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Major Mechanical Leverages New Uponor Kitting Service

BY JOHN O'REILLY

EDEN PRAIRIE, MN — Among the many critical challenges facing a plumbing foreman on a multifamily job site is the need to maintain efficient and consistent installation methods across the entire project. This applies as much or more to the rough-in plumbing as to the finishing trim: the larger the job, the bigger the challenge.

"Every plumber has a better ➤ Turn to Kitting, page 30



Major Mechanical installer expanding PEX pipe with the Expander Tool before inserting a fitting.

Study: Repeals of Prevailing Wage Laws Cost Workers, Taxpayers

SPECIAL TO CONTRACTOR

LA GRANGE, IL — Six states that repealed their prevailing wage laws between 2015 and 2018 have experienced slower construction employment, decreased wage growth, lower workforce productivity growth, increased construction jobsite fatalities, and less market share for in-state contractors, compared to states that maintained their prevailing wage laws according to new research by the Illinois Economic Policy Institute (ILEPI) and Project for Middle Class Renewal (PMCR) at the University of Illinois at Urbana-Champaign.

➤ Turn to Study, page 10



Xylem To Acquire Evoqua in \$7.5 Billion All-Stock Transaction

■ SPECIAL TO CONTRACTOR I

WASHINGTON, DC — Xylem Inc. (NYSE: XYL), a leading global water technology company ("Xylem"), and Evoqua (NYSE: AOUA), a leader in mission-critical water treatment solutions and services, today announced they have entered into a definitive agreement under which Xylem will acquire Evoqua in an all-stock transaction that reflects



an implied enterprise value of approximately \$7.5 billion.

As water risks rise in global importance, this transaction unites two companies with a shared

➤ Turn toXylem, page 32

CONTRACTOR INFOCUS

What is the biggest challenge facing your business in 2023?



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Source: 2022 PlanetHub Construction Industry Report



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TECHNOLOGY

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Any Hour Group Grows Home Services Leadership with Seven New Partnerships

■ SPECIAL TO CONTRACTOR

OREM, UT — /PRNewswire/
— The Any Hour Group ("Any Hour" or "the Company"), a leading provider of home services, today announced partnerships with seven businesses—3 Mountains Plumbing ("3 Mountains"),



Connors Plumbing & Heating ("Connors"), EJ Plumbing ("EJ"), Oak Island Heating & Air Conditioning ("Oak Island"), Pacific Aire ("Pacific Aire"), We Care Plumbing, Heating, & Air ("We Care"), and Wizard

> Turn to Any Hour, page 8

NTI Boilers Sponsors Team in Iconic Alaskan Iditarod Sled Dog Race

■ SPECIAL TO CONTRACTOR

SAINT JOHN, NB, CANADA — NTI Boilers Inc. is sponsoring the Seeing Double Sled Dog Racing team for the 2023 Iditarod sled dog race. Known as The Last Great Race On Earth, the event begins Mar. 4, 2023, in Anchorage, Alaska with participants racing 1,000 miles to Nome, Alaska.

This is NTI's second year sponsoring the race, a proud tradition that

➤ Turn to NTI, page 12



NTI will be a corporate sponsor of musher twins Kristy and Anna Berington of Seeing Double Sled Dog Racing.

US Green Building Council Announces 2022 Top 10 States for Green Building

■ SPECIAL TO CONTRACTOR

WASHINGTON, DC — The U.S. Green Building Council (USGBC) has released its annual ranking of U.S. states leading the way on green building, with Massachusetts topping the list. The USGBC ranking is based on LEED-certified gross square footage per capita over the past

Source: Bureau of Labor Statistics

year. The LEED rating system is the world's most widely used green building program and was created by USGBC as a leader-ship standard defining best practices for healthy, highperforming green buildings.

"It was a strong year for LEED > Turn to USGBC, page 12

CONTRACTOR INFOCUS **Construction Employment Growth:** December 2021 vs. December 2022 Construction 3.1% Nonresidential* 3 0% **Nonresidential Building** 3.6% **Nonresidential STC** 3.2% **Heavy & Civil Engineering** 1.9% Residential** 3.2% **Residential Building** 3.2% **Residential STC** 3.1% 2.0 3.0 4.0 12 Month % change *Includes nonresidential building, nonresidential STC, and heavy and civil engineering *Includes residential building and residential STC

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In Brief

Michael Kennedy, Jr., CEO of **KAI Enterprises** and **The UP Companies** has had the honor of being named a 2023 St. Louis Titan 100—a program recognizing the area's most accomplished C-level executives for their exceptional leadership, vision and passion. Collectively, the 2023 St. Louis Titan 100 and their companies employ more than 94,000 individuals and generate \$28 billion dollars in annual revenues.

OceanSound Partners portfolio company **RMA Companies** has announced that it has acquired **C Below Subsurface Imaging**, a provider of technology-enabled underground utility locating services. As part of the transaction, C Below's operations will be merged with RMA's SiteScan Subsurface Imaging business.

Matco-Norca, LLC, recently expanded their website portal to customers. The web portal allows users to check pricing and inventory, review and create quotes, access orders and bids, track shipments and more. In the past only rep agencies and internal staff had access to the portal however, customers have increasingly been asking for access.

Business Development

Resources has announced a new three-part series to help business owners set their companies up for success in 2023. The Owner Power Up series consists of three virtual courses scheduled for Feb. 16, March 23, and April 20. Each three-hour course delivers targeted content designed to help owners prepare for the evolution of their role as their companies grow.

Built In today announced that **Interplay Learning**, a provider of online and VR training for the skilled trades, was honored in its 2023 Best Places to Work Awards. Interplay Learning earned a place on Austin's Best Midsize Places to Work list. The annual awards program includes companies of all sizes in large markets across the US.

NTI Boilers Inc. has announced the addition of Kyle Silvio to its growing team. Silvio is based in central Massachusetts and serves as Regional Sales Manager in the Massachusetts, Rhode Island and Connecticut areas, helping to support NTI's growing sales and technical needs in southern New England.

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- Oatey Announces Personnel Promotions
- Dept. of Labor Announces Annual Adjustments to OSHA Civil Penalties for 2023
- IAPMO, UA Publish Fourth Edition of Backflow Prevention Reference Manual
- Social Equity Key to Boosting Built Environment Workforce

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INDUSTRY PERSPECTIVES

- Want to know what is on the mind of Ed O'Connell, business coach and consultant?
- ► Want to know about how to get the flow rates right in hydronics from master trainer Steve Swanson?
- Want to know what the 14 characteristics are of a professional plumbing company? Matt Michel will tell you.

If so, our Industry Perspectives page is the place for you! Visit Industry Perspectives today at contractormag.com/industry-perspectives-0

Want to converse with experts in the plumbing and hydronics industries? Then check out CONTRACTOR's Industry Perspectives, serving up thoughtful, conversational content from the industry experts you have gotten to know so well at www.Contractormag.com.

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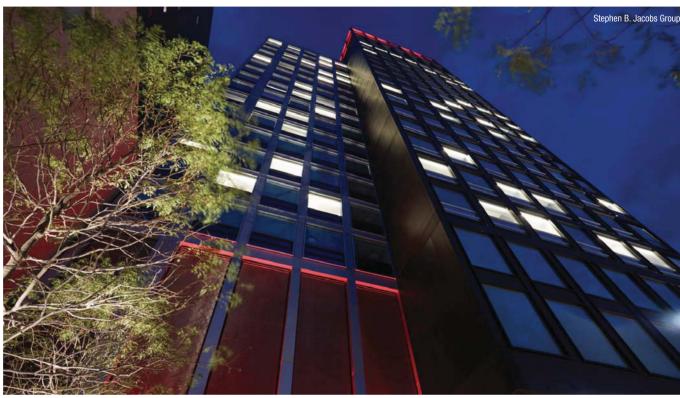
Modular Construction and the Future of Building

BY JOHN MESENBRINK EDITOR-AT-LARGE I

he concept of modular construction may seem foreign to some, but it is gaining traction as a safe and efficient means of building. In fact, COVID accelerated the pace of prefabrication and modular construction, and according to a recent Dodge Data & Analytics SmartMarket Report "Prefabrication and Modular Construction 2020," growth is seen among those doing modular construction in the use of full volumetric approach, in which entire parts of buildings-such as bathrooms or hotel and hospital rooms-are delivered preconstructed onsite and assembled together.

The report states that contractors agree that both prefab and modular construction are providing improvements to cost, schedule, quality and safety performance, productivity, client satisfaction and the ability to reduce waste. Expanded use of both approaches in the near future has been forecast as the benefits are more widely measured, owners become comfortable with the processes and outcomes, and the industry develops more resources to support these applications.

McKinsey and Company, a global management consulting firm, projects that modular construction could claim \$130 billion of the market by 2030 in the United States and Europe at moderate penetration, delivering annual cost



The citizenM Bowery Hotel—the tallest modular hotel in the world.

savings of \$225 billion. Furthermore, modular construction could scale to an industry that represents more than \$100 billion in U.S. and European real estate, delivering \$20 billion in annual savings.

The Hill Group, a mechanical contractor out of Franklin Park, IL, has leaned on modular construction for

nearly a decade. "We have seen growth in the modular industry for over a decade, and healthcare has been one of the largest contributors. As more owners understand the benefits, more of the industry is looking for modular opportunities on each project," says Kari Holtz, project manager, Hill Mechanical.

According to Holtz, other benefits The Hill Group has found in utilizing modular construction for a jobsite include:

- Higher quality materials (used in some cases to withstand the shipment)
- Increase in safety
- Early involvement with AHJ (Authority Having Jurisdiction)
- Dust Mitigation
- On-site congestion reduction (Primarily for existing buildings)
- Productivity from crews and smaller crews required
- Reduction of waste
- Early design and acceptance in the manufacturing plant reduces the on-site punch list and change orders



Originally designed as a conventional poured-in-place concrete building, citizenM decided to have its Bowery Hotel building in New York redesigned

Turn to Modular, page 28



A modular bathroom unit being transported from its assembly site to a shipping area.



A modular bathroom with a view at the citizenM Bowery Hotel.

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Any Hour Group Grows with Seven New Partnerships

➤ Continued from page 3

Plumbing ("Wizard")—to further expand its operations into new markets, including California, Oregon, and Minnesota. Financial terms of the transactions were not disclosed.

Founded in 1961, Any Hour offers homeowners peace of mind through

a full suite of high-quality HVAC, plumbing, and electrical services. The Company has achieved a market-leading position through rapid organic growth, and in July 2021 partnered with Knox Lane, a San Francisco-based private equity firm, to accelerate Any Hour's trajectory.

