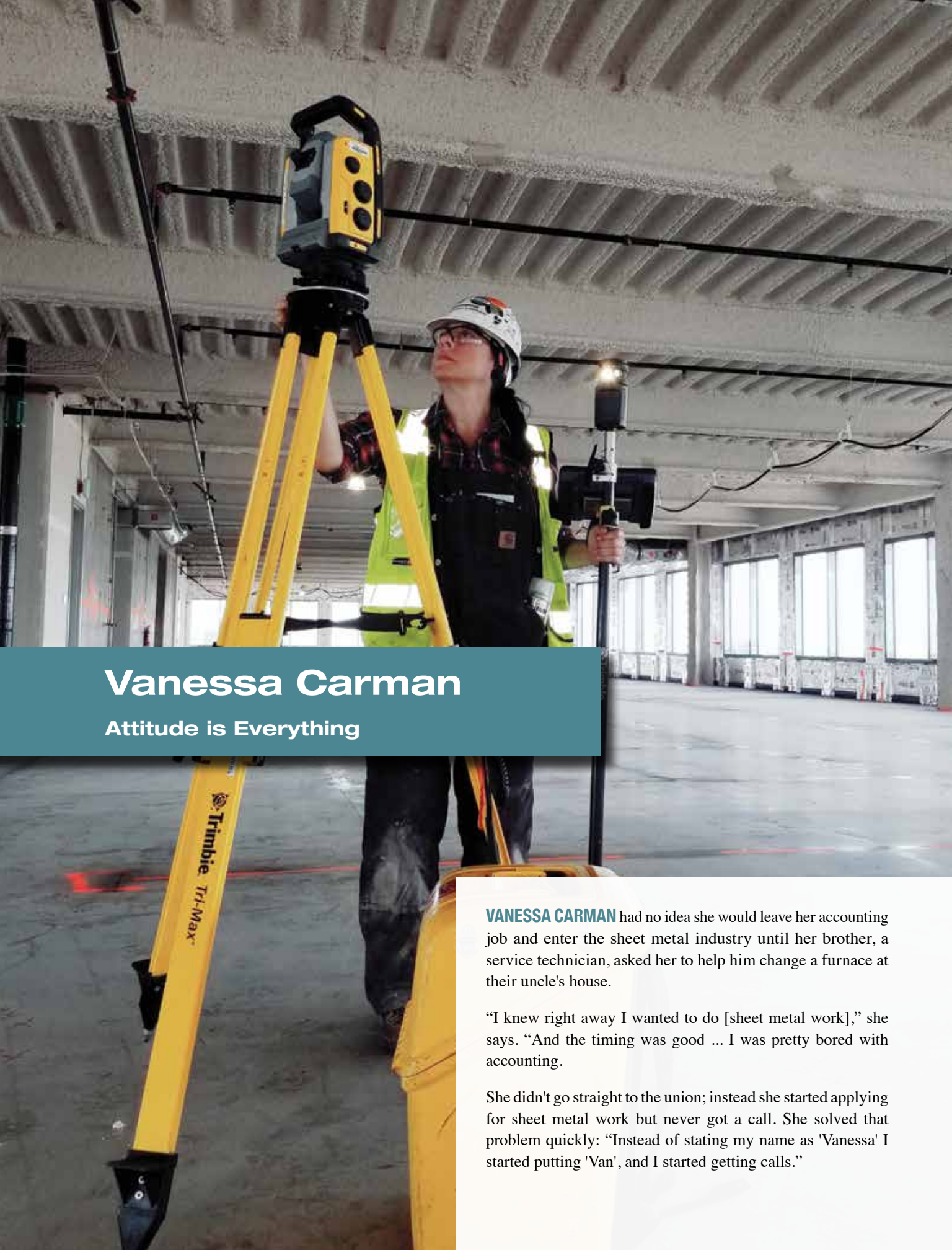
“You have to be smart and strong and it's true—it is a male-dominated field,” she says. “But they don't care about gender or race—they just want people who can do the work well.”

She has spoken to countless youth and impressed the fact that, yes, it is physically and mentally demanding work, but it is a no-debt and high paying environment.

