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## The Evolution of a Prefab Shop—Inception to Post-Pandemic

■ BY JOHN MESENBRINK OF CONTRACTOR'S STAFF

CANTON, MASS.—At E.M. Duggan, safety has and will always be its main concern for its workers. Prefabrication shops offer controlled environments, and what used to be assembled at an open high-rise, under construction, is now being done in a safe workplace environment. “As a company, it is also imperative to make it easier for our workers, whether it is state-of-the-art

► Turn to Prefab, page 45



An E. M. Duggan technician working in the company plumbing prefab shop.

## Biden Signs Pro-PLA Executive Order

■ SPECIAL TO CONTRACTOR

WASHINGTON, DC — On February 4th, President Biden is scheduled to sign an Executive Order requiring the use of project labor agreements (PLAs) on federal construction projects above \$35 million. According to a White House-issued fact sheet published prior to the signing the stated intent of the order is to, “help alleviate the management and coordination challenges that can stymie progress on major construction projects. This helps

► Turn to Biden, page 8



© Valentin Armanu | Dreamstime.com

## Taco Presents Dan Holohan Comfort Award at 2022 AHR Expo

■ SPECIAL TO CONTRACTOR

LAS VEGAS, NV — Bob Barbour, VP, Sales Operations North America at Taco Comfort Solutions®, was presented the 2022 Dan Holohan Lifetime Contribution to Comfort Award at Taco's press conference at the AHR Expo, by John White III., Senior VP, OEM Sales at Taco Comfort Solutions.

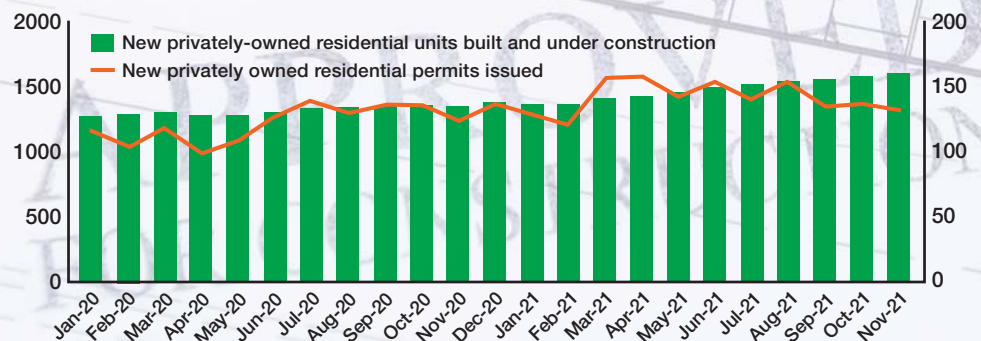
► Turn to Taco, page 10



John Hazen White III presents the Dan Holohan Award to Bob Barbour at AHR Expo 2022 in Las Vegas.

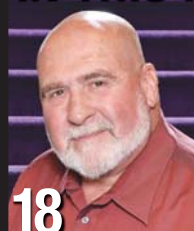
### CONTRACTOR INFOCUS

#### New Privately-Owned Residential Units Built and Under Construction and Permits Issued ('000s)



Source: © Jobber

### IN THIS ISSUE



**18**  
Schwartz on  
**MANAGEMENT**



**26**  
Linhardt on  
**HYDRONICS**



**34**  
Feldman on  
**TECHNOLOGY**

**6** Upskilling Workers Key to Retention  
Study from the Building Talent Foundation.

**28** Historic Building - Modern DHWS  
Royco, Inc., installs a self-balancing system.

### FEATURE

**22** It's Showtime!  
The news from AHR, KBIS, IBS and more

### PRODUCTS



**48**  
MegapressG  
Valves from Viega



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# Zurn Water Solutions and Elkay Manufacturing to Combine

■ SPECIAL TO CONTRACTOR

Zurn Water Solutions Corporation (NYSE: ZWS), a market leader in smart, sustainable water solutions and products, and Elkay Manufacturing Company, a market leader in the highly attractive and growing commercial drinking water solutions business, announced today they have reached a definitive agreement to combine the businesses in an all-stock transaction. Upon completion of the transaction, Zurn Water Solutions shareholders will own



approximately 71% and Elkay shareholders will own approximately 29% of the combined and newly named company—Zurn Elkay Water Solutions Corporation.

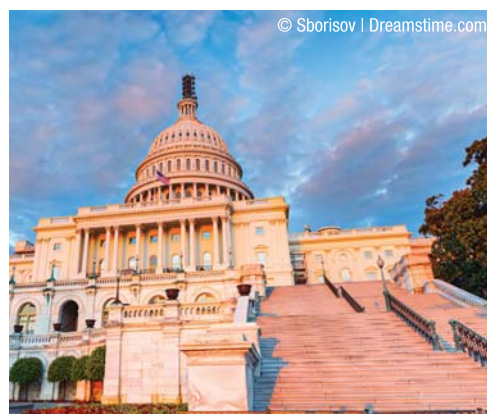
➤ Turn to Zurn, page 12

# U.S. House Passes America COMPETES Act

■ SPECIAL TO CONTRACTOR

WASHINGTON, DC – Three provisions actively supported by Plumbing Manufacturers International (PMI) have been included in the America COMPETES Act passed by the U.S. House of Representatives last Friday. The bill aims to enhance America's global competitiveness by fixing broken supply chains, boosting scientific research, investing in STEM education programs, and more.

➤ Turn to U.S. House, page 14



# National Hardware Show to Join Design and Construction Week in 2023

■ SPECIAL TO CONTRACTOR

ORLANDO, FL — In a boon for members of the design, construction, and home improvement industry, three of the leading trade shows will take place at the same time in 2023, furthering the offering of what attendees can see next year.

The National Hardware Show® (NHS), NAHB International Builders' Show® (IBS) and NKBA's Kitchen & Bath Industry

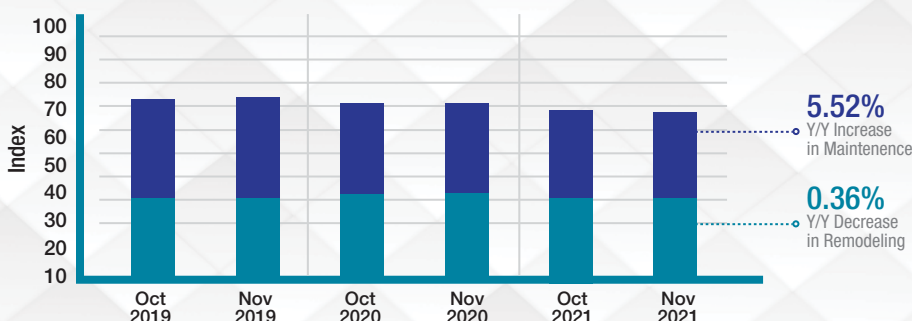


Show® (KBIS) at Design & Construction Week® will be held in Las Vegas, NV January 31 to February 2.

➤ Turn to National, page 44

## CONTRACTOR INFOCUS

### Existing Maintenance and Remodel Volume



Source: Housing Health Report: Rising inflation looms over the housing market.

## Features & Departments

- 6 Upskilling Workers Key to Retention**  
Building Talent Foundation releases workforce engagement study.
- 20 Forum: ICC and the Future of the Built Environment**  
We stop by the Code Council booth at KBIS for a talk.
- 22 It's Showtime!**  
Highlights from the AHR Expo, KBIS, IBS and the WWETT Show.
- 26 Hydronics & Radiant Section**  
Chemical shot feeders, thermostatic valves, ECM pumps and more.
- 44 Home Service Spending Hits New Heights**  
Jobber releases its Home Service Economic Report.
- 48 New Products From the AHR Expo**
- 58 Editorial**  
The Wisdom of Crowds

## Columnists

- 18 Management** by Al Schwartz  
Tech vs. Trade - Where Are We Going?
- 24 Plumbing** by Jake Shevik, Product Manager, Cherne  
Understanding Pneumatic and Mechanical Pipe Plugs
- 26 Hydronics** by Pat Linhardt  
Maybe Next Time
- 34 Technology** by Patti Feldman  
Field & Office and Virtual Connections
- 38 Best Practices** by James Leichter, Contractor & Consultant  
Supercharge Sales Success

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## In Brief

**Fujitsu General America** has partnered with **Target Sales** as its manufacturer's representative in Florida. Through its sales office in Tampa and four remote offices across the state, Target Sales, Inc. now represents Fujitsu's Halcyon mini-split, Airstage J-Series VRF, unitary and Westinghouse mini-split product lines. The region is under the direction of Fujitsu Regional Sales Manager, Hays Bassett.

**Associated Builders and Contractors** announced it has hired Joseph Xavier, a safety and workforce expert with more than 30 years of experience, as its senior director of health and safety. Xavier will lead and contribute to the development and deployment of the overall health, safety and environment strategy for the association, its 69 chapters and its more than 21,000 member companies.

**Billd**, a leading provider of material financing and other payment solutions for commercial subcontractors, has announced the addition of Devon Choo as the company's Chief Operating Officer (COO). Choo joins Billd with nearly 20 years of experience in business development, product management, and strategic management across several prominent companies.