By partnering with We Care, Oak Island and Pacific Aire, Any Hour has expanded into the large and growing Southern California market, including San Diego, Santa Barbara, Ventura, and Orange County. Any Hour is also growing its presence in California through its partnerships with EJ and

Wizard in Santa Clara and San Mateo, respectively.

In addition, through its partnership with 3 Mountains, Any Hour has officially established a footprint in Oregon, another attractive west coast market, while adding a second Midwest partnership with Waseca, Minnesota-based Connors. Each business will benefit from Any Hour's extensive capabilities in digital marketing, recruitment, training, and operations, while retaining its respective brand, headquarters, and management team.

Founded in 1961,
The Any Hour
Group is the
market-leading
home services
company in the
state of Utah.

Wyatt Hepworth and Jeremy Hansen, CEO and COO of Any Hour, respectively, said, "Any Hour has experienced significant growth over the past 18 months as we continue to execute on our vision of building a differentiated, strategic platform for home services in the Western United States. We are encouraged by the progress we've made and look forward to joining forces with such a talented group of operators. Our team is excited to establish a strong presence in several key new geographies through these partnerships, which we intend to build upon further."

Dustin Van Orman, President of Business Development and M&A for Any Hour, added, "We're honored to be able to partner with like-minded owners and operators that have built strong businesses through a relentless commitment to their customers and employees. We're excited to provide additional support and resources to these operators so that they can build on their respective momentum and serve more customers in these key markets."

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Repeal of Prevailing Wage Laws Cost Workers, Taxpayers

➤ Continued from page 1

Read the Study, The Economic Impact of Prevailing Wage Law Repeals on Construction Market Outcomes: Evidence from Repeals Between 2015 and 2018.

Prevailing wage laws establish minimum wages and workforce development contributions for workers on publicly funded construction projects like roads, bridges, and schools. They are based on what workers in the local community are most often paid for comparable work.

As of January 2023, a total of 28 states plus the District of Columbia have prevailing wage laws covering state and local construction expenditures, with federal projects governed by the Davis-Bacon Act.

Between 2015 and 2018, Indiana, West Virginia, Kentucky, Wisconsin, Michigan, and Arkansas each repealed their state prevailing wage laws. In this study, ILEPI and PMCR researchers examined pre-repeal and post-repeal data from the U.S. Census Bureau (2012 and 2017) and the Bureau of Labor Statistics (2014 and 2019) to compare construction market outcomes in the recent repeal states against those that maintained their prevailing wage laws.

Overall, the data linked repeal with 4%-13% percent slower income growth for construction workers alongside a decrease in health insurance coverage, an increase in food stamp reliance, and a 14% higher on-the-job fatality rate. Construction worker productivity also fell behind in the repeal states.

"Pro-repeal governors and state legislatures promised that repeal would savings for taxpayers," said ILEPI Executive Director and study coauthor

grow their state economies and deliver (85%) from respected economists have concluded that prevailing wage laws have no effect on overall construction

Between 2015 and 2018, six states eliminated minimum standards for skilled trades workers.

Table source: ILEPI

Construction Industry Metric	Impact of Repeal
Contruction worker wage growth	-4% to -13%
Contruction worker benefits growth	-7% to -10%
Contruction worker health insurance coverage rates	-2%
Contruction worker wage reliance on food stamps	-2%
Contruction worker employment growth	-11% to -14%
Total construction worker hours growth	-6% to -9%
Growth in construction worker productivity per hour	-1%
Construction industry on-the-job fatality rate	+14%
Racial diversity of the construction workforce	No change
Market sanare of in=state contractors	-1% to -2%

201	7 Economic Census Construction Metrics, by State Prevailing Wage Status	Math	United States Totals	States Prevailing Wage
Α	New value of construction work		\$1,574,236,474,000	\$1,023,597,882,000
В	Blue-collar construction worker wages		\$276,213,296,000	\$184,710,589,000
С	Wages for white-collar employees		\$122,602,241,000	\$81,743,101,000
D	Blue-collar worker share of wages	B ÷ (B + C)	69%	69%
Е	Total fringe benefits		\$115,233,915,000	\$78,835,817,000
F	Blue-collar worker fringe benefits	E xD	\$79,809,176,000	\$54,650,435,000
G	Labor costs as share of total costs	(B + F) ÷ A	23%	23%

Impact on Repeal on In-State Contractor	Value of Construction	Net Impact of	Estimated Change
Market Value	Work in 2017	Repeal	in In-State Revenue
Repeal states in 2017: IN, WV, KY, AR, WI	\$60,499,416,000	-1.9%	-\$1,130,214,000
Full and partial repeal states in 2017: IN, WV, KY, AR, WI	\$108,517,056,000	-1.3%	-\$1,417,163,000

Frank Manzo IV. "There is zero real-world evidence that any such benefits ever materialized, and this study details how repeal has had the added impact of undermining job quality for the construction workforce."

Researchers noted that 17 of the last 20 peer-reviewed academic studies

costs because labor comprises such a low share of overall project expenditures. Additionally, contractors tend to offset market-rate wages with savings tied to higher workforce productivity, improved safety outcomes, and more efficient use of fuels and materials.

Recent analyses of pre- and post-

PHCC Announces Change in Staff Leadership

As of Jan. 6, 2023, Mark Ingrao is no longer the chief executive officer of the Plumbing-Heating-Cooling Contractors—National Association (PHCC). In a statement announcing the change, the association wished him the best in his future endeavors.

Former PHCC Educational Foundation Chief Operating Officer Cindy Sheridan, CAE, has been named PHCC's interim Chief Executive Officer. Sheridan joined PHCC as the membership director in 2000 and became the Foundation



Chief Operating Officer in 2010.

"We are delighted to have Cindy serve as staff leader for our PHCC team," said PHCC President Dave Frame. "She is a well-respected professional who knows our association and industry well. Her extensive knowledge and expertise will help guide us as we collaborate together to build the future for our industry."

Sheridan is a graduate of West Virginia University with a degree in Speech-Language Pathology.

repeal project costs in the states of Indiana, Wisconsin, and West Virginia have reached similar conclusions, and have also found that the repeals failed to increase bid competition on public works projects.

"While paying below-market rate wages fails to save taxpayer dollars on public projects, it does often translate into more safety problems on jobsites, a less reliable supply of the skilled workers to build and maintain critical infrastructure, and more construction workers reliant on welfare programs," added study coauthor Dr. Larissa Petrucci. "Worse, the data shows that repeal states are collectively shrinking the market share of their own local construction businesses by billions of dollars each year, while stifling job growth in this critical sec-

> tor of the economy by as much as 14%."

> With the U.S. Congress recently approving trillions of dollars in new infrastructure investments, contractors across the country struggling with labor

shortages, and infl3ation shrinking the value of workers' paychecks, researchers encouraged repeal states to reconsider their prevailing wage policies. "Prevailing wage laws strengthen the construction industry as an engine of economic growth, boost job quality, and improve the labor market competitiveness of these in-demand careers," added University of Illinois at Urbana-Champaign professor, PMCR Director, and study coauthor Dr. Robert Bruno. "Repeal of prevailing wage fails to save taxpayers any money. Worse, it creates unnecessary and counter-productive hardships for blue-collar workers struggling to keep up with rising costs, for construction firms struggling to win bids and attract qualified craft professionals to fill open positions, and for the communities relying on both to get build vital public infrastructure projects right, on-time, and safely."

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*Comparing 66-gallon heat pump against pre-2015 similarly sized standard electric using DOE EF to UEF conversion rates. Savings may vary.

USGBC Announces 2022 Top 10 States for Green Building

➤ Continued from page 3

certifications across the US as companies and governments embrace LEED as a tool for meeting ESG goals and organizational commitments to climate action, occupant wellbeing and resource efficiency," said Peter Templeton, USGBC president and CEO. "LEED buildings are environmentally friendly, cutting their emissions and waste, and use less energy and water. At the same time, they also help reduce operational and maintenance costs, contributing to the bottom line."

The states following Massachusetts—where 96 buildings encompassing over 26 million square feet were LEED-certified in 2022, equating to

Rank	State	Projects	Gross area (SqFt)	2022 GSF Per Capita
*	District of Columbia	115	31,759,516	46.06
1	Massachusetts	96	26,442,008	3.76
2	Illinois	91	44,577,321	3.48
3	New York	142	64,042,120	3.17
4	California	386	96,457,139	2.44
5	Maryland	80	14,769,661	2.39
6	Georgia	66	24,068,422	2.25
7	Colorado	59	12,532,909	2.17
8	Virginia	95	16,289,394	1.89
9	Texas	174	48,717,532	1.67
10	Oregon	36	6,066,035	1.43 USGBC

nearly 3.7 LEED-certified square feet per resident—were Illinois (3.47 square feet per capita), New York (3.17 square feet per capita), California (2.43 square feet per capita), and Maryland (2.39 square feet per capita). As a federal territory, Washington, DC, does not appear in the official top 10 list of states, but it consistently leads the nation in LEED-certified square footage per capita, in part because of the federal government and District's ongoing commitments to

green building. In 2022, the nation's capital certified over 46 square feet of space per resident across 115 green building projects.

The full rankings:

In 2022, the top 10 states certified 1,225 projects and nearly 353 million gross square feet under LEED.

Since it was first established in 2000, LEED's metrics-based system has set the standard for healthy, resilient, green buildings. In 2022, USGBC surpassed 100,000 LEED-certified projects globally, totaling more than 11 billion certified gross square feet.

Additional information on the 2022 rankings, along with a listing of notable projects, can be found on the USGBC's Top 10 States for LEED page.

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General

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NTI Boilers Sponsors Iconic Alaskan Iditarod Sled Dog Race

➤ Continued from page 3

celebrates the role sled dogs played in the delivery of vital medicine to Alaskan children. NTI will be a corporate sponsor of musher twins Kristy and Anna Berington of Seeing Double well into preparing for the race. The dogs' care, health and training, the musher team's safety, race equipment needs and more, require significant investment of both time and money from sponsors such as NTI.

This is NTI's second year sponsoring the race, a proud tradition that celebrates the role sled dogs played in the delivery of vital medicine to Alaskan children.

Sled Dog Racing. This dynamic duo is a frequent entry into the annual race and have appeared on the cover of Runner's World magazine, in a Vogue feature, an episode of "The Try Guys" and more.

"Living up here in Alaska, we know the importance of staying warm..." says Kristy and Anna who are based in Knik, Alaska. "We rely on NTI Boilers to keep us comfortable in any weather, and together we make a great team."

Kristy and Anna, and their 40 well-trained canine teammates, are already

"This is a tough competition and participants need to focus on training and preparing, ensuring that no corners are cut when it comes to health and safety—for human and canine members," says Dave Walsh, Vice President of Sales at NTI. "We're happy to be able to support Kristy and Anna with some of the associated costs and be part of a beautiful tradition and celebration of the Alaskan lifestyle."