“The unions are trying to add women and we just can't find them,” she says. “This job is a fantastic opportunity. I've rarely spoken to a union worker who said, 'I wish I had an office job.'”

For those who do want office jobs, construction offers those, too. “In that case you want a construction management, engineering or finance degree,” she says. “There are many possibilities. Set yourself up for success, and try to anticipate the moves you will have to make to get to meet your goals.

“Things don't just happen to you. If you want it, go for it, and don't get mad about road blocks. Figure out why they happen and adjust.” ■



# Vanessa Carman

Attitude is Everything

**VANESSA CARMAN** had no idea she would leave her accounting job and enter the sheet metal industry until her brother, a service technician, asked her to help him change a furnace at their uncle's house.

“I knew right away I wanted to do [sheet metal work],” she says. “And the timing was good ... I was pretty bored with accounting.

She didn't go straight to the union; instead she started applying for sheet metal work but never got a call. She solved that problem quickly: “Instead of stating my name as 'Vanessa' I started putting 'Van', and I started getting calls.”

Of course, she didn't get the first job she applied for. In fact, most of the call backs she received at the time were made out of curiosity. "Once they figured out I was a woman, some would call me in just to ridicule me," she says. "They would ask, 'Are you sure you can do this? It's pretty heavy work for a girl you know.'"

Good thing for Carman's competitive drive and complete inability to give up. "I couldn't quit," she says. "There are jerks everywhere. The attitude I take is that I'm not going to let them win. They won't take this opportunity from my family."

She started off in entry level warehouse positions, figuring she'd get trained as an installer. A non-union residential company gave her a start, but after she became a single mom to three she realized she needed the immense opportunities the union provides.

"I wanted to move forward in my career, and I wanted better insurance and benefits for my family," she says. "I started at the bottom and worked through a full five-year apprenticeship."

That was 15 years ago. Attitudes in the industry have changed dramatically, and as labor shortages loom and the call is out for diverse recruitment, women are finding their way into far more welcoming scenarios.

"The message now is, 'Women, come in. Let's diversify,'" says Carman. "The new generations in school are learning to be 'color blind' and they don't see race or gender. I believe there can be workforce equality in the future. The trades are not perfect out there and there are still people stuck in their ways and behaviors, but it is a lot better."

Carman loves working with her hands. She loves learning new things and rewarding work with diverse opportunities.

"Ours is the only trade where we fabricate what we install, so the job involves detailing, shop work, layout, installation, and specialty welding ... there are so many paths you can choose. It's up to you where you can go."

A living wage and the ability to provide for her family are also obvious draws to the sheet metal industry. To do that and love what she does make it an unbeatable industry, one she gives back to with leadership, determination, and a strong work ethic.

"It took a long time for me to find my voice," she says. "As the only woman on some jobs it was an isolated world and it took me some time to stand up for myself and demonstrate some leadership."

"I want everyone to succeed, but I have a passion for mentoring sisters," she says. "I understand the struggles women are

facing, and I recognize that it is important to recruit and retain the best people for the industry."

Carman's number one tip for facing challenges in the industry is to be strong with a positive attitude. "Through the years you pick your battles and that is what I have done," she says. "Continue to have good, positive attitude and your allies will recognize you are in it for the right reasons."

Her advice to contractors looking to recruit women is to ensure equality—no, seriously.

"We need a fair, competitive career path for everyone," she says. Another advantage would be a shift in how harassment and discrimination training is presented.

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***"Ours is the only trade where we fabricate what we install, so the job involves detailing, shop work, layout, installation, and specialty welding ... there are so many paths you can choose. It's up to you where you can go."***

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"I'm tired of hearing what we are supposed to do to report harassment," she says. "It shouldn't be our issue. We should encourage diversity training for everyone and focus on prevention of harassment and discrimination."

Apprentices should receive this message loud and clear on the first day, she adds, and companies could encourage mentor groups to help new recruits feel confident reaching for support.

"Good days and bad days are going to happen," is Carman's message to women considering a career in the sheet metal trade. "Don't just jump in for the wages. Research all trades, sign up for a pre-apprenticeship program, take a tour of your JATC, visit a job site or shop, and see if it is for you."