**Business Development Resources**, the training and business coaching authority for home services industry professionals, brought together more than 200 home service contractors and industry professionals at **SPARK 2022** a new in-person event. Held in San Antonio Jan. 12-15, the inaugural SPARK event hosted representatives from 95 home service businesses with a combined total annual revenue of \$500 million.

At the start of 2022 **Service Nation** announced a new program for contractors that are looking for specialized help with improving their businesses. Alliance Premier pairs contractors with a specialized coach that will help them reach a specific goal within a defined time. There are currently over 20 specialized Alliance Premier coaches that can help you target any aspect of your business. Call 877-262-3341 or email Tom Peregrino ([tperegrino@servicenation.com](mailto:tperegrino@servicenation.com)) to learn more.

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## Top Stories

- John W. Danforth Promotes Three to VP
- Franklin Electric Announces Recipients for Outstanding Achievements
- IAPMO Supports Passage of America COMPETES Act
- ThermOmegaTech, Grundfos Announce Partnership

## Videos & Media Galleries



## BOOKMARK OUR CORONAVIRUS NEWS PAGE

For the latest news on the federal and local response, code and regulation developments, opinions and best practices from industry experts and more, bookmark CONTRACTOR'S Coronavirus News Page: [www.contractormag.com/covid-19](http://www.contractormag.com/covid-19).

## How Much Do You Know About Radiant Heating and Cooling?

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- ▶ A surprising secret for contractors to get more time in their day
- ▶ The engine that could: how contractors can produce a solid business plan
- ▶ 8 Simple ways to boost your monthly cash flow

## 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](http://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](http://www.Contractormag.com).

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<sup>1</sup>Source: Rheem Leak-Sensing Data Review. Average grain of sand is 100 micrometers. Calculations from test include flow through an orifice of this size, driven by a pressure of 40 PSI, resulting in approximately 0.1 gallons/hour flow rate. <sup>2</sup>SS model only.



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# Building Talent Foundation: Upskilling Workers Key to Better Retention

SPECIAL TO CONTRACTOR

**W**ASHINGTON, DC — Building Talent Foundation (BTF) today announced the main findings of a residential construction workforce engagement study designed to probe into tradespeople opinions about their career plans. To improve industry strategies for building talent retention, BTF launched the survey with the support of Leading Builders of America (LBA).

Amid increasing competition for frontline workers due to the COVID-19 pandemic, BTF and LBA sought to better understand the current levels of engagement and priorities among tradespeople working on residential construction job sites. The levels of engagement of this group as measured in this study are comparable with the average engagement levels for all US companies in all industries and were higher than those in the Healthcare and Manufacturing industries, according to 2021 data from Perceptyx. BTF and LBA will use this data to address the concerns illuminated by the study, create resources to disseminate throughout the industry, and work with trade partners who employ these tradespeople so that levels of engagement and retention can be improved at this critical time and into the future.

## Findings

The results of the inaugural Homebuilding Workforce Engagement Survey are:

- Out of all tradespeople working on residential construction job sites, 51% are planning to stay in their jobs, 35% are thinking about another job, and 14% are disengaged yet not considering leaving their job.
- Of those thinking of another job, more than half (51%) are considering leaving residential construction for other sectors, and more than 1 out of 3 (34%) are thinking of leaving construction for opportunities in other industries.



## Building Talent Foundation releases the results of residential construction workforce engagement study.

- The group most likely to be thinking of another job is those tradespeople with 1 to 5 years of experience. By the time they have been trained, invested in, and add real value to employers, over 2 out of 5 (43%) of this group are thinking of another job.

The top reason survey respondents gave for staying in their jobs was that they had opportunities for career advancement, training, and learning new skills. The next most cited reason was their boss treating them well and feeling valued and respected at work. On the other hand, a lack of career advancement, training, and development was the top reason

people wanted to leave their job. Therefore, while compensation does matter, this study reveals that it is not the most important factor in employee engagement.

## Methodology

BTF engaged the Oxford Centre for Employee Engagement (OCEE) to conduct the survey to listen, learn, and respond to those with the most significant insight into the reasons for the turnover rate—the residential construction workers. To help residential construction industry employers to improve talent engagement and increase employee retention, and drawing from the research and experience of OCEE, BTF

is developing best practice guidelines to share widely within the industry.

The OCEE research team, led by Human Resources expert Professor William Scott-Jackson, received and analyzed the results from the talent pool about why they stay in or leave their jobs. A total of 1,462 respondents completed the survey, 61% of respondents work on job sites, and 39% are in office/administrative roles.

## Investing in the Future

Developing strategies to engage skilled workers is crucial, as demonstrated by a Construction Labor Market Report recently published by the HBI. The residential construction industry will need to train and place an overwhelming 2.2 million new workers within the next three years to meet the United States' housing demands. The Home Builders Institute (HBI) supported the BTF engagement study by distributing the survey questionnaires to its alumni network.

"The investment that we are collectively making to attract, train, hire and develop talent in the homebuilding sector must be matched with adequate investment in engaging, upskilling, and retaining employees in our industry," said Branka Minic, CEO of BTF. "Building Talent Foundation is committed to working with all industry stakeholders to develop and implement programs for improving workforce engagement."

"This survey is a strong warning signal and an opportunity for employers to make sure their people see a clear future for themselves and are well-led. There are well-founded, relatively simple solutions to both these issues (to be outlined in the Final Report) so that even the smallest trades firms can better retain, develop and maximize the value of their people," stated Professor Scott-Jackson.

To measure changes in workforce engagement in the residential construction industry over time, BTF plans to conduct the survey biannually. **C**



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# Biden Signs Pro-PLA Executive Order

► **Continued from page 1**

projects get completed on time and helps the government get the best value for taxpayers' dollars."

(You can read the fact sheet at: <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/03/fact-sheet-president-biden-signs-executive-order-to-boost-quality-of-federal-construction-projects/>.)

Based on FY2021 figures, this order could affect \$262 billion in federal government construction contracting involving nearly 200,000 workers on federal construction contracts. Additionally, the President's Executive Order directs the departments of Defense and Labor, along with the Office of Management Budget, to lead a training strategy for the nearly 40,000-person strong contracting workforce on the

implementation of this Order's policy.

Associated Builders and Contractors came out in strong opposition to the Order.

"President Biden's new policy will not help America 'Build Back Better,'

executive order rewards well-connected special interests at the expense of hardworking taxpayers and small businesses who benefit from fair and open competition on taxpayer-funded construction projects.

## Associated Builders and Contractors strongly opposes the order calling it anti-competitive.

instead, it will exacerbate the construction industry's skilled workforce shortage, needlessly increase construction costs and reduce opportunities for local contractors and skilled tradespeople," said Ben Brubeck, ABC vice president of regulatory, labor and state affairs. "This anti-competitive and costly

"Research has demonstrated that government-mandated PLAs increase construction costs by 12% to 20%, which results in fewer construction projects and improvements to roads, bridges, utilities, schools, affordable housing and clean energy projects—and the creation of fewer jobs," said

Brubeck. "PLAs steer contracts to unionized contractors and workers at the expense of the best-quality non-union contractors and workers who want to compete fairly at a price best for taxpayers.

"PLA mandates are bad public policy because they effectively exclude the nearly 9 out of 10 U.S. construction workers who choose not to join a union from building taxpayer-funded construction projects," said Brubeck. "These controversial agreements hold a third of employees' compensation for ransom unless they join a union, pay union fees and prop up struggling union pension plans. PLAs also create excessive cost burdens and risks for high-performing nonunion contractors, which built more than half of the federal government's large-scale construction projects during the past decade and are more likely to be small, women- and/or minority-owned businesses.

"Because 87.4% of the construction workforce does not belong to a union and the construction industry faced a skilled labor shortage of 430,000 people in 2021 alone, the Biden administration would be best served by promoting inclusive, win-win policies that welcome all of America's construction industry to realize the potential of the recently passed Infrastructure Investment and Jobs Act to rebuild our nation's crumbling infrastructure, increase accountability and competition and reduce waste and favoritism in the procurement of public works projects," said Brubeck.

The Biden administration has also recently enacted new policies encouraging government-mandated PLAs on private, state and local government construction projects receiving federal funding through the U.S. Treasury, Transportation, Agriculture and Interior departments, which has resulted in pushback by GOP governors.

ABC, Build America Local and the National Taxpayers Union have been asking lawmakers to oppose PLAs and cosponsor fair and open competition legislation (H.R. 1284/S. 403) on federal taxpayer-funded construction projects. Similar pro-taxpayer legislation has been enacted in 24 states. **C**

## Keynote Speakers Announced for Seventh EWTS

ONTARIO, CA — Dr. Richard Thorsten, chief impact officer for Water.org, and Robert Puente, president and CEO of the San Antonio Water System, will deliver the keynote addresses at the seventh Emerging Water Technology Symposium (EWTS), scheduled for May 10-11 in San Antonio. The EWTS is co-convened by the Alliance for Water Efficiency (AWE), the American Society of Plumbing Engineers (ASPE), the International Association of Plumbing and Mechanical Officials (IAPMO) and Plumbing Manufacturers International (PMI).