NTI's wishes Kristy and Anna the best of luck, and hope they stay safe (and warm) on the trail.

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by Al Schwartz Plumbing Contractor

Answers?

n December's column, I asked my readers how they were handling several issues facing our industry, and to share how they were mitigating the impact the supply chain, manpower and economy issues were bringing with them for 2023.

First, I want to thank those of you who responded to my requests. Taking time out of your business day, if you did that, is greatly appreciated. Your insights and solutions speak of people engaged in a business that requires a great deal of "out of the box" thinking, planning and courage.



Sadly, the responses I received put a fine point on the problems outlined in December's column while providing no innovative tips that I can share. How all you handle the supply chain issue is a good example. Many of you are using "common sense" approaches (although common sense is not too common any more).

Most businesses that can, are finding sources for the materials that are in short supply and are bulk ordering them.

Those of you who can't bulk order are, similarly, locating sources and ordering small quantities with recurring shipping dates to keep yourselves supplied. Setting a "re-order" calendar up on your smart devices seems to be gaining ground as a way to keep ahead of the problem. Having an electronic reminder to keep you informed while you run your business is a good idea.

Beyond those methods, there doesn't seem to be a panacea for getting ahead of the curve on material shortages. The interconnected nature of our world today, especially as it relates to materials manufacture, makes any one-size-fits-all solution unobtainable and impractical. You are just dealing with the problem as you would with any glitch... tackling it head-on and making it a non-issue where you can.



The biggest problem the trades face is a population that is growing up to believe work is a four-letter word.

The Eroding Economy

As inflation eats up more of our purchasing power, and your profits, and the Federal Reserve continues to tilt at windmills by raising interest rates to try to tame it, our industry as a whole has been dealt a one-two punch to the gut. While construction is considered by many to be the backbone of a robust economy, it seems that it is always the first to feel the effects of a downturn. I suppose, in some perverse way, it makes sense. Construction takes money, manpower and material... everything that feeds the economic engine.

You can read, watch or listen to any number of "experts" predicting this problem and that outcome, but they are, for the most part, relying on data and past performances. Sort of like listening to the color commentators at a pro football game. They fill the air with a lot of talk about what is obvious, but provide little of substance about the future. The economists can't predict what is going to happen tomorrow any more than the color commentators can predict that interception or recovered fumble. It's all a crapshoot.

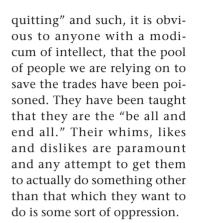
Most of the responses I received on this issue say as much. The best you can do is to anticipate and prepare. Worrying about it doesn't do any good, but dismissing it entirely isn't a good strategy either. Somewhere between "Pollyanna" and "catatonic" is where we all need to keep our expectations, according to what you wrote.

Manpower

Every single response I received said the same thing: "We can't find anyone who wants to work, will show up on time, put in a hard day's labor and stay with us long enough to train them." Trying to avoid generalities is difficult when the obvious is staring you in the face. We, as a nation, have raised an entire generation of layabouts! There, I said it! You all said it to me, now I'm saying it in this magazine, in print and digital format (assuming it gets published).

The stories I have heard are not apocryphal, they are real. I do not enjoy disparaging young people, but if the shoe fits...

From reading articles on some social media platforms, to the news feeds on my cell phone, about "quiet



We could probably fill volumes with stories from the younger generation about how their teacher, boss, server, etc., was "mean" to them

and, therefore, they can respond in any way their little (spoiled) hearts desire.

Tell me I'm wrong!

The real problem we in the trades have, and will continue to have for years to come, isn't supply chain issues, nor is it the economy (let's face it, even during the great depression, people found ways to cope). The biggest problem the trades, and the country, face is a population that is growing up to believe that work is indeed a four letter word.

So, do your best to find, cultivate and retain your new hires where and when you find them. If you find people who want to work, can be taught the trade and stick around long enough to learn it, you are blessed! If the responses I got to my question are any indication, you've got your work cut out for you.

Remember, these people will be running this country in the not-too-distant future. Think about that for a minute.

The Brooklyn, N.Y.-born author is a retired third generation master plumber. He founded Sunflower Plumbing & Heating in Shirley, N.Y., in 1975 and A Professional Commercial Plumbing Inc. in Phoenix in 1980. He holds residential, commercial, industrial and solar plumbing licenses and is certified in welding, clean rooms, polypropylene gas fusion and medical gas piping. He can be reached at allen@proquilldriver.com.



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Built to be the Best



by James Dipping PE, CPD, LEED AP BD+C, ARCSA®AP

Intelligent Water Systems Evolution



oday's building owners, operators, and developers are adjusting to a new market environment in a post-pandemic world. Many are reexamining traditional functions of their facilities as tenants demand greater flexibility, connectivity, comfort, health, and safety. Integrating an intelligent domestic water system can have an impact on all those areas.

Smart buildings use a wide range of existing technologies to facilitate the efficient and economical use of resources. Critical equipment such as lighting, air handlers, chillers, and boilers communicate with one another through a sophisticated management system that monitors various components. They do this by collecting and sharing data between systems.

The goal is to provide useful services that minimizes environmental impact while helping occupants to be more productive and safer. And while your first thoughts may go to energy monitoring and HVAC controls, a growing awareness of intelligent water systems is trending—and for good reason. While conservation continues to be a key consideration, it is not the only one.

Conserving Water Safely

According to recent reports from the US Environmental Protection Agency, water use in commercial and institutional facilities (e.g., office buildings and hospitals) account for 17% of publicly supplied water in the US. For these properties, restrooms, heating and cooling, and landscaping accounts for most of the use. Strategies to increase savings and efficiency include:

- Harvesting rainwater, graywater and other non-potable water sources for outside irrigation and flushing applications.
- Implement energy-efficiency measures to reduce the need for building and equipment cooling and heating, which will reduce amount of water required by these systems.
- Installing more efficient fixtures (such as dual flush toilets, sensor-controlled faucets, etc.)

However, I want to place a huge caveat on the third bullet point. Before rushing

out to install a bunch of low-flow fixtures to save water, be advised that doing so in haste could be putting building occupants at risk. Today's water pipe sizing practices are outdated and don't consider the decreased volumes of water used by widespread low-flow fixtures. These devices can leave water in the pipes and increase building water age. Stagnant water in these systems can create an environment ideal for cultivating dangerous pathogens.

When water was flowing at higher volumes through the plumbing systems,

Focus on Health and Safety

Legionella is a general category of bacterium all-too-commonly found in our water supplies. There are over 60 different species of bacterium, of which 25 are known to be implicated in human disease. There is one king of the species, Legionella pneumophila, that is responsible for approximately 90% of all infections. About 1 out of every 10 people diagnosed with Legionnaires' disease will die due to complications from their illness. For those who get Legionnaires' disease during a stay in

a hot tub. If occupants are in a higher risk category, you may have to consider more options, such as supplemental disinfection, to keep occupants safe.

ASHRAE offers a guide to "Legionellosis: Risk Management for Building Water Systems," which it describes as "essential for anyone involved in design, construction, installation, commissioning, operation, maintenance, and service of centralized building water systems and components." Likewise, the Center for Disease Control offers its "Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings."

Smart buildings use a wide range of existing technologies to facilitate the efficient and economical use of resources.

the water purveyor's primary and secondary disinfectants had the best chance at eliminating water borne pathogens because the disinfectants used have a shelf life. The use of low flow fixtures in conjunction with outdated water pipe sizing practices allow the disinfectants to expire before the water reaches your faucet, giving pathogens the opportunity to grow inside the building pipes.

The fixture unit method referenced in most plumbing codes to calculate water pipe size is based on the outdated Hunter's Curve, developed back in the 1940s when plumbing fixtures were consuming water at much higher volumes. The plumbing engineering community must question why we are using a calculation method which fails to reflect the reality of today's low flow plumbing designs.

Building owners and managers should work with design engineers to correctly size the piping infrastructure of their facilities using tools like the Water Demand Calculator. While this tool is recognized for only certain building types in the Uniform Plumbing Code (UPC), it is a starting point to keeping water moving in buildings and recognizing that fixtures are flowing lower than they were in 1940. Only then, can we reasonably recommend a holistic use of water conserving fixtures. They are important but keeping buildings healthy is more important.

a healthcare facility, the mortality rate climbs to about 1 out of every 4.

Building owners and operators have good reason to be so concerned about Legionella as plumbing domestic water systems are the predominant source of the bacteria. If Legionella grows in a plumbing system, the bacteria can spread to humans via small droplets and/or vapor inhaled into the lungs. Common sources where these droplets are "made" include:

- Showerheads and sink faucets
- Cooling towers
- Hot tubs
- Decorative fountains and water features
- Hot water tanks and heaters
- Large, complex plumbing systems

So how do the bacteria grow and spread? Water temperature, disinfectant residual, stagnation, and quality as well as pipe materials and other factors can all contribute to Legionella pneumophila growth in a domestic water system. The larger and more complex the building is, the more challenging it is to maintain a healthy, balanced system. The age, location, surrounding environment, and incoming water quality can also have a significant impact.

Legionella bacteria have an ideal temperature range for growth which also happens to be right in the sweet spot most building occupants favor for washing, bathing, showering, or soaking in

Economic Benefits

In addition to making buildings healthier, and more ecologically responsible, a smart water system can have other impacts on a company's balance sheet. Planning for an intelligent water system can uncover problems, such as previously undetected leaks or malfunctioning equipment. Comprehensive metering can also identify areas to target reduced water use.

Establishing and communicating water conservation and efficiency measures can also position building owners, managers, and companies as leaders helping to improve sustainability. Implementing best management practices for water efficiency can earn recognition for facility owners and managers in the green marketplace.

For a water management program to succeed, there should be a comprehensive strategic plan and vision. Understanding your current water uses and systems allows you to develop a plan for greater conservation, efficiency, management, and health and safety. Having clear objectives helps your organization set priorities to allocate funding to have the greatest impact.

James Dipping, PE, CPD, ARCSA®AP, GPD, LEED AP BD+C, is the technical director of plumbing engineering for ESD, a leading global engineering firm specializing in mechanical, electrical, plumbing, fire protection, life safety, structural, and technology engineering. James has more than 25 years of experience in the plumbing design and construction industries.

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The Skilled Labor Battle: Trade School Vs. College?

The United Service Workers Union partners with plumbing and HVACR contractors to offer apprentices technical education and on-the-job learning.