"Take care of your body and be prepared to use it—it is not always easy. Anyone can do it, but it is not for everyone," she says. "But this was my challenge and what I signed up for and I'm glad I did." ■

*Vanessa Carman also chairs the Women's Committee at Local 66, promoting recruitment, retention, and mentorship opportunities for women in sheet metal. See page 10 for more information about this and other similar programs.*

# CHELSEA REYNOLDS

## Fulfillment in Field Work



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**CHELSEA REYNOLDS** is an apprentice at Holaday-Parks and she has been around the block. After five years as a welder, she entered the sheet metal industry, where she has worked hard for her success and earned the pride she has in her accomplishments. Reynolds got her first taste of general trades in the metals shop in high school. Her teacher noticed she was really good and suggested Reynolds pursue something other than a four-year university course.

She went to Lake Washington Technical and entered the welding tech department. She graduated from there after two and half years with an associate of applied science in welding and fabrication technology.

She was doing a production weld job for about three years but it wasn't quite what she was looking for, so she decided to look for other options in the trade.

“My dad suggested I look into the sheet metal apprenticeship or pipe fitters because of the great benefits, retirement plan, and I could still use my welding skills while learning other things—make myself more valuable,” she says. “Not to mention that sheet metal sounded attractive because it ended up being much kinder to my body long term.”

She called the Local 66 union hall and scheduled a general knowledge test, took it, and passed and, “Ta-da! I made the list. Got through that bit of awesome and waited for that infamous call that said, 'Welcome new apprentice 2014'. Talk about a good way to start off the new year.”

Reynolds has been in the industry since, currently working as an apprentice for Holaday-Parks. Her big draw to the job is that she is on her feet, away from a desk, and in the field where she feels most comfortable.

“Fabricating things, making something with your hands is very gratifying,” says Reynolds. “At any time I can go driving and can point at one building or another and say, 'I was apart of that. I helped build it.'”

Welding was an important talent that served her well in her job search. “I was good and fast,” she says. “And I can fit in

all those tight/odd spaces the other guys can't. Not always fun but I get paid anyway.

“I believe in having fun at my job; a little humor goes a long way,” she says. “And most appreciate having a few laughs during the day. I suppose I stand out because I usually end up being the only lady on a crew or a job, but I don't mind it all that much. The camaraderie is fun.”

Her career choice has had its share of challenges, too. The “school part” can be challenging, and math has never been Reynolds' favorite subject. She has experienced sexual harassment, physically and verbally, and she's been asked to throw in a bad weld once in a while so she doesn't make the guys look bad. She's had a little trouble in her apprenticeship with not being given enough responsibility or the chance to advance offered to other students.

These incidences are no match for her tenacity. Reynolds is positive, strong, and finds camaraderie with her crew. “I'm not alone in the [schooling struggles] part,” she says. “My class is a pretty tight group. Most of the time the guys are good to me and if they're not they are reminded to treat me better or else.

“I've had some tough goings but you just have to keep pushing to get what you want. I'm fortunate enough to not have [harassment] happen on a regular basis, and the times that it did happen, my crew had my back, which is very reassuring that I don't have to stand alone.”

In 2015, Local 66 established a women's committee that offers support and mentorship for women in the sheet metal industry. This has been a source of help for Reynolds as she continues to navigate her successful place in the industry.

“I can talk to anyone of my fellow lady members who understand what it's like to be in this industry,” she says. “Especially if I'm not comfortable with discussing whatever happens with the guys or other male superiors.”

Reynolds encourages industry to promote the trades in

*Continued on page 23*





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# University of Washington: NanoEngineering & Sciences Building

By / Jessica Kirby

Project: NanoEngineering & Sciences Building, University of Washington, Seattle, WA

Architect: ZGF Architects LLP

Holaday-Parks: Mechanical Engineer

Hoffman Construction Company: General Contractor

Valley Electric: Electrical Contractor

Total Building Area: 78,000 square feet

Total Construction Cost: \$53,000,000

**Designed by ZGF Architects** and constructed by Hoffman Construction, the NanoEngineering and Sciences Building at the University of Washington in Seattle is phase two of a 168,000-square-foot complex equipped for the performance of organic, inorganic, and biomolecular synthesis. The building is designed for low vibrations and electromagnetic interference, and features 43,000 square feet of research space and 8,300 square feet of learning space.