Thorsten oversees collaboration and innovation across the Global Impact department to generate a credible evidence base to advance insights, influence action, and contribute to thought leadership. His team works with water and sanitation enterprises and service providers to find effective ways to maintain and scale Water.org's programs to improve the health and welfare of people living in poverty worldwide.

Puente was appointed San Antonio Water System's president and CEO in May 2008. As chief executive of one of the nation's largest utilities, he provides leadership in delivering water and wastewater services to more than 1.7 million consumers, developing new water resources, continuing



Robert R. Puente



Dr. Richard Thorsten.

infrastructure upgrades throughout the community, and building regional partnerships. As one of the policy pioneers of modern water supply management in Texas, Puente has helped shape and steward key landmark regional water issues.

In addition to the keynote addresses, the EWTS will feature presentations and discussions on today's most pressing water-related issues, including: updates on the status of research activities and mitigation strategies for Legionella and other opportunistic pathogens in water distribution and premise plumbing systems; discussions on the unintended consequences of water efficiency that threaten water quality and water system efficacy; new technologies and information on water reuse and alternate water sources; a demonstration on how young students

are thinking about and working toward solutions for our global water problems; and much more.

"This year's program is shaping up to be the best yet. Dr. Thorsten's and Mr. Puente's presentations will definitely set the tone for an impactful and relevant symposium," said Tony

Marcello, IAPMO senior vice president of Training and Credential Services. "We are extremely thrilled with their involvement and look forward to their presentations with great anticipation."

The biennial symposium provides a platform for plumbers, contractors, engineers, manufacturers, and water-efficiency experts to introduce new technologies for the plumbing and mechanical industries, and to discuss emerging trends, challenges, and opportunities important to anyone who is concerned about how water is used in the built environment.

Attendees are advised to register early, as seating is limited for the EWTS. The early-bird rate of \$495 ends March 15. Additional information and details on how to register for the symposium may be found at [www.ewts.org](http://www.ewts.org). **C**



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# Taco Presents Dan Holohan Contribution to Comfort Award to Bob Barbour at AHR 2022

► **Continued from page 1**

Barbour began his career at Taco as an incoming material inspector in 1978 before finishing his civil engineering degree at the University of Rhode Island.

## Commitment to the Industry


Through his 44-year tenure at Taco, Barbour held 11 positions there, including engineering management for fabricated products, VP of new business development, and regional sales manager. Barbour believes that his greatest contribution to Taco may be the introduction of TacoNet, a product selection software that assisted in sizing and selection of HVAC components. This software was a game-changer for Taco's

distribution, condensing the product specification process from hours to minutes. It was the precursor to all sizing and selection software now offered by Taco.

determined energy standards for pumps in the US.

Barbour also became an expert on air elimination in hydronic systems. His presentations to trade professionals in

"If you look at the whole Taco family, they're all trying to pull on the rope together in order to serve our customers and grow the overall business," said Barbour, after receiving the award. "Because we're a family, we put that extra effort forward to help the industry."

The Dan Holohan Lifetime Contribution to Comfort Award is given annually to an HVAC professional or company that has made a substantial contribution to comfort technology, advancement, or training while displaying the exceptional good humor and love of people exhibited by Dan Holohan throughout his long career. Past award winners include Dan Holohan, Robert Bean, Bruce Marshall, Dan Foley and John Barba. 

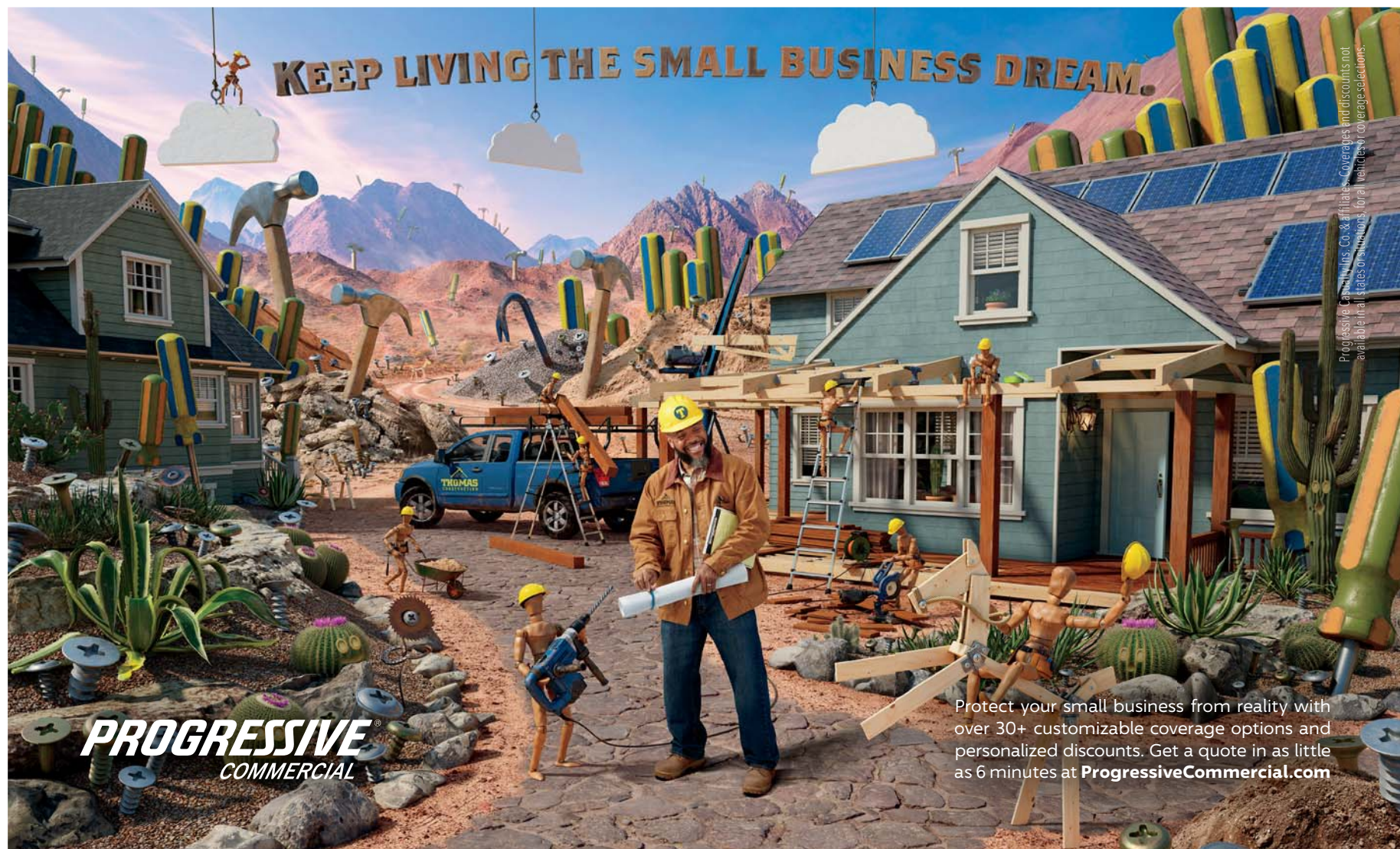
## Award-winner Bob Barbour has been a member of ASHRAE for more than 30 years.

Barbour has been a member of ASHRAE for more than 30 years. He's been involved at the national level with various technical committees. He also served the DOE Conservation Committee while the group—in collaboration with the Hydraulic Institute—

the US, Canada, Mexico and the Middle East typically drew large crowds.

## Industry as Community

Barbour lives with his wife in Rhode Island. His two grown children share his University of Rhode Island alma mater.



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# Zurn and Elkay Manufacturing to Combine

## ► Continued from page 3 A True Game-Changer

"This transaction is a true game-changer as we create an even stronger pure play water company by combining with the iconic brand, Elkay," said Todd A. Adams, Chairman and CEO of Zurn Water Solutions. "The combination puts us well on our way to doubling the size of the business over the next couple of years while enhancing our competitive advantage within specified water solutions. We also add the high-growth, and increasingly essential, drinking water sector in our portfolio and have a clear path to capitalize on the significant synergies the combination will generate."

"Elkay is viewed as the 'gold standard' in providing clean drinking water within institutional and commercial buildings. What makes the combination so compelling is the alignment of our shared values and

cultures, commitment to serving our customers and what we can accomplish together by providing an even more comprehensive package of innovative, specified water solutions that provide water safety, water quality and water conservation to critical verticals like education and healthcare.

"I want to thank Ron Katz, Senior Member of the founding family, and

to build upon the incredible legacies of both businesses as we come together to create an even brighter future as Zurn Elkay Water Solutions."

## Core Values

Elkay has been family-owned since it was founded in 1920 and has been making innovative products and delivering exceptional customer service

residential and commercial settings.

"We knew we could increase our long-term competitive position by combining with another complementary brand," stated Ron Katz, Senior Member of the founding family. "We were pleased to find a well-respected partner in Zurn Water Solutions, with their strong, people-centric midwestern values and deep commitment to quality, ethics, and customer satisfaction that mirrors our own."