By Kelly L. Faloon

hen it comes to preparing for their work future, today's young people have some difficult decisions ahead of them: what they want to do in their work life, where to obtain the knowledge and training, how to pay for their education, and what the job prospects will be when they complete their schooling.

For anyone desiring a college degree, the price can be daunting in any field.

"The cognitive competencies that are in high demand in the workforce are generally associated with higher levels of education," notes a report from the Georgetown University Center on Education and the Workforce (CEW). "Today, two out of three jobs require postsecondary education and training, while three out of four jobs in the 1970s required a high school diploma or less. Yet while young people today need more education than ever to compete in the labor market, a college education is more expensive than in the past."

The 2021 report, "If Not Now, When? The Urgent Need for an All-One-System Approach to Youth Policy," illustrates that between 1980 and 2020, college costs rose 169%.

"The costs of higher education have risen rapidly over the past few decades, making cost a barrier for many young people who wish to pursue a degree or credential," the report says. "It used to be possible to work one's way through college; today, college costs are generally too high—and young people's wages too low—for that to be feasible. Consequently, more students have to take on larger amounts of debt to get a college degree."

Work experience is "crucial for young adults, especially those who cannot access or complete post-secondary education," the report adds. Working after-school or summer jobs allows them "learn new skills and accumulate human capital so they can qualify for decent jobs that pay more than subsistence wages." However, over the last two decades, youth employment has fallen.

The CEW report explains that the three recessions since 2000—the dot.com bust, the Great Recession and the COVID-19 pandemic—hit younger workers hard. Many find jobs in fast-food restaurants and personal service positions (barbers/hairstylists, child care workers, fitness trainers, animal care workers, recreation workers, etc.). "These occupations provide basic skills but not the higher-level general and technical skills that facilitate movement into good entry-level jobs on promising career pathways," it notes.

The Skilled Labor Dilemma

So how can young people obtain a secondary education that will provide them with a good standard of living but not cripple them in debt?

Whether you call it trade school, vocational school or career and technical education (CTE), these learning institutions can teach young people the skills and training they need to enter a career with financial stability, such as plumbing, HVACR or electrical. These jobs are fairly recession-proof and cannot be outsourced overseas.

The market size of U.S. trade and technical schools is \$15.1 billion in 2022, notes an IBIS World market report. And a *Bloomberg* article notes that more young people are entering apprenticeship programs in many industries.

"U.S. companies are increasingly tapping high school students for skilled jobs," the August 2022 article notes. "As a result, apprenticeships are seeing a renaissance after failing to gain a foothold over the past few decades. About 214,000 people aged 16 to 24 were in apprenticeships in 2022, more than double the amount a decade ago, according to July data from the U.S. Department of Labor."

Bloomberg adds that it's "part of a national rethink by employers scrambling to fill about 10.7 million vacancies by developing their own talent pipelines."

Regarding trade careers in construction, plumbing and HVACR are some of the highest-paying trades today. Candidates can obtain a two-year associate's degree or certification, but many go directly into four- or five-year apprenticeship programs.

The plumbing and heating industries have long experienced the struggle to replace those workers who retire or who, because of job loss during the Great Recession or job dissatisfaction, left for work in other industries,

"Everyone is so focused on college, college, college that the apprentice-ship programs have fallen by the wayside as much as the government is trying to push them," notes Brian Keating, director of the United Service Workers Union (USWU) Joint Apprenticeship Training Fund (JATF). "Many younger people don't even seem to know they exist, nor do their guidance counselors, who are steering them in a particular direction, which is troubling."

On-the-Job Learning

The JATF trains enterprising construction workers as part of USWU, located in New Rochelle, N.Y. The USWU, an affiliate of the International Union of Journeymen and Allied Trades, covers employees working in many industries. Its construction division includes plumbing, HVAC, fire sprinkler, steamfitting and sheet metal workers.

The "joint" aspect of the apprentice program illustrates the partnership between the JATF, which provides the technical education, and the signatory contractors, who offer on-the-job "learning."

"We don't call it on-the-job training anymore because what we're teaching here, we want it to be expounded upon at the jobsite, so now you're teaching it out in the field," Keating explains. "So, it's on-the-job learning combined with classroom-related instructions. It allows apprentices to apply the knowledge they acquire in the classroom to their work during the day. They don't forget."

Keating has spent most of his 45-year career in the HVAC industry and headed up the USWU JATF for the last 12 years. He is an OSHA-approved trainer for occupational safety and health, also approved by the New York City Department of Buildings. Keating also is a master trainer for the



The United Service Workers Union's Construction Division includes plumbing, HVAC, fire sprinkler, steamfitting and sheet metal workers.

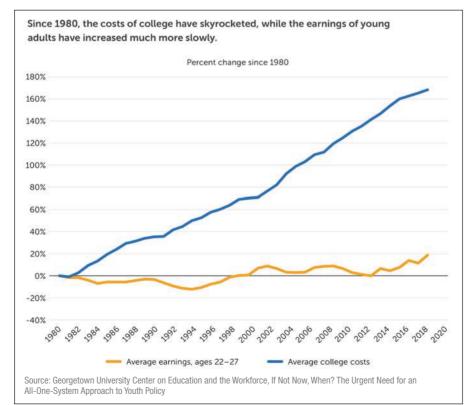


Table 1. Percentage change in college costs since 1980

National Center for Construction, Education and Research.

One of Keating's main goals for the school is to attract more young people into the construction specialty trades.

"I've spoken at some women's groups, and there's such an opportunity here for them," he says. "They can make a living wage, with full medical, dental, and life insurance, all paid for by the employer. Say you're making \$2 an hour; that \$2 is all yours. You don't have to contribute 25 cents to your medical, 10 cents to this, and 20 cents to that."

Keating notes that some colleges promise young people "ridiculous" six-figure salaries once they obtain a college degree. "You're not going to get that salary right out of college because you have no experience," he explains. "How can I possibly pay you that kind of money? However, with an apprenticeship, you're not only getting a formal education at a college level, but you're also getting the experience because you're working full time."

Before prospective apprentices commit to the JATF, Keating brings them in to discuss the program. He encourages young people to include their parents and explains the curriculum. Keating demonstrates the tools and projects they may work on.

"I want them to have a good idea of what the job entails," he says. "And I want them to research it. If you want to be a sheet metal worker, go online and research sheet metal work and what's involved in it. Is it something you'd be comfortable doing and making a career out of?"

The US Bureau of Labor Statistics (BLS) reports that the median annual salary of plumbers, pipefitters and steamfitters was \$59,880 in early 2021. The lowest 10% earned less than \$36,700, and the highest 10% earned more than \$99,920.

Of course, plumbing wages depend on years of experience and whether you are an apprentice, journeyman or master plumber, union or nonunion. The BLS figures do not make that distinction.

Safety First

USWU's JATF program began nearly two decades ago, Keating says. The plumbing, fire sprinkler, sheet metal and steamfitting programs are approved by the New York Department of Labor.

➤ Turn to Labor Battle, page 34

Presented in partnership with Radiant Professionals Alliance

by Patrick Linhardt HYDRONICS MANAGER AT CORKEN STEEL PRODUCTS CO.



Silver Sleuthing

forgot to charge my electric car the other night. I forget a lot of things these days, but that was the first time for the car. I noticed that it wasn't plugged into the wall charger when I walked into the garage to go to my first job site visit that morning.

The first thing my mind started calculating was the distance to and from my appointment in Dayton Ohio. I knew it was my only scheduled meeting for the day, so if I had enough charge left over from the previous day, I could work from the home office...

The estimated range on the dash indicated 97 miles. I know the distance between downtown Cincinnati and downtown Dayton is 54 miles because there are a few things I still remember. I used to obsess about maps and mileage when I was a kid on vacation. That, and Wyoming license plates. My dad would pay good money for the first sighting and I wanted that money and the satisfaction of being more observant than my five older sisters.

The second thing to check was the distance to the job site, which Apple Car Play told me was 47 miles. At least I could make it on time and then decide to charge up away from home or try to make it back. The little secret of electric vehicle range that I wasn't aware of is the reduction in range in cold weather. My Ford MachE has a significant decrease in how far it goes as the outdoor temperature drops below, say, 40 degrees F.

To reduce electrical consumption, I turned off the heating, since in this car it is an electric heat pump. One of the first phone calls during the drive was from a heating contractor that does a lot of work for a remodeling contractor. He had just left a house where a wall needed to be removed and asked if he could replace original pipes with PEX pipe. I get a fair amount of inquiries about moving or removing walls with the popularity of the "open" floor plan concept.

Piping Puzzle

He wanted me to take a look and after he explained it, I wanted to see this for myself. I told him I was on my way



A consult on a remodeling job turns into a hydronic heating mystery.

north to Dayton for the morning. He asked if I could meet him after that. I told him a white lie about being busy, instead of the truth about not having enough charge in my car, and suggested the next morning. It was agreed that I would meet his hydronic guy at 9:00 to at least cap off the pipes so the carpenters could get something done.

The reason I wanted to see it for myself was the amount of pipes and their sizes. There were four pipes, even numbers of the same size are pretty common in hot water systems. Two of the pipes were ½", which is uncommon in older homes. Typically the pipes in the walls are at least ¾". Curiously, the other pipes were ¾" and 1-1/4", which don't match. To further muddy the waters, he told me the first floor was copper-fin baseboard while the second and third floors were cast iron radiators.

The address is in a nice neighborhood off a street with bigger houses built in the 1920s boom years. The people in these smaller homes have been trying to make their houses as large as they can to keep up with the neighbors since they moved in. Hence the number of calls about moving the pipes in the walls that are being removed with every new addition/remodel.

Following the Twisting Trail

It was just as he described when I got there, two ½" pipes coming out of the floor, going up inside the wall to be removed, across the ceiling in the joist pocket, then disappearing through the subfloor of the room above. The ¾" and 1-1/4" pipes were more exposed because the floor near them was removed. The 1-1/4" pipe was piped with two 45 degree elbows at the base instead of the typical one 90 degree elbow. I hadn't seen that before.

At the top of the 1-1/4" line, it turned and ran 4 feet horizontally before it turned again and ran 4 feet to what appeared to be the original back wall of the house, where it turned up with a 1-1/4" by ¾" reducing elbow. Well, now we were back to the same pipe size.

The other ¾" line followed the same path from the floor to line up on the back wall before it turned up. It was pretty obvious that a cast iron radiator was above us between where the now two ¾" pipes disappeared through the subfloor.

Now it was time to take a look on the second floor, but the lady of the house was behind a closed door in the room(s) where the pipes ran. So we went the other direction to see what we could

find in the basement. Unfortunately, the area below had been remodeled and the original piping was now behind drywall, except for two 12" x 12" access panels.