The building achieved high energy efficiency and LEED Gold certified research lab status—a challenging task given safety and programmatic requirements. It features a naturally ventilated laboratory to reduce air changes by 40 percent, water-cooled chilled beams, and chilled sails provide temperature control.

The build comprised a new building being erected adjacent to and joined with an existing building – the Molecular Engineering

and Sciences Building – which required a well-coordinated construction schedule and, for Holaday-Parks, mechanical engineers on the project, it meant intertwined mechanical systems on a small footprint.

“There was process water, natural gas, compressed air, and steam circulating and plumbing between the buildings,” says Anita Dias, project manager for the NanoES building. “We also started with the idea of doing the shell and core without any tenant improvements.”

Things didn't quite work out as planned. When Dias' team started the detailing process, the design wasn't yet finished. “We decided at the end of the job that waiting three months would have significantly reduced some of the design challenges, but as it happened we were in the ground early under a tight schedule.”



The six-level project included a basement where the mechanical room is located, four occupied floors, and a roof. The crew finished the ground level and had just moved up to second when it had to go back down for the tenant improvements in the labs. “I don't think we ever had a total set of drawings,” says Dias.

The build took just over a year, wrapping up in 2017.

A key challenge for the technicians was the size of the mechanical room—at 20 x 50 the immense amount of equipment was a tight squeeze. “Everything had to be dropped down a shaft because the building had closed up before we were able to get it in there,” says Dias.

Another was completing the plumbing system on the new build, but not the existing structure. It was discovered late in the process that the plumbing system installed in the old building didn't have the pressure to get to the very last lab on the top floor.

“It just wasn't designed to do that,” says Dias. “We found out late, but our plumbing and HVAC foremen on site were some of the best we have, so they could handle the challenge.”

The company also installed some radiant hangers for the first time, and some of the more familiar systems were replaced by newer technologies chosen for their aesthetic appeal.

Some of the classrooms featured significant glazing, but no plan for coverings—this was cause for concern for heating and cooling. “We added extra legs to radiant heaters to make sure they worked,” says Dias. “The fans were also upsized, the noise level of which was still under discussion on the final walkthrough.

“We finished and met all the challenges that arose along the way,” says Dias. “It was a great learning experience for everyone and a success for the university. The foremen and the entire Holaday-Parks team are proud of this project.” ■

### Autodesk's Inside the Factory Beta Testing Event in Shanghai, China

Liz Diesner, Local 32 pipefitter with Holaday-Parks, was invited to Autodesk's *Inside the Factory* beta testing event in Shanghai, China. She was one of 16 participants selected to help test and provide feedback on their various Revit products still in development.

Each participant brought a presentation of a completed project to demonstrate Revit's use in the real world. Diesner showcased the UW NanoEngineering and Sciences Building in Seattle, WA. The project featured unique AHU vestibules that were modeled, spooled, then built in Holaday-Parks' shop and flown up to the roof to be connected with other vestibules/AHU units.

“This took a lot of coordination with the AHU manufacturer as well as structural engineering review,” says Diesner. “The mechanical room was one of the largest I've ever worked on, with a multitude of different systems: heating water, chilled water, process cooling, process heating, low pressure and high pressure steam/condensate, and clean steam.”

Diesner has worked in the field, run some small jobs, and worked out of a service van. In 2008, she came into the office to become a detailer.

“Most big jobs are now requiring BIM coordination,” she says. “Usually we meet once a week (online) and fly through the model. All trades coordinate with each other to build a clash-free model. Then we issue drawings for construction.”

The NanoES building was Diesner's first project using Revit, and she enjoyed it despite the learning curve. She learned a great deal at the session in Shanghai and viewed presentations on some fantastic projects ranging in size and scope from hydrodams to a church in Utah.

Being the only tradesperson among engineers, she brought a unique end user perspective to the event. “My feedback was specific to piping, whereas the mechanical engineers look at the whole building,” she says. “I was honored to be a part of it.”