"This combination clearly creates a unique and dynamic set of competitive advantages for our customers to capitalize on the unrivaled product solution breadth and depth we'll bring to the marketplace," said Adams. "Together, Zurn and Elkay will also provide our customers the capability to advance their ESG initiatives while reducing their overall initial and operating costs while providing a safe, clean environment for students, patients, patrons, and people within the public and private spaces they operate. Finally, we believe this combination creates an attractive platform to provide superior shareholder value as the combination allows for increased growth, margin expansion, higher free cash flow and improved leverage all while providing ample room for continued investments in growth."

## Governance and Locations

Upon closing, the combined company will continue to be led by the existing Zurn Water Solutions Board of Directors with the addition of two new directors who currently serve on the Elkay Board of Directors. Todd Adams will remain Chairman and Chief Executive Officer, Craig Wehr will remain President of Zurn Water Solutions, and Ted Hamilton will remain President of Elkay Plumbing.

The combined company will continue to trade under the ticker NYSE: ZWS. It will be headquartered in Milwaukee, Wisconsin and will continue to maintain a presence in the Chicago area where Elkay is headquartered.

To learn more about Zurn visit [zurnwatersolutions.com](http://zurnwatersolutions.com).

To learn more about Elkay visit [www.elkay.com](http://www.elkay.com).

## The merger will create a world-leading company offering sustainable water solutions.

Tim Jahnke, Chairman of Elkay, for believing in the power of the combination and the entire Elkay family for their confidence and commitment to work together to create something special. It's our intent to preserve the strong culture and values at Elkay and we are excited

for over 100 years. Headquartered in Illinois, Elkay has similar midwestern core values as Zurn. While the business started in sinks, their continued innovation and growth has led them to currently being a market leader in drinking water as well as sinks in

# CEDIA and Kohler Co. Announce Partnership

ORLANDO, FL – CEDIA, the association for the home technology industry, today announces a partnership with Kohler, a global leader in the design and manufacture of kitchen and bath products. This partnership will give CEDIA members in the United States access to exclusive discounts and benefits. CEDIA members in priority markets will also get early access to Kohler's Authorized Service Rep (ASR) program, connecting them directly to new customers.

"CEDIA's members fulfill a crucial need for Kohler as they expand their connected product offerings," says Giles Sutton, "Not only do our members have the training and experience to deliver reliable and delightful smart product integrations, but they also know the luxury market. CEDIA members are the ideal ambassadors for Kohler's most technologically sophisticated offerings."

CEDIA members can access their new Kohler discounts and benefits through Propel, an affinity program that gives CEDIA members access to special offers on innovative technology in emerging



markets. All CEDIA integrators in the United States can sign up for Level 1 of the partnership, which includes discounts on select Kohler products, dedicated virtual training with the Kohler Smart Home team, and a direct line of contact to product experts and Kohler's inside sales team.

CEDIA members in the Los Angeles, Miami, and San Francisco areas can also apply to The Kohler Authorized Service Rep (ASR) program, which is currently in its pilot phase. The ASR program directly connects integrators with Kohler customers in need of service, warranty, and setup support, bringing the technology designer into projects during the early stages of new installations. CEDIA members who sign up and are accepted into the

program will receive additional training and entrance into Kohler's business portal. Kohler intends to expand the ASR program into additional markets as demand requires.

"Kohler enhances the user experience by seamlessly integrating technology into our kitchen and bath product design," says Kohler Associate Channel Manager Megan Rapp. "Essential to our success is ensuring our customers have access to trained and certified professionals for installation and support. Kohler is proud to support CEDIA, whose members have the expertise to deliver technology-driven experiences in every room of the home."

The NKBA's 2022 Design Trends Survey finds that under 10 percent of respondents regularly work with technology integrators. This first-of-its-kind partnership between CEDIA and Kohler, a major kitchen and bath brand, gives integrators direct access to one of the largest home improvement categories in the country, bringing smart home expertise to new customers.

For more information visit [cedia.net/propel](http://cedia.net/propel).



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# U.S. House Passes America COMPETES Act

## ► Continued from page 3

The three provisions are the National Institute of Standards and Technology (NIST) reauthorization, the INFORM Consumers Act, and the Ocean Shipping Reform Act. PMI will continue to advocate strongly for these measures as a House-Senate conference negotiates the differences between the America COMPETES Act and the Senate's United States Innovation and Competition Act in the weeks ahead.

"PMI has advocated for these three provisions because they will help the plumbing manufacturing industry assure safe and reliable plumbing systems to strengthen water quality and water efficiency, protect shoppers from counterfeit or stolen merchandise, and make supply chains involving ocean shipping more efficient," said PMI CEO and Executive Director Kerry Stackpole.

Included in the House bill are the following key provisions of importance to plumbing manufacturers:

- The **National Institute of Standards and Technology (NIST) for the Future Act**

research of premise plumbing and to promote new and innovative technologies that can improve the safety, water efficiency and reliability of our plumbing systems in buildings and homes.

## The Act includes three PMI-backed provisions.

reauthorizes NIST funding authorizations for FY22-FY26. Companies, academic institutions, and other federal agencies rely on NIST's laboratory programs to provide foundational research and material development for their products and programs. The authorizations include the **NIST Plumbing Research Act** to re-establish a federal laboratory to conduct

- The **INFORM Consumers Act** modernizes the nation's consumer protection laws and safeguards America's shoppers, with a particular focus on addressing the sale of counterfeit and stolen merchandise on e-commerce platforms. Organized retail crime is happening all over the nation, where bad actors are stealing from home improvement stores on a

large scale and then selling those products online. Counterfeits, which are often found on leading online marketplaces, pose a serious threat to America's economic competitiveness.

- The **Ocean Shipping Reform Act** represents the first major update to U.S. maritime law in more than 20 years. It will level the playing field by giving the Federal Maritime Commission greater authority to regulate harmful practices by carriers and setting rules on what fees carriers can reasonably charge shippers and transporters. Congestion at ports and increased shipping costs pose unique challenges for plumbing manufacturers, which have seen the price of shipping containers increase four-fold in just two years. **C**

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Touchless flush is powered by a compact battery-operated sensor module that can easily be mounted on the wall, stall or tank within three feet of the toilet. Inside the tank a battery-operated flush control module attaches easily to

the flush control tower. To trigger an automatic flush, simply wave a hand over the sensor face within a 1 ½-inch distance for approximately two seconds. Battery life is one year\*; if batteries need replacing, a push-button actuator on the side of the tank allows for manual flush and continued operation.



- Battery operated
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- Simple wave activates flush

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From touchless toilets to urinals to bathroom faucets to kitchen faucets, the American Standard touchless product line is designed to ensure a more hygienic experience for your customers. As you'd expect from a brand with 150 years of experience, the products look beautiful and perform beautifully in residential or commercial installations.



American Standard is committed to improving everyday life in the bathroom and kitchen. Now's the time to create a cleaner, safer environment with the touchless flush toilet.

Learn more at [cleanerhands.com](http://cleanerhands.com).

\*One-year battery life powered by 3AAA sensor and 4AA control module batteries (included) is based upon an average of 12 flushes per day.

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*American Standard*



by Al Schwartz  
PLUMBING CONTRACTOR



# Tech vs. Trade - Where Are We Going?

**A**fter reading about the AHR confab and all the new tech stuff coming to market, it is well to remember the time frame in which most of these innovations have taken place. It was not very long ago that the trades, pre-digital of course, were more reliant on personal skills and experience than on tech. While the technical paradigm is changing daily, we should not lose sight of what it takes to be a craftsman today... which is to say that things have not really changed at the base level.

## American Plumber Stories

If you haven't tuned in to watch any of "American Plumber Stories" ([americanplumberstories.com](http://americanplumberstories.com)) short films produced by Pfister Company, you are missing really good stuff. The short videos are professionally done, complete with a catchy "bumper" song done by the host, army veteran and country artist Craig Morgan, and highlight the many facets of our trade from a lot of different angles.

We all know that the labor situation in the construction industry, across the board, is abysmal. What this series shows are vignettes of how we in the trade are addressing it, as well as highlighting some of the successful plumbing shops, and the plumbers who made them, across the country.

Personally, I enjoyed watching the shows that highlighted the high school kids and entry level apprentices. The enthusiasm is contagious but, more importantly, the comments regarding college after high school were enlightening. Listening to young people learning a trade talk about how, early on, they knew college was not for them, but working with their hands and building things was, really brings into sharp focus what the current "go to college to get a good job" narrative is missing.

## Where did we go wrong?

Some of you readers are old enough to remember shop classes in high school. Those classes were the crucible that gave students a taste of what it is like to make something, and to work with one's hands. Many a young person



**It was not very long ago that the trades, pre-digital of course, were more reliant on personal skills and experience than on tech.**

found out working with their hands and making something gave them a satisfaction that dry book learning did not. Moreover, many of those students, once exposed to manual skills, decided to go into the trades. Not for the money—although even back then the pay was above average even for apprentices—but because the trades held their interest and gave them something that fed their souls.

Somewhere between shop class and the digital revolution we made a wrong turn, and we are now seeing the result. By denigrating a trade career for the past fifty or so years, we have managed to stigmatize two generations of American youth. Of course, that is not the only reason we are finding it difficult to fill our depleted ranks, but it is a big one.