Once removed, there wasn't much to see, except one asbestos covered pipe. The last place to look turned out to be the boiler room. Once again, somethings looked a little different. There were two asbestos covered supply lines leaving the boiler room, one going to the front and one going to the back, which seemed right. Then there were three small copper lines coming back in the ceiling, which could be explained by the baseboard on the first floor.

The Mystery Explained

But then there was one larger return pipe coming back that was about a foot off the floor. I then realized that the original system in the house was steam. That would explain the larger pipe going to the radiator and the smaller pipe returning from the radiator. With hot water it's usually the same size, while steam it's usually different. In this instance, the supply pipe is oversized because it ran over 6 feet horizontally. (I explained that in my May 2022 column.)

We went back upstairs to the exposed pipes so I could explain my silver sleuthing. Silver because I'm 67 years old this month. In the meantime, the carpenter had removed the floor by the ½" pipes to reveal that they were already cut off below the floor. So now we only had the 1-1/4" and ¾" pipes to cap off. When they go back to hook the radiator back up, they can transition to ¾" PEX for both the supply and return.

I made it back home from Dayton with 24 miles of range left. I even turned the heat on for the trip back. •

Patrick Linhardt is a thirty-seven-year veteran of the wholesale side of the hydronic industry who has been designing and troubleshooting steam and hot water heating systems, pumps and controls on an almost daily basis. An educator and author, he is currently Hydronic Manager at the Corken Steel Products Co.



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Rinnai Partners with Tony Stewart Racing

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KANNAPOLIS, NC – Rinnai America Corporation has partnered with Tony Stewart and his racing entities in NA-SCAR and the NHRA to promote its line of products using his diverse motorsports portfolio.

In NASCAR, fans will see the red Rinnai logo in an associate position on Stewart-Haas Racing's No. 14 Ford Mustang driven by Chase Briscoe in the NASCAR Cup Series. In the NHRA, Tony Stewart Racing drivers Leah Pruett and Matt Hagan will carry the Rinnai logo in the Camping World Drag Racing Series, with Pruett running a full Rinnai primary sponsorship on her Top Fuel dragster in two events—the NHRA Winternationals March 30-April 2 in Pomona, California, and the NHRA Carolina Nationals Sept. 22-24 in Charlotte, North Carolina. Hagan will sport a full Rinnai livery on his Funny Car in the NHRA New England Nationals June 2-4 in Epping, New Hampshire, an event the three-time champion has won four times, including in 2022.

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Stewart-Haas Racing's Chase Briscoe along with Tony Stewart Racing's Leah Pruett and Matt Hagan to Carry Rinnai Branding in 2023.

environment that emulates the quality and dedication we put into our products and services," said Frank Windsor, president, Rinnai America Corporation.

"The similarities of our business to racing are numerous especially when speed efficiency, and superior quality are keys to success. Performance is paramount, and that's something Rinnai has always understood. It's part of our overall commitment to our customers, and racing embodies that commitment."

Laars® Marks 75th Anniversary at 2023 AHR Expo

ROCHESTER, NH— Jan. 17, 2023 — Laars® Heating Systems, a leading US designer and manufacturer of boilers, water heaters, and pool heaters used in residential, commercial, and industrial

to customers, quality, and innovation that has defined Laars since 1948 and continues to drive the company into 2023 and beyond," said Domingo Mohedano, vice president and general

manager of Laars Heating Systems. "AHR Expo is a great opportunity to look back on everything we've achieved in 75 years. More importantly, we're excited

to share our vision

for the future of Laars and the rapidly evolving space and water heating industry, and what it means to our valued customers."

Representatives from Laars will be available at Booth #C6105 during AHR Expo. The company will also introduce the latest additions to its product lineup:

- E-ThermTM Commercial Heat Pump Water Heater
- NeoTherm® XTR Boiler and Volume Water Heater
- FT Series Wall Hung 301 and 399 Boiler
- LT Series Tankless Water Heater For more information about Laars Heating Systems, visit http://www.

For more information about Bradford White Corporation, visit https://www.bradfordwhitecorporation.com.

The NASCAR Cup Series encompasses a total of 39 events in its milestone 75th season, beginning with the non-points Busch Light Clash Feb. 5 at the Los Angeles Memorial Coliseum and ending with the season finale Nov. 5 at Phoenix Raceway. The NHRA Camping World Drag Racing Series includes 21 events in 2023. Its 72nd season starts with the NHRA Gatornationals March 9-12 in Gainesville, Florida, and concludes with the NHRA Finals Nov. 9-12 in Pomona.

Proud Partners

"We're incredibly proud to have this partnership with Rinnai because it shows the strength of our motorsports program," Stewart said. "NASCAR and NHRA offer two very different fan experiences and combined they touch every corner of the country. Rinnai and its customers get the best of both worlds because our program allows a number of choices to promote its products and services."

In addition to branding on racecars, Rinnai becomes the official tankless water heater of Stewart Haas Racing and Tony Stewart Racing. This designation highlights Rinnai's brand promise of "Creating a healthier way of living®", a mantra that is at the forefront of all the company's efforts. By continuing to offer quality products and services to homeowners and organizations, Rinnai is aiding in providing businesses and homes with energy-efficient hot water options for cleaner and healthier living.

The announcement of the partnership comes after a series of milestone events for Rinnai America. "We opened a new manufacturing facility last year in Griffin, Georgia, that has allowed us to combat shipping delays and supply-chain challenges. In this facility, we manufacture our new RE Series™ Tankless Water Heater, the first and only non-condensing unit with a built-in pump. That product, along with our ability to manufacture in the United States, is another reason why we've partnered with Tony Stewart and have become the official tankless water heater of Stewart Haas Racing and Tony Stewart Racing," Windsor said.



applications, kicks off commemoration of its 75th anniversary at the 2023 AHR Expo in Atlanta Feb. 6-8.

"We're celebrating the commitment



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General Piping Completes High School Plumbing Renovation

SPECIAL TO CONTRACTOR

n an effort to create learning spaces for its students that are more reflective of the 21st century, Lawrence Central High School in Indianapolis, Indiana, is in the midst of a four-year, \$80 million renovation project that was approved by the area's taxpayers. While the school will look completely refreshed and new, it will also function in an improved way, modernizing the behind-the-scenes plumbing, heating and cooling system that will create a positive impact on student comfort and learning.

Enter General Piping Inc., an MCAA member that won the bid for the mechanical and plumbing portion of the renovation. Also located in Indianapolis, Indiana, and in business for more than 40 years, the licensed and certified contractor specializing in plumbing, heating and air conditioning, arrived on the scene in July of 2020.

Scope of Work

"We were brought in to install all the hydronic piping for the heating and cooling systems, as well as the entire plumbing portion of the renovation, which included new piping, new fixtures and new mechanical equipment," said Justin Richardson, project manager, who led the Lawrence Central renovation for General Piping.

Originally built in 1963, approximately 463,000 square feet of the high school's 531,000 square feet was included in the renovation, along with a three-story addition to the front of the original building. While the building had experienced several renovations since it was built, the building hadn't seen any significant renovations since 1989.

In this renovation, the interior portions were completely gutted, and in some cases, the concrete floors were taken down to dirt to pave the way for a complete redesign of the interior and exterior of the building. Once the building was demolished, and the area was made safe, General Piping's crew got to work.

With a total budget of approximately \$13 million for the mechanical and plumbing systems, General Piping set out to install 75,000 linear feet of piping and 378 individual plumbing fixtures, including new sinks, toilets, water fountains and emergency eye wash stations for the science labs.

A central main plant in a separate



The project site in Lawrence, KS.



Two General Piping technicians install a valve.

Contractor relies on NIBCO grooved butterfly valves for fast, trouble-free install.

building behind the high school contained all the major mechanical equipment, including the heating system boilers and cooling system chillers.

Since the high school was in session for some of the renovation, the work that needed to be completed was done in an occupied building, which presented some challenges from a timing perspective.

Working Smarter

To expedite the install, General Piping prefabricated all the major mechan-

ical room work offsite at its fabrication shop and then shipped it to the jobsite for installation. All the mains and branch piping for both the hydronic and plumbing systems were installed in the field with little to no prefabrication.

"We had a window of time when we shut down the heating system in April and had to have everything torn out and the new system installed and functional by October when it started getting cooler. Because of the amount of welding that was needed, the only way

to achieve that was to fabricate everything offsite," explained Richardson.

Once the heating system was installed, General Piping duplicated the process with the chilled water system, removing the old system in October and having the new system in place by the end of March, before the weather turned warmer.

To complete the project, General Piping used primarily NIBCO fittings, valves and its FLO-BOSS® Coil-Connect® kits that come bagged and tagged ready to use for specific pieces of equipment. The project specifications also mandated that copper sweat fittings be used, rather than press fitting systems.

"For the prefabbed portion that was brought onsite, we strategically placed our grooved joints, using the grooved system (or grooved valves in some cases) as a natural break to connect the system as quickly as possible without problems," explained Richardson.

On this particular project, the owner of the building had specified a specific grooving system that created a need for General Piping to modify standard lug butterfly valves by using an adaptor or by fabricating weld flanges to the valve in its fab shop to make the grooved connection. These were used on the mechanical hydronics system for 2-1/2-inch steel pipe and larger, up to 12 inches.

"Upon learning this, our NIBCO representative brought to our attention that they offered grooved butterfly valves that could eliminate the extra work," said Richardson. "I'd estimate

➤ Turn to General Piping, page 31



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by Patti Feldman

Texting, Fleet and Service Management

ext Request (www.textrequest.com, 423/218-0111 phone or text) is a text messaging platform, usable on any computing device, that allows you to initiate and continue communication with prospects and customers (as well as text your employees) through your existing office phone number, VOIP, or toll-free lines you already use.

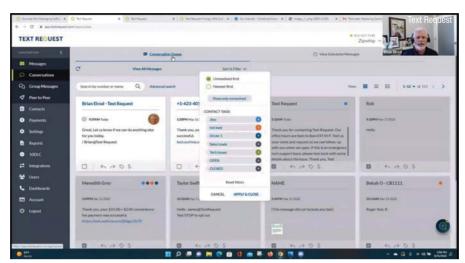
Useful for expediting lead generation, conducting sales follow-up, appointment scheduling, customer service, the solution is available in several tiered plans, with escalating capacities of number of texts, contacts, and dashboards, and increased capabilities.

Messages come directly into your dashboard and you can incorporate a desktop app for the solution. The Text Request dashboard can show a classic view, condensed view, and combined view. You can also use the Text Request mobile app, iOS or Android—same functionality.