## MIDTERM ELECTIONS OFFER CHOICES AND RISKS

On August 7 Washington voters will narrow the field of candidates in state and federal primary elections to get down to the top two. Washington was one of the first states in the nation to adopt a top two system. The two candidates with the highest vote totals move on to the General Election regardless of party affiliation. The general election is November 6.

Under the top two system, candidates are allowed wide discretion in naming their party affiliation. Most candidates stick with “Prefers Democrat Party” or “Prefers Republican Party”. But this year others have chosen minor parties or ones that are unique to them: “Freedom Socialist Party,” “Green Party,” “Independent Party,” “Moderate GOP Party,” “Trump Populist Party,” “Progressive Party,” “Neither Major Party,” and “No Party”. Just to name a few.

On the federal level, all ten Congressional seats and one U.S. Senate seat – Senator Maria Cantwell’s seat – are up for election. The retirement of Rep. Dave Reichert has made the 8th District a competitive Congressional seat this year. The 8th district stretches from east King and Pierce County across the Cascades and includes Chelan and Kittitas Counties. Dino Rossi is the leading Republican in the race and there are three Democrats vying for the other spot—Shannon Hader, Jason Rittenreiser, and Kim Schrier.

In the 5th District on the east side of the state, long serving Rep. Cathy McMorris Rogers is in a tough race against Democrat opponent, Lisa Brown. Ms. Brown is a former state senator and well known in the Spokane area. The 5th District runs along the eastern edge of the state, covering 10 counties from the Canadian border to the Oregon border. Rep. McMorris-Rogers is part of the House Republican leadership team.

On the state legislative level, the Democrats control both the House and the Senate by slim margins. The Democrats in the House have a two-vote advantage with a 50 to 48 split. The Senate Democrats are in control by only one vote, 25 to 24. The Democrats gained control from the Republicans in 2018 when a Democrat won the special election to fill Senator Andy Hill’s seat. Senator Hill succumbed to cancer in 2016. Dino Rossi filled in for him in the 2017 session.

All 98 House members are up for election this year. Fourteen current members have decided not to run again. Of the 14, four are Democrats, all from relatively safe Democrat districts. Ten are Republicans, a few of them from swing districts. Two notable members are departing. Judy Clibborn, Democrat from Mercer Island and Chair of House Transportation, and House Republican Leader Dan Kristiansen from Snohomish County have both decided to retire.

Twenty-four of the 49 Senators are up for election this year.



By / Kathleen Collins,  
SMACNA Legislative Consultant

Of the 24, three Senators are not returning. Seattle Senator Sharon Nelson, Democrat Majority Leader, is among them. Her retirement opens up the top spot for another Democrat, assuming they retain control. There are at least five Democrat senators rumored to be interested in the Majority Leader job.

There are some interesting races to watch that could affect the balance of power in the House and Senate. The House Republicans have to retain both open House seats in the 25th (Puyallup and Pierce County) and the open seat in the 18th District (east Vancouver). House Republicans are going on the offense in districts along the coast and in the urban fringe around Puget Sound, hoping to flip some of these Democrat districts. In the Senate the Republicans need to win one seat now held by a Democrat. Since most of the Democrats who are up are from safe districts, that one seat could be challenging to get.

Regardless of which party controls, it is likely there will still be narrow margins in both the House and the Senate. Don’t forget to vote in the primary on August 7. ■

*SMACNA will keep you updated on legislative issues as they evolve during session. If you have questions, please contact the SMACNA office.*

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## WISHA/DOSH SAFETY VIOLATIONS: FROM DE-MINIMUS THROUGH PERSONAL CRIMINAL CHARGES

The Department of Labor & Industries (L&I) is responsible for enforcing workplace safety rules under the Washington Industrial Safety & Health Act (WISHA). It is authorized to issue citations for civil penalties in the four following categories:

- **De-minimus citations** – The violation has no direct or immediate relationship to safety or health.
- **General citations** – The violation does not pose a risk of serious bodily harm.
- **Serious citations** – The employer knew or should have known of the hazardous conduct or condition, and that there is a “substantial probability that death or serious physical harm could result” from the code violation.
- **Willful citations** – There was some voluntary action performed with intentional disregard of or plain indifference to safety regulations.