More than once, during the two seasons of American Plumbers Stories, the old cliché description of a plumber is trotted out: big fat guy with his butt crack hanging out, makes a mess in your house, doesn't really fix things and charges too much. Fortunately, those referencing that old cliché are

doing so in a way that dispels it by pointing out its fallacy.

## Tech vs. Trade Skills

It is great to see how the digital revolution has made a difficult, physically demanding trade, easier. Add to that the enhanced ability of today's service plumber to diagnose problems that heretofore had been difficult, if not impossible, to do without a lot of extra destruction of floors and walls. The advent of affordable tech like sewer cameras and sonar to locate underground or hidden piping, and the problems that come with them, has been a huge leap forward.

While that and other tech improvements have made the job easier, the work itself has not changed much. Skills are still required to effect repairs once the problem has been located. The tradesman still must know how to do the job and must have the requisite skills to do it in what my dad used to call a "workmanlike manner."

## What it Takes

This magazine has a feature which highlights some of the most atrocious

plumbing work I have ever seen... and I have seen a lot of atrocious plumbing work! For the most part, the work is done by the homeowner or a handyman, but some of it is done by what we might marginally call a plumber.

These disasters point up the fact that trade skills, properly taught over a five-year apprenticeship, are an invaluable part of the future of the craft. Think about that last sentence for a moment if you will. "A five-year apprenticeship." What career today requires that much training? Doctors and lawyers, yes. I'll allow that structural engineers and architects have long apprenticeships too, but few have the intensive immersion that the plumbing trade does.

A five-year apprenticeship means that, for at least forty hours per week, every week, for five years, the apprentice is immersed in learning every aspect of the trade. Physical skills are, or should be, honed to a fine edge. Areas where the apprentice is lacking are, or should be, addressed and focused on improving. Formal education, such as code classes, are a requirement as is a practical exam before the apprentice can achieve journeyman status.

Think about that for a minute. Then think about what we have, or haven't given, to our younger generations. How many young people today do you know, or have seen, who would invest their time and labor to work in a trade that requires such dedication? Even when you factor in the monetary compensation a career in the trades can give them, many would just as soon use the phrase "you want fries with that?" ... and carry that huge student loan debt to boot! **G**

*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](mailto:allen@proquilldriver.com).*

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# ICC and the Future of the Built Environment

■ BY STEVE SPAULDING OF CONTRACTOR'S STAFF

ORLANDO, FL — The International Code Council (ICC) is the leading global source of model codes and standards. Moreover, the ICC offers a full suite of building safety solutions including product evaluation, accreditation, technology, training, and certification. With 377 chapters in 38 countries around the world the organization's work impacts the health and safety of nearly two billion people.

This February 8-10, ICC returned to Design & Construction Week, the combined International Builders' Show and Kitchen and Bath Industry Show held in Orlando. Both the Code Council and ICC-ES (their Evaluation Service branch) were preferred sponsors of DCW, as well as exhibitors. The Code Council hosted several in-booth presentations to share how ICC-ES solutions can help manufacturers achieve their growth and innovation goals.

## The 2024 International Plumbing Code

At the booth we got a chance to speak with Matt Sigler, PMG Executive Director for the ICC. Sigler is something of a newcomer to the organization, only working at the Code Council as of July of 2021—but he's an old hand when it comes to plumbing codes and code development having spent the previous seven years as Technical Director for Plumbing Manufacturers International.

Last year the Code Council released version 2021 of its International Plumbing Code, and they are currently hard at work shepherding version 2024 through development. The IPC has currently been adopted, either at the state or local level, by 37 states as well as Washington, DC, Puerto Rico and Guam. The new version will include updates and adjustments in keeping with the latest data, but Sigler says there will be three big things to look for in 2024:

- New drain and vent vacuum testing for cold climates
- New 2.0 GPM maximum flow rate requirements for showerheads



**CONTRACTOR paid a visit to the International Code Council booth during Design & Construction Week to talk about the latest developments in codes and standards.**

- An allowance for plastic pans under gas-fired water heaters (previous versions of the code have not allowed plastic pans under any circumstances)

## Building Safety Month

This May will see the Code Council's 42nd annual Building Safety Month. For 2022 the theme is "Safety for All: Building Codes in Action." Each week also gets its own theme:

- Week One (May 1-8):** "Planning for a Safe & Sustainable Tomorrow"
- Week Two (May 9-15):** "Exploring Careers in Building Safety"
- Week Three (May 16-22):** "Understanding Disaster Mitigation"
- Week Four (May 23-31):** "Creating a Safe & Abundant Water Supply"

The educational and interactive campaign raises awareness about the

importance of building codes in ensuring safety in the spaces in which we live, work, and learn. Each year, the Code Council, its members, and industry professionals from all areas of the design and construction industry highlight building safety through proclamations, events, legislative briefings, and more.

This year, Sigler says, ICC will be educating on water infrastructure, particularly in light of the recently passed infrastructure bill. Topics will include:

- Water reuse and rainwater harvesting systems (for potable and non-potable use, likely in collaboration with ARCSA, the American Rainwater Catchment Systems Association)
- Developing a national standard for private sewage disposal systems (likely in conjunction with NOWRA, the National Onsite Wastewater Recycling Association)

- Educating on the fundamentals of water supply connection
- Starting a focused conversation about the cost and potential of desalinization

Sigler noted that the greatest source of potable water in Israel comes from desalinization plants, while here in the US (despite large plants in both Carlsbad, CA and Tampa, FL) it's only a drop in the bucket. To meet the combined challenges of population growth and climate change, particularly in the western states, the United States needs to take a good look at what an investment in desalinization can accomplish.

## Developing Premier Training for Plumbing Professionals

You can develop the best codes and standards in the world, but they won't do anyone any good if they aren't implemented correctly. To that end, the Code Council is hoping to collaborate with various companies specializing in training (both in-person and virtual). Sigler said that just during his time at DCW he'd encountered one or two companies he could see ICC working with.

Highlighting the importance of training, on February 9th, the second day of Design & Construction Week 2022, ICC announced that it had acquired all assets of Winn's Career Education, Inc. to integrate with the organization's staff expertise and provide training resources for plumbing and piping professionals.

Winn's Career Education, Inc. has primarily served plumbing and piping professionals in Texas, Florida, Louisiana and Colorado. As the Code Council's very first Platinum Preferred Provider, Winn's has worked closely and over an extended period with Code Council staff in multiple states. Winn's has provided co-branded ICC/WCE training materials for live, online, and self-paced courses.

In addition, Matthew Winn, company CEO, will be taking a new position at the Code Council as Senior Vice President of Training & Education. **C**





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# It's Showtime!

Large, in-person events are back. Here is just a small sampling of the people, innovations and moments captured during the AHR Expo, KBIS, IBS and the WWETT Show.

**P**eople had booked hotels and bought plane tickets. Marketing departments had put together booth schemes and press kits and set up days worth of interviews. Trucks full of displays had been loaded. And then, just before the turn of the New Year, the Omicron variant of COVID swept North America, bringing a sudden spike in infections and hospitalizations.

As it turned out, all of the big shows went forward, albeit with extra

precautions in place (masking requirements, on-site testing, requiring proof of vaccination and more). Some attendees backed out, and some exhibitors either scaled back their presence (bringing a smaller staff, canceling after-show parties) or pulled out altogether.

As Bill Strang, President, Customer Experience for Toto USA put it, "With so many people on our manufacturing line out sick, we couldn't justify traveling with a large contingent to [KBIS]