All plans support unlimited users and contacts, two-way SMS chat originating on your website with a web chat widget (to spark inbound conversation); mass texting to any/all of the your contacts through BCC group messaging and with replies coming back only to you; picture messaging; message templates to ignite or reignite interest, share new products or services, or other information (template examples available in the Resource Hub); and the ability to request and collect secure payments through SMS. Also included: contact stats, contact tags, and contact status-active, opted out, or blocked.

All plans except the Basic plan include the abilities to schedule seasonal, reminder, and other messages and to send location requests to customers that can result in a pin with an exact address.

Depending on the plan, you can use Text Request on multiple dashboards with multiple phone lines. Automations can include voice greeting for textonly numbers telling callers it is text only and sharing a phone number to call, if desired; activation of an out-of-office auto response; the marking of texts as *delivered* or *error* and *resolved* or *unresolved*; and the ability to tag individual texts with custom labels. Administrators can set up three



A video demo of the Text Request messaging platform.

Reviews of the Text Request messaging platform, the Fleetio fleet management solution, and ServiceMax Asset 360 for Salesforce.

permission levels for company users.

Pricing: per month according to plan selected. All plans include unlimited contacts, devices, and user groups. Each plan can be customized with a la carte features from higher plans.

Fleetio

Fleetio (www.fleetio.com, 800/975-5304) is a centralized mobile fleet management solution suitable for fleet managers, drivers, technicians, parts managers, and other personnel. Available in three tiered plans, its capabilities focus on fleet asset tracking and maintenance, vehicle life cycle management, and fleet management reporting.

The *Starter* plan suits fleets ready to organize vehicle inventory and manage inspections. Fleet managers can use Fleetio's VIN decoder to automatically add 90+ vehicle specifications to vehicle and large asset records; create and assign custom mobile inspection forms; utilize preventive maintenance scheduling and reminders; and report on fleet insights, including cost of ownership.

The *Pro* plan suits fleets ready to automate their outsourced maintenance and centralize fleet data. Digital repair orders allow fleet managers to automate maintenance authorizations and transaction

workflows, eliminating the need for phone calls with drivers and shops. Data integrations centralize fuel card, telematics, and maintenance shop data, syncing mileage, location, and fuel usage, and enabling real-time flagging of exceptions. The plan also includes vehicle assignments and scheduling; fault and recall management; customizable permissions and data fields; and API access, enabling integration with internal or third-party software.

The Advanced plan suits fleets that perform maintenance in-house or keep parts on hand. Fleet managers can track and control garage maintenance and inventory across multiple locations. The plan includes work order management; parts and inventory management including automatic stock adjustment and low stock reorder notification; purchase orders; and the ability, via webhooks, to automatically push data to other systems a based on Fleetio events.

Pricing: per vehicle, per month; free 14-day trial (no credit card required)

Asset 360

ServiceMax Asset 360 for Salesforce (www.salesforce.com), jointly developed with Salesforce Field

Service (covered in my January 2022 column), provides a 360° view of assets on one platform. It complements Salesforce Field Service with asset-centric features and automation so companies can drive efficiencies in service processes, reduce costs, and deliver maximum uptime to customers.

Asset 360 is suited to organizations and manufacturers who service complex, high-value assets. The platform offers multi-level hierarchical views, instant access to asset data, real-time data and reporting, insights into the install base, contract and warranty management, entitlement automation, third party contractor management, and asset performance trends.

Asset 360 includes pre-packaged best-practice process flow templates and transactions that are complementary to Salesforce Flows. A Service Process wizard assembles various workflow steps that can provide guided execution of business processes.

Other key functionalities include: contract and warranty automation, allowing service teams to define and track granular terms for individual assets, contract and service (on top of the selected Pricebook), and to select the best coverage option. Numerous data-driven dashboards give real-time and historical insights into various types of asset data, including, for example, a service revenue and renewal dashboard for sales and account managers that gives a view of contract margin, service consumption, customer surveys and SLAs (service level agreements).

The solution includes dedicated features on the Salesforce Field Service mobile app enabling field technicians access to information on equipment maintenance history, service coverage, product configuration, exact location, and other critical data. ServiceMax Engage, an end customer mobile app for equipment owners and operators, provides visibility to asset data, and the ability to create service requests, view work orders, and see service histories.

Patti Feldman writes articles and web content for trade magazines and manufacturers of building products. She can be reached at productpad@yahoo.com.

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Modular Construction and the Future of Building

➤ Continued from page 6

implementing modular construction using imported steel boxes. Because of the change in structural system, the double height mechanical room, originally located on the 18th floor, was moved to the 3rd floor, and a three-foot-thick concrete "mat-in-the-sky" was poured on the fourth floor, on which the modules are stacked.

Although citizenM markets itself as offering affordable luxury, modular construction doesn't necessarily contribute to affordability. "From what I hear," says Isaac-Daniel Astrachan, a principal with Stephen B. Jacobs Group, "the cost of construction is not that much different between conventional and modular." What chiefly makes citizenM affordable is its small

the decision to use a manufacturing facility in Poland—which had built the modules for the client's hotels in Europe—added shipping and customs to the schedule.

Quality control may be the primary advantage of modular construction that this project was able to realize. With work being conducted out of the weather, at workbench height, and with assembly-line production methods, "modular construction takes the pressure off the back end of the construction schedule," says Michael Schwartz, a senior associate at DeSimone Consulting Engineers, structural engineers for the project. "There was none of the usual check-listing—cracked tile, loose wallpaper—when the hotel was trying to open."



The 5,500-sq.-ft., three-story home was constructed using six 45-foot shipping containers welded to a steel-centered superstructure.

unit size. The Bowery property fits in about a third more guest rooms than what a typical hotel with the same square footage would achieve.

With construction costs coming in about even, schedule is often one of the main reasons to go modular. Units are under construction simultaneously with site work, which typically shaves weeks or months off construction. But for this project, a number of complicating factors meant that advantage did not pan out. For example,

"Modular construction is ideal in buildings where a high degree of repetition is implemented, such as hospitals and hotels," says Stephen B. Jacobs, president and founder, Stephens B Jacobs Group, designer of New York's citizenM Bowery Hotel, the tallest modular hotel in the world. The architect has five such projects in development, two in construction and three in the design phase. Jacobs sees a future in modular construction but "until we have enough critical mass and more



The garage at the Sturgeon and Allen home.

reliable firms that can tackle challenges such as fire-proof boxes."

In 2021, citizenM opened the citizenM Los Angeles Downtown Hotel. Notable for its use of modular construction, this 315-room, 11-story hotel was realized in conjunction with BLVD Hospitality, the preeminent lifestyle hotel developer in Downtown Los Angeles. citizenM collaborated with its long-time design partner, concrete Amsterdam, alongside construction firm Mortenson.

Deep in the Heart of Texas

Homeowners Ron Sturgeon and Linda Allen are avid world travelers, and their home and business projects are often inspired by art, architecture and design from across the globe. In 2018, Sturgeon built the Box Office Warehouse Suites (BOWS), an office, warehouse and retail park in Fort Worth, Texas, made from 154 shipping containers. Inspired by the BOWS property's unique look and high performance, Sturgeon and Allen decided to build a custom home in the Linwood neighborhood of Fort Worth that would be eye-catching and energy-efficient.

The 5,500-sq.-ft., three-story home was constructed using six 45-foot shipping containers welded to a steel-centered superstructure. Sturgeon and Allen also have a guest home at the back

of the main property, made from two 45-foot shipping containers.

Because of the home's open rooms, sizable glass windows, high ceilings, and location, keeping spaces cool during the hot Texas summers and warm during the cold winter months was critical. So, Sturgeon, who has used more than 400 duct-free systems from LG Electronics USA's Air Conditioning Technologies division on several other projects, including the other shipping container development, reached out to Fort Worthbased AC Supply to design an LG HVAC system for the house.

As a result, AC Supply designed a system consisting of 16 LG Art Cool Mirror wall units with Smart Inverter Outdoor units. LG's Vertical Air Handling Unit (VAHU) with exposed ductwork was used to condition the open-plan second floor. AC Supply, working with Garrett Davis, project supervisor and owner of Davis Commercial Services, contacted JD Webb at Webb Air Heating & Cooling to manage the HVAC installation.

With post-COVID "new normalcy," perhaps modular building will become more popular in theory and application. Workers are able to work in controlled environments instead of busy, more populated jobsites, bringing the jobsite in-house. With time savings, scheduling benefits and potential cost savings, it's worth a look.





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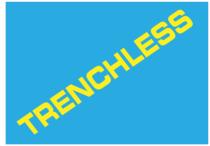
























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Major Mechanical Leverages New Kitting Service

➤ Continued from page 1

idea of how to run pipe," says Pete Erny, only half-jokingly. A 21-year veteran of the plumbing industry in Minnesota, Erny serves as a plumbing foreman with Major Mechanical in Maple Grove, focusing on commercial and multifamily plumbing projects. Erny has ample experience coping with the headaches and do-overs that inevitably occur when too many plumbers go in too many different directions.

This need for consistent installation quality is one of the prime reasons Major Mechanical chose to use Uponor Kitting Services for the rough-in plumbing work on a "cooperative homes" development called Applewood Pointe, located in Eden Prairie. The value-added service is designed to streamline the PEX-a pipe and fitting installation process for the plumbing or mechanical contractor.

"Historically, piping-system layout and procurement for rough-in plumbing has been coordinated on the job site, with the foreman having the responsibility for ordering all the materials needed, including chasing down any unexpected shortages," explains Daniel Worm, manger, Commercial Segment, at Uponor.

Problems often arise in the form of communication and information gaps between the field and home office. These gaps are "managed" through over-buying by the foreman, just to make sure crews aren't left to stand around, waiting for materials to arrive.

"Uponor Kitting Services is structured to close communication gaps," says Worm. "It reassures everyone that the right material in the right quantities will be on the job and ready for installation precisely when needed. The goal is to smooth worksite-to-office communications, reduce procurement errors, minimize installation mistakes, and ultimately boost productivity."

With his experiences at Applewood Pointe, Erny sees the service as a welcome relief from the old ways, and not just for its impact on material procurement. Kit contents are based entirely on rough-in designs created by Uponor Construction Services, working closely with the contractor. The result is an



Major Mechanical plumbing foreman Pete Erny (left) and lead installer Jared Hudalla on the Applewood Pointe job site in November 2020.

consistency that drives efficiency.

"You still need to figure out how to get Pipe A to Pipe B," Erny says, "however putting all the essential piping-connection components in a single kit for a single apartment unit gives each installer a running start and a clearer direction."

It's in the Bag

Aimed at individuals aged 62 years and up, the Applewood Pointe complex consists of 100 apartment units, each with two baths, a kitchen, and a laundry area. But the floor plans for these 100 units are not stamped out with a cookie-cutter. In fact, the condo-style development strives for creative variations and features 25 different configurations—each with a different, trunk-and-branch plumbing plan. That complexity strengthened the argument for a new approach to planning and executing the rough-in install.