WISHA-related RCWs also allow for L&I to issue misdemeanor criminal sanctions for the following:

- Providing unauthorized advance notice of an inspection;
- Knowingly making false statements in connection to an inspection or citation;
- Disregarding an order of immediate restraint; or
- Intentionally damaging or destroying a necessary safety device.

A standard “worst case scenario” for Washington employers is the case of Bradley Hogue. In 2014, Hogue was killed in a bark blower, resulting in misdemeanor charges for his employer, Pacific Topsoils. The misdemeanor charge was filed against the company itself and stemmed from “willfully and knowingly” violating safety standards under RCW 49.17.190 (WISHA: Violations-Criminal Penalties). The Department issued the citations and referred the matter to the King County Prosecutor. The result was that the company pled guilty and



By / Karen Galipeau Forner

paid \$100,000.00 in criminal penalties and \$100,000.00 in civil penalties for the underlying safety violations.

A recent case, however, has marked a stark shift in how egregious safety violations may result in personal criminal charges. In 2016, Harold Felton was killed when a trench in which he was working collapsed. L&I cited his employer, Alki Construction, LLC, for five serious violations and one willful violation, with a total civil penalty of \$51,500.00. More important that these WISHA violations, however, is that King County filed a criminal charge against the individual, Phillip Numrich. Numrich was the owner of Alki Construction and at the time of Felton’s death was the person onsite responsible for overseeing the work, and he was charged with the felony criminal charge of manslaughter in the second degree in connection to this incident. This charge did not arise from the WISHA-related RCWs, but rather from RCW 9A.32.070 (Homicide: Manslaughter in the second degree).

This marks the first time an employer has faced felony charges in Washington state for a workplace fatality. And because Numrich was charged not in his capacity as the employer, but rather in his capacity as the “competent person onsite,” this also opens the door to potential criminal liability for other “competent person” employees on a worksite if there is a willful violation.

While the outcome of Numrich’s case is still unknown, Washington employers need to understand the significance of his felony charge. As such, it is more important than ever for employers to be diligent and proactive in their safety programs and consider seeking legal advice whenever faced with any open investigation. ■

*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.*

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## SEISMIC RESTRAINT AND VIBRATION ISOLATION FOR HEALTHCARE FACILITIES

### Why is Seismic Restraint Needed?

For hospitals and healthcare facilities, the damaging effects of earthquakes are of significant concern throughout North America. The Building Code mandates the use of seismic restraint for hospital and healthcare facilities even in areas with relatively low seismic activity. Earthquake damage to inadequately restrained piping and duct systems within and on buildings can be extensive even when there is no visible structural damage to the building. Piping and mechanical systems knocked off of their supporting structures due to earthquake-related building movement can threaten life, property, and the ability of a hospital to operate. The cost of properly restraining your equipment is insignificant when compared to the costs associated with repair, replacement, and system downtime as a result of seismic damage.

This article presents an overview approach to designing and applying seismic restraint systems. These systems serve to limit the movement of equipment and to keep the equipment captive during a seismic event.

A thorough analysis of seismic restraint hardware and seismically rated vibration isolators requires the consideration of four aspects of the system:

#### 1) Attachment of the Equipment to the Restraint:

The equipment must be securely attached to the restraint system. This attachment must have sufficient strength to withstand the imposed seismic forces.

#### 2) Restraint Design:

The strength of the seismic restraint systems are designed to withstand the imposed seismic forces.

#### 3) Attachment of Restraint to Building Structure:

This attachment is typically via bolts, welds, or anchors. In addition, the building attachment interface must be reviewed by the structural engineer of record to ensure it meets seismic codes in the jurisdiction.

#### 4) Equipment Fragility:

The ability of the equipment to continue to operate after being subjected to seismic force. Fragility information must be obtained from the equipment manufacturer .