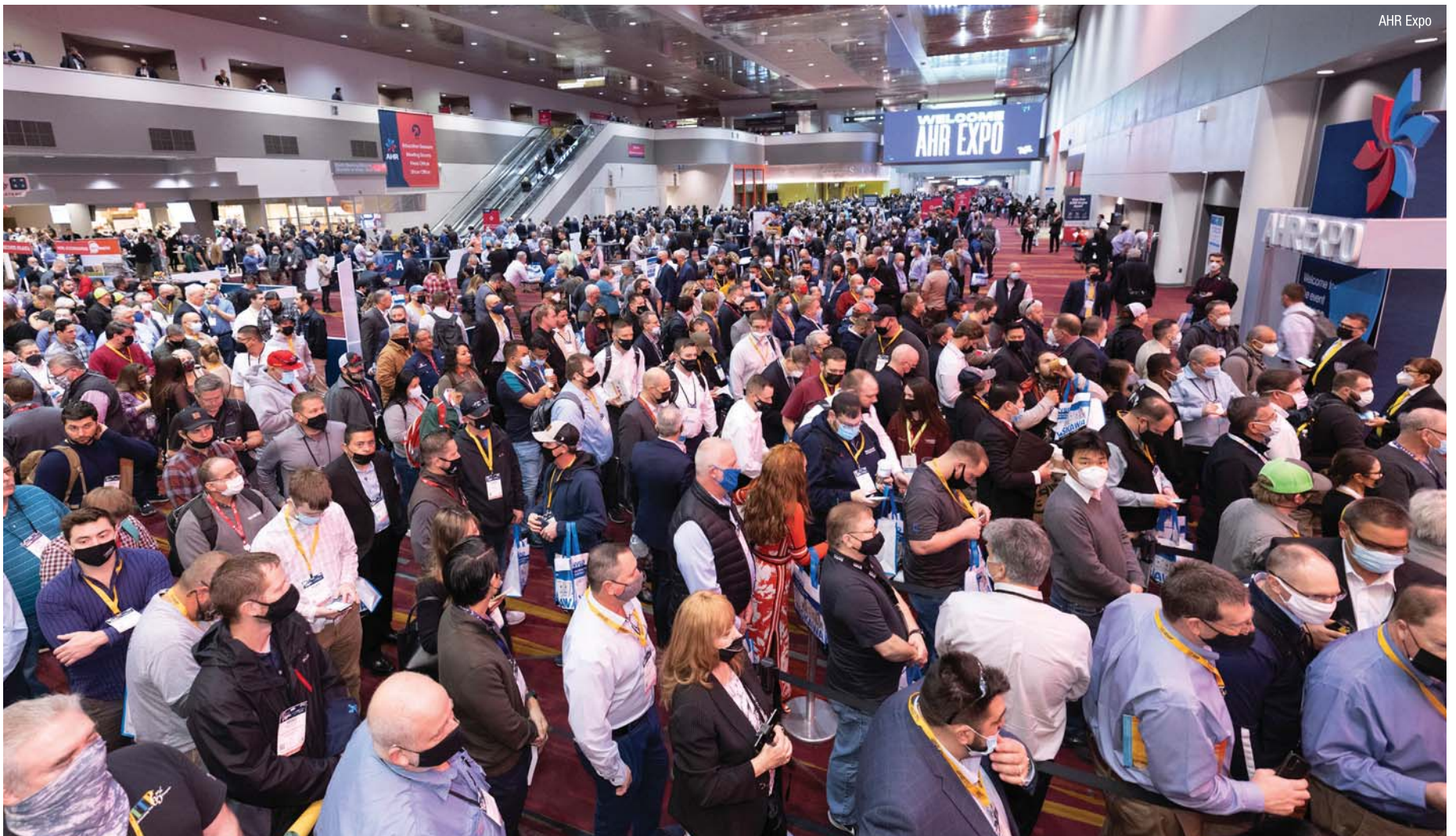
and back again." Toto opted for a series of virtual meetings instead, while setting up video kiosks with live chat in what would have been its booth space.

For those who did attend, many remarked on how unexpectedly robust the turnout was. Quite a few when walking the show expressed a sense of amazement at the new products on offer—as if so many innovators had been saving up their best ideas over the last two years.

And everyone seemed glad for a chance at in-person networking after so long. Here are a few impressions and insights from 2022's first big shows.

## AHR Expo - Las Vegas

The AHR Expo returned to Las Vegas January 31st - February 2nd, after a forced hiatus in 2021. The event represented an eagerness to return to business drawing 30,678 attendees. The success of the show signaled the contracting community's readiness to take





on the challenges and opportunities ahead with renewed optimism.

"It was impossible to miss the energy in the halls this year," said Mark Stevens, show manager. "There have been some heavy ups and downs across the industry in recent years and we, as a community, needed to feel the inspiration that happens when we gather together under one roof."

Attendees were eager to be back in the booths experiencing new products and methods that support their work in the field. It was evident from every corner of the show floor that this industry is bursting with prospects.

A total of 1,573 exhibitors spread out over 443,769 sq. ft. in the Central and North halls, packing the floor with an explosion of innovation and new products.



Out on the show floor.



Expert roundtable at the Podcast Pavilion.

"We and our [manufacturer] member companies that exhibited were very pleased with the quality of the Las Vegas Expo. We heard comment after comment about the quality and number of attendees and how grateful everyone was to get back together with their industry colleagues and customers," said Stephen Yurek, president of AHRI.

## Back to the Booths

Inside the exhibitor booths this year company reps and attendees were busy catching up on lost time. The challenges in the supply chain and other COVID delays have opened the door for new ways of thinking about partnerships.

"Emerson has always valued the customer engagement opportunities provided by the AHR Expo and the forum to showcase our sustainable solutions that are helping to reduce global impact while improving comfort, efficiency, performance and food safety in the HVACR industry," said

John Schneider, president, HVACR Technologies Americas for Emerson.

## Innovation Sets the Course

On Monday afternoon, the show celebrated the 2022 Innovation Award Winners with a private reception. Members from each winning company were invited to share food and drink and be among industry cohorts also being recognized as leaders in shaping the future of the industry.

## Education For All

In the Education Program, attendees were invited to sit in on more than 80 free sessions, covering topics from a range of industry experts. Added to the roster this year was an industry panel discussion led by leaders representing all sectors of the industry, including Mick Schwedler, President of ASHRAE; Stephen Yurek, President and CEO of Air Conditioning Heating Refrigeration Institute (AHRI); Talbot Gee, CEO of Heating, Air Conditioning, Refrigeration Distributors (HARDI); Roberta

MacGillivray, President of National Air Filtration Association (NAFA); and Dominick Guarino, CEO of National Comfort Institute (NCI).

Additional education program highlights include an overview of intellectual property given by Wil Rao, an IP and Patent attorney in the greater Chicago area; a breakdown of warranty and callbacks from Bryan Orr; lessons learned from the supply chain, a panel discussion hosted by HARDI and moderated by the HVAC Jerks; and many more targeted discussions highlighting current opportunities, threats and methods across the industry.

## Until Next Time

The 2023 AHR Expo will be held at the Georgia World Congress Center in Atlanta, GA. Registration will open in summer 2022. Sign up for the AHR Expo newsletter to receive updates and news as it happens at [ahrexpo.com](http://ahrexpo.com).

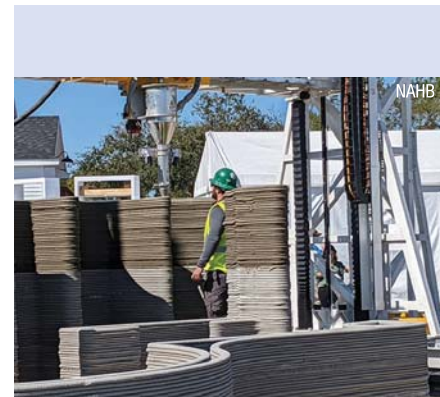
## Design & Construction Week - Orlando

The International Builders' Show (IBS) and the Kitchen & Bath Industry Show (KBIS) once again combined for the annual Design & Construction Week® (DCW), which drew more than 70,000 attendees to the Orange County Convention Center this Feb. 8-10.

More than 45,000 home building professionals attended IBS, sponsored by the National Association of Home Builders (NAHB) with more than 25,000 attending KBIS, hosted by the National Kitchen and Bath Association. The joint show followed extensive health and safety protocols.

"The attendance at this year's show exceeded our expectations and reflects

► **Turn to It's Showtime, page 36**



3d printing an entire house at the Pro Builder Village during DCW.



Craig Morgan sings during a Pfister event promoting American Plumber Stories.



The Essency (seen at AHR) is an on-demand, tank-type water heater.



Bocchi USA debuted a new line of fireclay sinks at KBIS.



by Jake Shevik  
PRODUCT MANAGER AT CHERNE

# Understanding Pneumatic and Mechanical Pipe Plugs

**W**hen using a pipe plug, you are doing one of three things:

- (1) **stopping the flow** in a pipeline or opening;
- (2) **bypassing the flow** running through the pipeline, or
- (3) **performing a low-pressure air test** on a new pipeline before placing it into service; or **testing a pipeline already in service for leaks**.

There are two pipe plug options to choose from.

- Mechanical plugs (ranging from .39 inches to 18 inches) are used for long-term or permanent plumbing applications.
- Pneumatic plugs (ranging from 1 inch to 96 inches) are used for short-term waterworks applications. (If a pneumatic plug is needed for a longer period, the inflation pressure must be checked every four hours and adjusted as required.)

Whether you are using a plug for testing, maintenance, or repair, it's important to use a high-quality product you can rely on. Let's take a further look at the two options and how to use them safely:

## Mechanical Pipe Plugs

**Uses:** Most mechanical plugs are designed for blocking. However, Mechanical Gripper Plugs, available with or without a bypass, can be used for bypassing or air testing. Mechanical pipe plugs are used primarily for testing DWV (Drain-Waste-Vent) systems, but are also used in larger waterworks applications if needed.

**How they work:** Mechanical pipe plugs allow you to section off part of the pipe, so that you can work or test the section without shutting off the rest of the system. Mechanical plugs do not need to be inflated and are expanded to fit tightly within a pipe or open mechanically.

Most only require to be hand-tightened, but they can also be tightened and locked in place with a bolt or wing nut,



A large-size pneumatic blocking plug being used in wastewater system maintenance.

## Let's take a further look at the two options and how to use them safely.

which provides a leak-tight seal within the pipe. Once the plug is in place, you can pressurize the system with air or water to detect any problems.

**Benefits:** Mechanical pipe plugs are smaller, lighter-weight, and don't require air to inflate or seal. They expand to fit tightly within a pipe or can be opened mechanically by hand. They do not deflate over time like inflatable plugs, making them better for long-term applications or pipes with a higher pressure requirement.