Major worked with the Uponor Kitting Services team to create plumbing layouts for each of the 25 configurations. Kits, which consist of plastic bags carrying precise, hand-counted numbers of elbows, tees, rings, and other PEX system components, are then assembled to meet the specific needs of each design and marked clearly with the name of the individual apartment



Finished PEX connections. Uponor's new kitting program provides plastic bags loaded with precise, hand-counted numbers of elbows, tees, rings and other PEX piping components to make connections like the ones shown here in a given job-site area.

Minnesota-based commercial plumbing contractor uses service to boost installation productivity, and curtail material shortages.

where they are to be installed.

Just as importantly, Uponor ships each plastic bag to the job site with a 3D isometric drawing, detailing the designated apartment's plumbing layout, plus a material list. This approach has the happy advantage of reducing the amount of "explaining" a foreman like Erny finds himself doing on a job site, especially with less-experienced installers.

"I just hand the installer the bag with the fittings and the drawing, saying 'Follow the diagram.' All by itself, that speeds up the install process," he says.

Erny has also found the purchasing and material handling headaches to be much less, thanks to kitting. "The kits contain what we need where we need it, so there's no one running to me, saying, 'Hey, we are out of half-inch tees.'"

Eliminating material shortages, of course, spares Erny from the time-wasting dash to a local supply house for fillins, while his install crew cools their heels. "It may not seem like much, but that plastic bag containing everything we need takes a lot off my plate."

Period of Adjustment

There's a learning curve to climb at the onset of any large commercial plumbing project, particularly one as complex as Applewood Pointe. That was as true for the new kitting service as it was for the Major Mechanical team. But scaling the curve was not all that difficult, reports lead plumbing installer, Jared Hudalla.

"During the early stages of the project, we went through the kits to see what worked best for a particular application in terms of fittings and other components and whether plumbing-layout changes were required," he says. "We wrote our adjustments onto the isometric drawings, and the manufacturer reps took them back to the Uponor team."

This process ensured all the changes would be incorporated into the next set of kits shipped to the job site. "Our corrections were routinely made, allowing us to concentrate on installing," he says.

Hudalla, who became a plumber in 2008, shares his colleague's enthusiasm for Uponor Kitting Services' ability to foster installation consistency.



General Piping Completes Renovation

➤ Continued from page 24

that nearly 80 percent of the valves on this project are grooved valves. NIBCO's grooved butterfly valves were easy and fast to install, and they've performed well."

NIBCO's grooved butterfly valves are faster to install since they have two bolts regardless of their size and the standard lug valves have a minimum of four bolts. with the larger size valves having even more bolts. Contractors also find that the grooved valves are easier to orientate in a system, since they can be pushed and adjusted into place before torque is applied to lock the valve into position. Finally, grooved valves are overall lighter in weight.

Quality Assurance

General Piping has a long history—more than 20 years—of using NIBCO products, especially its valves. "More often than not, NIBCO is our preference," said Richardson.

The majority of General Piping's work is bid/spec, which allows the contractor to choose from several different manufacturers that meet the specifications that are outlined. "NIBCO almost always is an option, so when all things are equal, NIBCO is our go to," added Richardson. "In a competitive, low-bid environment, cost is always important and NIBCO products are always priced competitively, giving us peace of mind in knowing our material cost will be in line with our competitors.

Distribution is available locally in Indianapolis, making it convenient for General Piping to find products in stock, and if they aren't in stock, they are only a day or two away.

"NIBCO's got a great local distribution network," said Richardson. "We know that we can get almost any product we need quickly, which is important on a renovation project such as Lawrence High School, where unforeseen issues arise daily."

Whilepress fitting technology wasn't an option on the Lawrence Central High School project, in recent years, General Piping has been using more and more press fittings on projects. From a business standpoint, General Piping realizes the advantages of pressing because of the labor cost perspective. Pressing installs are quicker and problem free.

"Now, when we have the option of using press fittings, we go exclusively with pressing on copper systems," said Richardson. "And we always choose NIBCO for the same reasons as the valves—quality products—we don't have issues and if we do, they are taken care of immediately."

That quality assurance has made the Lawrence Central High School project, scheduled for completion in fall of 2024, go smoothly so far.

"Really, the only challenges that we faced on this project are the same ones that the entire world is facing—the lead times on many building products have ballooned," said Richardson. "Other than that, the project has gone smoothly.

"Having NIBCO products on this project has been instrumental," said Richardson. "NIBCO products are user friendly; they install without issue and we have the confidence that the company



A shot of the high school's mechanical room.

stands behind its products. I just can't say enough good about NIBCO." G

Uponor North America Announces New VP Appointments for HR and Sales

APPLE VALLEY, MN — Uponor North America (Uponor) has named Erica Amévo as vice president of Human Resources and Matt Bahr as vice president of Sales. Erica will be based in the Twin Cities of Minnesota, and Matt will be based in Washington, D.C. Both positions will re-



Uponor North America

port to Andres Caballero, president, Uponor North America, and will also be members of the company's Senior Management Committee (SMC).

Amévo has served as the interim vice president of Human Resources for the past eight months. She has more than 17 years in the field, and began her career



Matt Bahr, VP, Sales, **Uponor North America**

the interim VP-HR. As the new vice president of Sales, Bahr moves into the role with 11 years of experience in sales and sales oper-

with Uponor more than

10 years ago, moving

from sr. manager to di-

rector before becoming

ations. For seven years, he has served Uponor in several roles with es-

calating responsibility, including sr. director of Sales in the US, Regional Sales director, business development manager, and technical sales representative. Before Uponor, he held sales management positions at Victaulic and Hayward Flow Control.

For more information visit *uponor.com*.



Xylem To Acquire Evoqua in \$7.5 Billion All-Stock Transaction

➤ Continued from page 1

focus on solving the world's water challenges by addressing customers' and communities' most critical needs. Building on Xylem's global leadership in water solutions and Evoqua's leadership in advanced treatment solutions and services, the combined company will be uniquely positioned to develop and deliver an even more comprehensive offering of innovative solutions.

Evoqua, a leader in North America water treatment, complements Xylem's distinctive portfolio of solutions with advanced water and wastewater treatment capabilities, a powerful and extensive network of service professionals and access to a number of attractive industrial markets with resilient, recurring revenue streams. Evoqua's solutions, including digitally enabled offerings, optimize and outsource mission-critical water treatment

systems for customers in high-growth sectors such as life sciences, microelectronics, power and food and beverage. In addition, Evoqua is a leader in the remediation of emerging contaminants, including PFAS.

optimization and corporate costs. In addition, the transaction allows Xylem to maintain its strong balance sheet, which provides the combined company with significant strategic flexibility and optionality.

The transaction unites two companies with a shared focus on solving the world's water challenges.

Xylem and Evoqua generated over \$7 billion in combined revenue in the 12-month period ending September 30, 2022, with \$1.2 billion in adjusted EBITDA. The combination unlocks compelling new growth opportunities and is expected to deliver runrate cost synergies of \$140 million within three years, driven by scale efficiencies in procurement, network

Complementary Businesses

"Solving the world's water challenges has never been more urgent. Our acquisition of Evoqua creates a transformative global platform to address water scarcity, affordability and resilience at even greater scale," said Patrick Decker, President and CEO of Xylem. "The combined company delivers an unparalleled portfolio of

advanced technologies, integrated services and application expertise across the water cycle."

"Together, our complementary businesses will be even more strongly positioned to help our customers and communities tackle their most challenging water needs," continued Decker. "We are excited about building the world's most powerful platform for solving water alongside our Evoqua colleagues."

"Joining forces with Xylem is an exciting opportunity for Evoqua and for our team members. This combination provides a platform to leverage our combined strengths and increase our impact to better address the most pressing and increasingly complex global water challenges," said Ron Keating, Evoqua's President and CEO. "I am incredibly proud of what our team at Evoqua has achieved to date, providing mission-critical water treatment solutions to the market and for our customers. Along the way, we have earned a reputation for quality, safety and reliability around the world. Together with Xylem, we will drive innovation on a larger scale for our customers, positioning us to create even more value for our stakeholders."

Transaction Details

Evoqua shareholders will receive 0.480 shares of Xylem for each Evoqua share, representing a value of \$52.89 per share or a 29 percent premium based on Xylem and Evoqua closing prices as of January 20, 2023.

The transaction, which is anticipated to close in mid-2023, is subject to approval by shareholders of Xylem and Evoqua, the receipt of required regulatory approvals and other customary closing conditions.

Upon closing, Xylem shareholders will own approximately 75 percent and Evoqua shareholders will own approximately 25 percent of the combined company on a fully diluted basis.

Following the closing, the combined company will continue to be led by Patrick Decker, Xylem's President and CEO. Two current members of the board of directors of Evoqua are expected to join Xylem's board of directors.

Kohler Co. Appoints Laura Kohler its First Chief Sustainability and DEI Officer

KOHLER, WI – Kohler Co. has announced that Laura Kohler will be the company's first Chief Sustainability and Diversity, Equity and Inclusion (DEI) Officer, reporting directly to Chair and Chief Executive Officer David Kohler. This new appointment continues the company's legacy of gracious living and marks a significant step forward in accelerating the incorporation of sustainability, social impact and DEI across Kohler's global Kitchen & Bath, Energy and Hospitality business groups and product portfolios.

Throughout her 30-year tenure at Kohler Co., Laura, who most recently held the title of SVP—Human Resources, Stewardship and Sustainability, has helped to formalize and strengthen Kohler's commitment to environmental sustainability and social impact. Her leadership in these areas has led to the creation and success of many Kohler programs, such as Innovation for Good®, the I-Prize, Safe Water for All, and the KOHLER WasteLAB, as well as a commitment to transparency which culminated in the release of the



Laura Kohler, Chief Sustainability and Diversity, Equity and Inclusion (DEI) Officer.

company's first ESG report in 2022.

"Addressing major societal challenges like climate change and water scarcity, while promoting diversity and inclusion and building resilient communities are not only our responsibility as a global company, but are also imperative to engage our associates, grow our business, and manage risk," said David Kohler, Chair and Chief Executive Officer of Kohler Co.

Kohler Co. has been at the forefront

of environmental sustainability and social impact since it was founded in 1873. At the core of Kohler's business is the belief that its best can always be better, which led the company to formalize its sustainability and social impact efforts under the umbrella of Believing in Better: Better Planet, Better Communities and Better Lives. The company first came out with its 2035 Net Zero goals in 2008, and has been expanding its commitment since. As Chief Sustainability and DEI Officer, Laura, under the leadership of David Kohler, will help the company focus on this effort while also fostering a culture of innovation and inclusion.