In hospitals and healthcare facilities, the National Building Code, requires some pipe and duct systems to remain in operation for life-safety purposes following an earthquake. These systems are assigned a Component Importance Factor of 1.5. Life-safety systems typically include but are not limited to smoke removal and fresh air ventilation systems, infectious disease control systems, and systems that control clean rooms and surgical



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

suites. Duct systems that are not considered life-safety but whose failure could cause failure also need to be restrained.

The most frequent occurrence of these failures has been in systems that were not restrained to the standards set forth in the building codes or the guidelines issued by SMACNA .

In applications where significant motion can occur, the restraint requirements for ductwork systems are to be adequately sized in both the lateral and axial directions. These restraints must be used with spacings short enough to prevent local failures in the duct runs between restraints. In the field, seismic restraint systems must attach and interface with numerous other systems. It is recommended that the seismic restraint be installed after the installation of the mechanical systems. The *SMACNA Seismic Restraint Manual* offers general guidance for field installation. It includes tables with maximum spacing and restraint component sizes for various sizes of ductwork and in various seismic zones. The SMACNA manual is easily understood and can be effectively used by installation contractors. The engineers should verify that the contractors follow this manual.

Typically ductwork systems are restrained either with cable restraints or rigid braces that run upwards at an angle. Because these links run at an angle, the application of a horizontal load generates a vertical load component on the hanger rod that supports the ductwork. This vertical component can frequently be as large as double the horizontal force. This vertical force needs to be taken into account when sizing the anchorage. For rigid pipe and duct bracing the SMACNA guidelines tabulate the sizes needed for various configurations. ■

### CONTRACTORS AND SUPPLIERS

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THE CHANGING FACE OF LABOR

*continued from page 16*

Local 66 also has a women's committee and through the JATC, labor and management established a mentorship program to support women in the trade. The JATC came on board because it needed a good step for retaining women and mentorship proved a key element in keeping women in the trade.

“When we decided to have the mentoring program for the women's committee, we reached out to journey-level women,” says Committee Chair, and Sheet Metal Foreman, Vanessa Carman. There was a two-day training that involved the mentors, labor, and management, and established the program's structure and roll out.

The group's mission is to recruit and retain women to the sheet metal industry. Journey-level women are paired with one or two mentees each at a kick-off lunch and “speed dating style” meet and greet.

“There are monthly check-ins and meetings, and most importantly, the mentees have an open line to reach out to a mentor if they have a problem,” says Carman.

The women's committee's on-going initiatives include attending career fairs, volunteerism in union activities, and active outreach. Moving forward, Carman foresees pregnancy and maternity leave as an issue the union will have to deal with. “It's out there,” she says. “Iron workers have maternity leave. There will certainly be discussion among all the trades how we will handle this.”

Simon has some advice for young women seeking a career in the sheet metal industry and for contractors looking to recruit a more diverse workforce.

“To a young woman, it's an exciting and dynamic industry. Every day it is something different—you are never bored. Women project managers handle stress better, multitask, and take care of foreman because they care about them. There is a lot of potential and plenty of room for you and if you need help, I am here to help for mentorship.

“We can help contractors with support documents to show how a diverse workforce will be more productive and make you more money,” she says. “If you have a woman, have that person help when recruiting. Don't be afraid to give her opportunities.

“It changes the dynamic and will help make you a better contractor.” ■

CHELSEA REYNOLDS

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school, or have trade-oriented classes so students have a way of exploring options other than university. “Not everyone is meant to be in an office,” she says. “Working with your hands is pretty cool. Also, I'm not going to lie, the money part is pretty sweet, too.”

Benefits like health insurance and job security make the trades a no-brainer for Reynolds, who encourages more women to look into sheet metal as a career option, but only if they are tough enough.

“You have to have a thick skin ... this is an industry that will chew you up and spit you out,” she says. “This is not for the princess types or anyone afraid of dirt and grime.”

Success means learning to find middle ground with your crews and letting superiors know you are there eager to work and learn.

“I have faired better than most because I've had more time in the trades and I'm use to certain kinds of personalities,” she says. “As modern as times are there are still a few narrow-minded guys out there who think women don't belong, which is their opinion, a crap one, too.

Just be tough and show them up with skills and punctuality.” ■

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