**Types:** There are a couple of options when it comes to the different types of mechanical plugs—

- **Blocking plugs** are used to test DWV systems. They fit into pipe diameters up to 6 inches and are sealed for testing.
- **Bypass plugs** are for the installation and repair of residential or commercial piping systems. Used when a system repair is needed while wastewater must continue to flow, they allow both testing and monitoring for pipes up to 18 inches.

Some mechanical plug options offer

specialized features, such as chemical resistance, the ability to lock in place, or are designed for specific applications, such as Pipe Hubs and Clean Out Coverings.

## Pneumatic Pipe Plugs

**Uses:** Pneumatic pipe plugs are also used for blocking, bypassing, or air testing. Mainly used when working with industrial underground waterworks systems, they can fit into pipes up to 120 inches in diameter. They can also be used in smaller plumbing applications to test a complete system for leaks.

**How they work:** A pneumatic plug is a rubber ball that can be inflated with air, water, or any inert gas (nitrogen) with a bicycle pump or large air compressor. As it fills with air, it expands against the pipe and seals in place, either stopping the flow in the pipe or redirecting it to go somewhere else. A second test ball must be put in place to check for any leaks between the two to run a low-pressure air test.

**Types:** There are a couple of options when it comes to the different types of pneumatic plugs—

- **Blocking/test ball plugs** are



A mechanical plug in place.

used for blocking the flow during maintenance in sanitary or sewer systems. They can also be used as back plugs for sewer air tests. A test ball doesn't have a bypass and is designed to do one job, blocking (sealing) a pipe.

- **Bypass/muni ball plugs** are used for testing and monitoring pipe systems. Some bypass plugs are designed to handle high back pressure in applications such as water mains, force mains, and industrial lines. A Muni Ball has a bypass tube running through the plug that allows the user to bypass effluent through the tube. With an adapter cap, it can be converted to complete an air test. Muni Balls can also be used for blocking pipes.

## Safety Reminders

Users must review the safety manual for complete operation and safety instructions before using the equipment.

- **Always be aware of the Danger Zone:** Never enter the Danger Zone while a plug is in use. A danger zone area expands outwardly in a cone shape from where the plug is. The total force exerted on a pipeline plug is directly proportional to both the pressure and the pipeline area. The amount of force behind a plug can be overwhelming.
- **Prep before using plugs:** Make sure to select the correct plug size for the application, check the

➤ **Turn to Understanding, page 47**

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by Patrick Linhardt

HYDRONICS MANAGER AT CORKEN STEEL PRODUCTS CO.



## Maybe Next Time

No, the photo is not what we found at the job without an expansion tank [January's "Only Expansion Tanks in the Building" - Ed.], because we visited the job site recently and *still* didn't find it. The homeowner came back from her extended Florida vacation and was willing to let us explore more of the house. On a rainy day, I arrived early for a change and got a better look at the house as I came up the long driveway.

It didn't appear to be added onto like I originally thought and there wasn't much attic above the Mansard roof. The contractor arrived and we went to meet the homeowner. I asked her when the house was built. She replied in 1963, with the boiler room specifically not located below the house. Seems the guy building it back then had a boiler explosion in the basement of his previous house.

With that information, the crawl spaces we previously explored made more sense. The whole living space of the house was over a series of crawl spaces, since the guy (or his wife) building it were freaked out by the accident in the last basement. No basement, no problems. Funny things motivate people to do funny things.

### Back to the Crawl

We left the kitchen where we were talking to walk to an access to a crawl space from inside the house. The boiler feeds three air handlers that have hot water coils. The first day we found one of them in a crawl space very close to the boiler room. We dropped in to investigate. This day we found the second air handler in a crawl space towards the opposite side of the house, fed by an un-insulated 1¼" copper pipe. It was the 60s, they did things differently back then.

No tank found there, so we headed in the direction of the boiler room, crawling on all fours at first, then on our bellies to get under ductwork as we approached the other side of the wall that stopped our last exploration. We eventually identified it by the number and size of the pipes. Sure enough, there



A chemical shot feeder expansion tank.

there wasn't an "attic" and wanted us to go back outside in the rain to a "bulkhead", insisting we take a screwdriver. We are both polite men that don't want to upset a customer, so out we went.

On the opposite side of the house from the boiler room was set of doors leading below grade, like what usually is used for an outside basement entrance. But at this house, they opened to a crawl space access, just big enough for an air handler to get in. A wooden cover was already loose, so no screwdriver was required. Once in, we realized it connected to the space with the second air handler. Nothing new to see there, and no expansion tank in sight.

As we walked back around the house, we decided that there must be an attic with an attic hatch somewhere on the

going up the outside wall and then into the second floor.

The homeowner was also a single woman. To reach her second floor air handler, we walked upright through her enormous closet to find this chemical shot feeder attached above the coil, with a gauge glass set added to the piping. It did take me a minute or two to understand that this was the expansion tank for the system. Not your conventional setup.

Since the pool heater/boiler was outside, the system had a glycol mix circulating instead of straight water. To make it easy to get the glycol mix into the piping, it is poured into the top of the shot feeder where the chemical usually goes. The gauge glass was there to indicate when more glycol mix was required to be added.

When the gauge glass was half full, the air cushion in the shot feeder was enough to accept the expansion of the glycol/water mix as it warmed up. The system doesn't have much water/glycol volume, so that cushion of air doesn't need to be very big.

Its location above all the radiation was like the open expansion tanks for the old systems, but completely different because it was a closed system. It was the first time in 38 years of poking around basements and attics that I came across this setup. Credit to the guy who came up with it or maybe it's something that's done in your area. Let me know if you've seen this before.

Andy B, a plumber in NYC, has an idea of what we might find in the attic of the job without an expansion tank. I'll let you know his thoughts and what, if anything, we eventually find. Next month I'll switch to something about steam heating. **C**

*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.*

**That's the beauty of hot water and steam heating. You never know what you're going to see next.**

was the suspected ¾" copper pipe. Like before, it was much cooler to the touch than the other pipes.

There were the two pipes going to the air handler we had just found and two pipes going to the third air handler, which I learned—while flat on my stomach—was on the second floor. The suspect ¾" pipe and the third air handler's two pipes disappeared into a chase that ran up to the second floor. We looked through the rest of the crawl space to no avail before getting out.

The contractor and homeowner were off to the second floor before I had knocked the dust off my clothes. I caught up to them and peeked into a utility closet on the second floor. There were the two pipes re-appearing out of the attic and connected to the air handler. The suspect ¾" pipe was nowhere to be found.

### Around to the Bulkhead

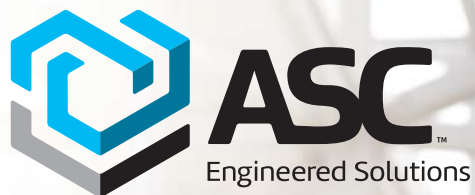
The homeowner then told us about another access to under the house, which might lead to other crawl spaces. She said

second floor because there is ductwork feeding registers on the ceiling. Unfortunately, we were out of time since the homeowner informed us she had to leave for an appointment. The search was called off until the crew comes to install the new boilers. Maybe next time...

### A Chemical Shot Feeder?

Some of you might recognize the item in the photo. The Kid (who I'm training to take my job if you're a first time reader) didn't have a clue. Frankly, it took me a little while to grasp what was going on. That's the beauty of hot water and steam heating. You never know what you're going to see next.

Coincidentally, this house also was heated with hot water coils in air handlers. Just two in this case since it is a much smaller place. Also, the boiler wasn't in the basement. In fact it wasn't a boiler at all, but a swimming pool heater that was sitting outside along the driveway. The supply line split to a pipe going into the basement and to a pipe



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## Historic Building Receives Modern DHWS

**P**ITTSBURGH, PA — The Industrialist, an autograph hotel by Marriott, is an 18-story luxury boutique hotel located in downtown Pittsburgh with a sweeping view of the Monongahela River.

Located in the newly renovated historic Arrott building at 401 Wood St., The Industrialist features 124 guest rooms, 1,200 sq. ft. of meeting space, two restaurants, and a fitness center, all situated in a prime accessible location to the vibrant center of Pittsburgh.

### The Opportunity

Constructed in 1902, the Arrott building hosted offices for several decades before falling vacant. Purchased by HRI Properties in 2017, the building was gutted and completely refurbished for Marriott's upscale Autograph Collection line of hotels.

"The risers were a little different on this project because it was an older building and they weren't designing it from scratch," Darren Belajac, President of Pinnacle Sales said. "There were three separate water heater systems [in the building], one served ground through the third floor, one served the fourth through tenth floor, and one served the seventh through the eighteenth floor plus the penthouse."

To ensure the building's future guests had immediate access to hot water, the domestic hot water system (DHWS) was designed with CircuitSolver® thermostatic balancing valves. "This is a pretty high-end hotel," Belajac added, "When people are staying there, they don't want to wait even 30 seconds for hot water."

The CircuitSolver® Union Assembly with integrated check valve was paired with three Grundfos ECM pumps.