"I am looking forward to leading these initiatives for Kohler and building on our company legacy as we celebrate 150 years of business in 2023," said Laura Kohler. "I will continue to promote transparency, push for innovative solutions, foster associate engagement, and raise awareness through programs and partnerships around the issues that impact our planet, business and people."

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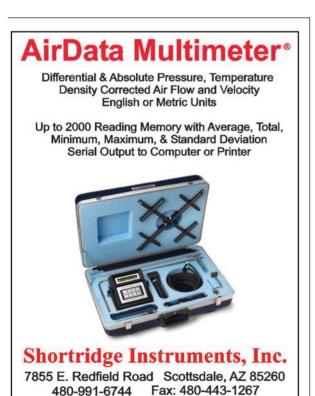


The USWU JATF sheet metal program is a four-year program, which includes a 100-hour safety program divided into 25-hour segments.

➤ Continued from page 19

Keating explains that apprentices begin with the four-month core program, introducing them to hand tools, power tools, blueprints and construction math. First, however, apprentices must attend a 30-hour OSHA course.

"We want to make sure these new individuals going out into the field will work safely on a ladder or using a hand or a power tool so we can minimize or eliminate any injuries happening on the jobsite," Keating says.



www.shortridge.com



Safety comes first at the United Service Workers Union' Joint Apprenticeship Training Fund. Apprentices learn what they need to keep themselves and each other safe and healthy—including learning CPR.

When apprentices return after the holidays in January, they start Level 1 courses in their particular disciplines. The piping programs—fire sprinkler, steamfitting, plumbing and HVAC—are all five-year programs. They go to class for four hours two nights a week and work full-time during the day.

"We don't bring anyone into our program unless we have a job for them," Keating states.

The USWU JATF sheet metal program is a four-year program, which includes a 100-hour safety program divided into 25-hour segments over those four years. "I think it comes to around 175 hours of safety training throughout their apprenticeship," Keating notes. "So they're well-versed in safety."

He adds: "I'm pretty big on safety. Life-changing, on-the-job accidents can affect an entire family. Maybe they must deal with a family member's disability, or what was once a two-income household is now only one. So, their safety is very important. We want to ensure that apprentices recognize hazards and know how to deal with them appropriately."

A Career, Not a Job

Keating attends high-school job fairs, but he prefers one-on-one time with guidance counselors and teachers to educate them on what the USWU JATF is about and what resources are available to them and students.

He is also trying to recruit more women into the trades. Keating works with the global organization Dress for Success at its Long Island location. Its mission is to "empower women to achieve economic independence by providing a network of support, professional attire and the development tools to help women thrive in work and life."

Keating explains: "If you look at any study throughout the country, thousands and thousands of construction jobs are available, looking to be filled. I've been trying to get the young women at Dress for Success to look at our apprenticeship program. It's not all grunt work, and it's not all terrible: it's education, money and benefit packages available to them and, if they are single moms, their children. The work is here and a great opportunity for them to build a career."

He also battles with plumber stereotypes. "It's a different profession than it used to be many years ago," Keating remarks. "We're your next-door neighbor. We're the same person you see at church, the soccer field or the grocery store.

"When you say plumbing, they think of the plumber under your kitchen sink. We're talking about putting office buildings up with plumbing running up 42 floors. If not sized and installed correctly, those systems you put in aren't going to be working properly. These construction trades involve many technical aspects you must be properly trained on."

Keating acknowledges that the construction specialty trades aren't for everyone, but the union isn't looking for bodies to fill spaces.

"We're not looking for people who want jobs; we're looking for people who want careers," he explains. "This is a viable and lucrative career path. This isn't like getting a job at a big-box store and making a career there. Many people do and that's great, but we're looking for career-minded people because of what we offer."

Kelly Faloon is a contributing writer to CONTRACTOR Magazine and owner of Faloon Editorial Services. The former editor of Plumbing & Mechanical magazine, she has nearly 35 years of experience in B2B publishing, with 25 of those years writing about the plumbing, heating, cooling and piping industry. Faloon is a journalism graduate of Michigan State University. You can reach her at kelly@falooneditorialservices.com.

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Contractor Who Ignored Law in Fatal Trench Collapse Surrenders to Police

BRECKENRIDGE, CO – The owner of a Vail construction company facing felony manslaughter charges has surrendered to local law enforcement after the Summit County Sheriff's Office in Breckenridge, Colorado, issued an arrest warrant on Jan. 24, 2023, related to the findings of a federal safety investigation into a deadly trench collapse in November 2021.

In May 2022, OSHA cited Peter Dillon, owner of the now-defunct A4S LLC, after a worker installing residential sewer pipes suffered fatal injuries when the trench around him caved in. The collapse resulted from deteriorating conditions at the project, which A4S LLC could have prevented by using legally required trench protection systems.

OSHA issued three willful citations to A4S LLC for not ensuring the excavation was inspected by a competent person, failing to instruct employees on the recognition and avoidance of unsafe conditions and not having a trench protective system in place. Investigators also issued an additional serious citation for not having a safe means of egress within 25 lateral feet of employees working in a trench.

The agency proposed penalties of \$449,583 and placed the company in OSHA's Severe Violator Enforcement Program.

Criminal Charges

The department referred the case to the 5th Judicial District Attorney's office recommending criminal charges for A4S LLC's refusal to require safety protection, despite worsening trench conditions that included at least one trench collapse.

A4S LLC has since shuttered and Dillon agreed to forfeit any future ownership, leadership or management position that involves trenching or excavation, or the oversight of workplace safety and health.

"There is no excuse for Peter Dillon's failures to protect workers when federal requirements clearly outline and require safety measures proven to save lives," said Regional Solicitor of Labor John Rainwater.

Accountability

Collapses and cave-ins pose the greatest threat to trenching and excavation workers. In 2022, OSHA reported that at least 39 industry workers died, 22 of them in the first six months of the year. The Bureau of Labor Statistics reports that 166 workers died in trench collapses from 2011 to 2018.

"Let this tragedy serve as a reminder to other employers who willingly fail in their responsibilities to keep workers safe that the U.S. Department of Labor will exhaust every resource to hold employers accountable," added OSHA Regional Administrator Jennifer S. Rous in Denver.

Resources

OSHA has a National Emphasis Program on trenching and excavations. Trenching standards require protective systems on trenches deeper than five feet. Additionally, trenches must be inspected by a knowledgeable person and have a safe means of entering and exiting prior to allowing a worker to enter.

Learn more about OSHA at www.osha.gov.

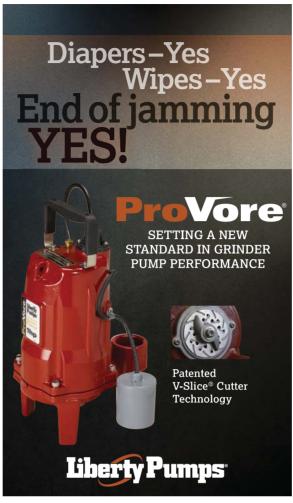














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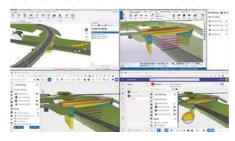
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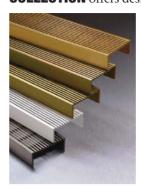
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NEW EBOOK FROM CONTRACTOR

WORKFORCE DEVELOPMENT

The workforce crisis is as bad as it has ever been. Call it a perfect storm: older workers retiring, younger people choosing not to enter the trades, and a tight labor market that has contracting firms fighting tooth-and-nail to find and keep the existing skilled hands.

Here is a selection of 5 articles that will help you navigate this labor turbulence and enable you to develop and maintain your 21st century workforce.



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WORKFORCE DEVELOPMENT



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by Steve Spaulding

Technology and the Next Generation

Right now, the industry has two important conversations going on. The first is about the adoption of digital technology. Over the past two decades, global labor productivity growth in construction has averaged just one percent a year. Compared to an overall growth of 2.8%—and a growth of 3.6% for manufacturing—construction is in the stone age. [1]

Contracting has complex regulations, antiquated procurement processes, and owner/builder/contractor relationships that can be, frankly, adversarial instead of collaborative—but the main reason for that lag in productivity is that other industries have integrated sophisticated software and automation into their workflows.

Contractors have been slow to go digital for several reasons. The most obvious is the nature of the work. It's physically dealing with physical things. Moving lumber, installing pipe, pouring concrete. Sitting at a desk looking at a screen won't get that water heater off the truck.

Then there's the work environment. A job site can be a hostile place for even

rugged tools. Now imagine investing in, say, a dozen laptops for a crew knowing that, statistically, two will walk off the site and five of the remaining will be broken by the time the job is done.

Also, generally speaking, contractors are not "early adopters." They like what they are used to—those things that have

digital is seen by many contractors as a way to get more work out of the fewer workers available.

Which brings us to the second conversation: no one wants to work anymore.

If you read Al Schwartz' column on pg. 14 he calls the current generation a bunch of "layabouts" who don't want to

options than ever. Thanks to the Internet there's a wealth of information available on anything a young self-starter might want to make a job out of. Teach yourself to make video games. To upholster boats. To brew beer. Technology has also ushered in a wave of new jobs that were unthinkable a decade ago. Podcaster? You-Tuber? Social media influencer?!? What's next?

Likewise, technology might just be what draws young people back to the trades. As more contractors adopt digital tech, it might change the image of what the trades look like.

And technology might just make some think twice about the value of that college degree. Artificial Intelligence isn't just coming for the semi-skilled worker anymore. There's an AI, ChatGPT, that recently passed the bar exam. In fact, it looks like it could do a fair job writing an editorial like this one!

Makes a job where you need to physically install things suddenly look a lot more secure.

[1] www.mckinsey.com/capabilities/operations/our-insights/improving-construction-productivity

Digital technology might be what draws young people back into the trades.

proven their worth. To gamble on a new piece of equipment or a new process—and digital transformation involves both—is a risk.

But the trades are starting to catch up. The near-universal use of smartphones is part of it. More digital technology has started to trickle into construction from architecture and engineering. And the pandemic has accelerated everything, remote inspections and remote commissioning in particular.

But perhaps the biggest driver has been the difficulty so many firms have in finding and retaining skilled workers. Going show up on time, don't want to put in the effort, and will quit at the drop of a hat.

I've heard that same story from too many contractors to dismiss it, but I wonder, is it young people who have an attitude problem or the trades that have an image problem? Young people with strong work ethic get steered towards college, leaving the trades with those who, perhaps, lack the same motivation. (Read about the efforts the United Service Workers Union is making to change the image of the trades on pg. 26.)

And because of technology, young people today have more career

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