"We've had good success with [CircuitSolver®] on other projects ... [so] that's the one we chose," Ron Dombrowski, Superintendent at Ryco, Inc., the project's plumbing contractor said. "We've used [manual balancing valves] and we didn't like them. I'd have to go back for the next three months and rebalance everything. They were always screwing up. With CircuitSolver®, you install it and walk away."

### The Installation

Ryco, Inc. was chosen for the plumbing work. Since 1984, Ryco has been serving the commercial plumbing needs of Southwestern Pennsylvania, becoming one of the largest merit-shop, employee-owned contractors in the area.

Generating hot water for the entire system were three separate racks of A.

design choice, Belajac says. "The idea was to put the balancing valves at the end of each supply to the rooms so that we knew every room was going to be taken care of and have hot water quickly."

In addition to the balancing valves, three Grundfos pumps were selected to complement the CircuitSolver® valves' temperature regulated flow control: two

ramps itself down very slowly, that way we're still moving some water but not over-pumping."

Both the CircuitSolver® balancing valves and Grundfos MAGNA3 pumps automatically regulate flow based on current water temperatures, constantly adjusting to maintain a set temperature. "You have a modulating balancing valve based on temperature, use a modulating pump that works on temperature," Belajac continued, "They just match each other really well and make for a very efficient domestic system."

### The Result

The Industrialist Hotel's DHWS started up in December 2020. Within a day, it automatically and fully balanced itself, with virtually instant hot water available at each fixture on every floor.

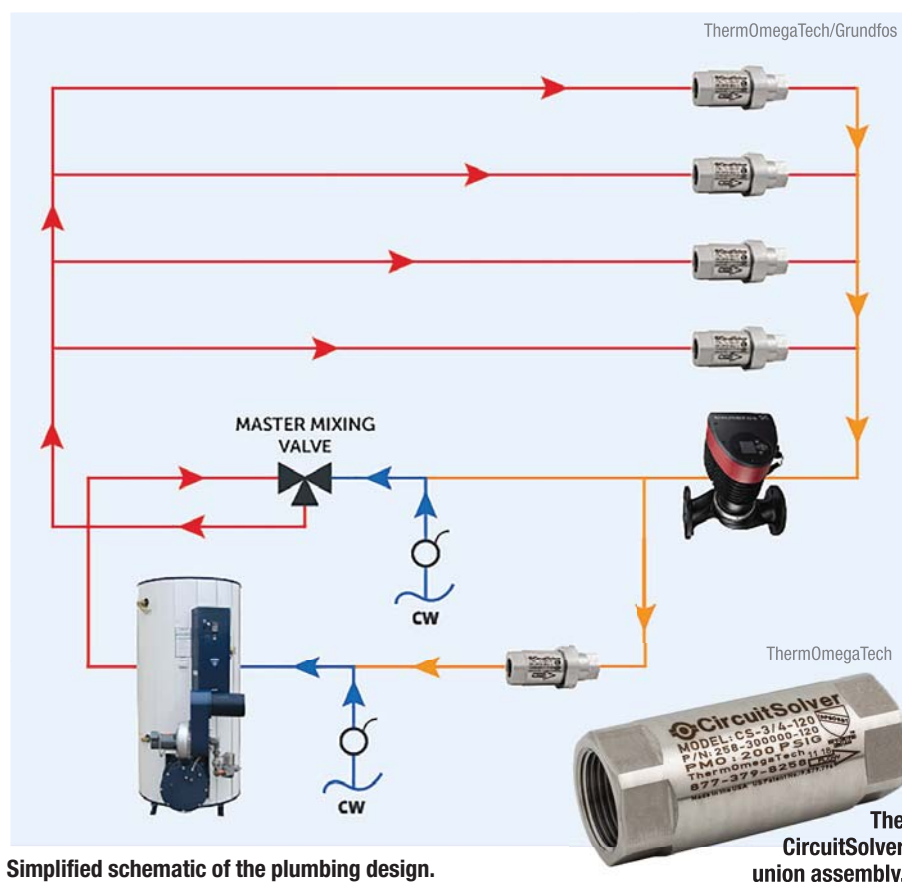
Reflecting on the overall experience, Ron Dombrowski spoke favorably of CircuitSolver®, compared to when he used manual balancing valves. "It was terrible. I'd be back at that project many, many times, many months later. We'd spend weeks going back, so [CircuitSolver®] is a time saver. It's like the stone age and modern time, really. The valve is head and shoulders above."

Darren Belajac extolled the benefits of using Grundfos pumps in a temperature balanced system, saying, "Building owners want to see efficiency, and you're getting at least 50% energy savings with an ECM pump. Grundfos has been doing ECM longer than any of their competitors, so as far as reliability and quality, all the bugs have been worked out. They just have more expertise."

Barry Nauss, Area Sales Director at Grundfos, had a similarly favorable review of the project. "We were glad to provide The Industrialist Hotel with a state-of-the-art system... to give peace of mind to the contractor, end-user, and guest. Together, the technology provides reliability they can trust while reducing the overall power consumption and increasing comfort on the domestic hot water system. The end result is simply outstanding."

The Industrialist Hotel officially opened its doors on June 2, 2021 and has received zero complaints from its guests about hot water availability. **G**

**Royco, Inc., uses thermostatic valves in combination with ECM pumps for a self-balancing system delivering almost instant hot water to every occupant.**



**Simplified schematic of the plumbing design.**

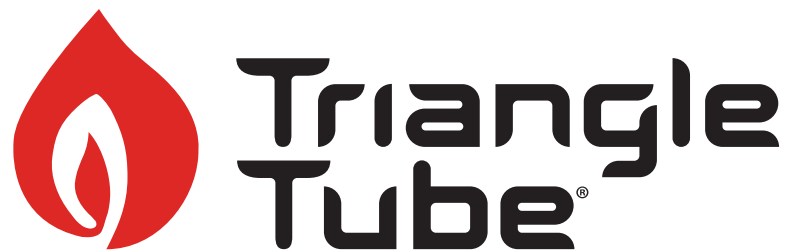
O. Smith tankless water heaters with 20 units total (two eight-unit racks and one four-unit rack).

Royco installed 150 CircuitSolver® Union Assemblies in the DHWS, one at each room's return, instead of at the end of each floor's supply run as is traditionally done.

The large number and unique location of the CircuitSolver® valves in the 18-story building was a purposeful

Grundfos MAGNA3 32-100 pumps and one Grundfos MAGNA3 40-120.

"The Grundfos MAGNA3 has a temperature sensor built into the unit so you don't need an external aquastat," Belajac explained. "And since the pump is a variable-speed model, you just set it to the return temperature you want to see. When a lot of water is being used or the line temperature [drops], the pump speeds itself up. [When] it is satisfied, it



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## Uponor North America Named to Top Workplaces USA 2022 List

APPLE VALLEY, MN — Uponor North America was recently named to the Top Workplace USA 2022 list for companies with 500-999 employees. This award is based entirely on feedback from an employee engagement survey conducted by an independent, third-party research company, Energage, and celebrates companies that prioritize creating a people-centered culture and giving employees a voice.

This honor marks the first time Uponor has been recognized as a Top Workplace in the U.S., and the eighth



time the company has been recognized as a Top Workplace in the State of Minnesota since 2012.

The survey asked employees to rate Uponor on 15 drivers related to engaged work environment, company culture, leadership, and overall job satisfaction. Rankings for Top Workplaces lists are based on companies meeting criteria built upon more than 15 years of engagement survey data from over 70,000 global companies.

"We are so humbled that our employees' anonymous feedback resulted in Uponor being recognized as a top workplace in the U.S. We pride ourselves on having a very distinct employee-driven culture, and strongly believe that if we take care of our employees, they, in turn, will ensure positive experiences for our customers. The fact that we've been recognized by employees as a top workplace in our state, and now in the U.S., indicates we're on the right track," said John Reutter, interim president and vice president, Finance, Uponor North America.

Of the Uponor employees surveyed, 84% said they would recommend the company to their family or friends looking for work; 84% believed the company is headed in the right direction; nearly 75% said their work meets or exceeds their expectations; and more than 80% said Uponor motivates them to give their best each day.

"The culture we've maintained over time—not just during this tumultuous period of the pandemic – is a direct reflection of the people who work at Uponor," added Jen Hauschildt, vice president, Human Resources, Uponor North America. "We're so proud that our flexible, yet accountable and collaborative work environment continues to hold our company up as an employer of choice in Minnesota, and across North America."

To learn more about Top Workplaces USA 2022 visit [topworkplaces.com/award/top-workplaces-usa/2022/500-999/](https://topworkplaces.com/award/top-workplaces-usa/2022/500-999/). To explore career opportunities at Uponor, visit [uponor.com/careers](https://www.uponor.com/careers).

## Rinnai America, Advantage Alliance Announce National Partnership

PEACHTREE CITY, GA – Rinnai America Corporation recently announced a nationwide partnership with Advantage Alliance™ to enable residential heating, cooling and plumbing contractors to offer homeowners a cost-effective approach to maintaining home comfort. This will be part of Rinnai's PRO Network, a member-only program offering contractors tools, training and support to help grow their business.

Rinnai's Worry Free Hot Water program, powered by Advantage Alliance, gives homeowners the ability to install a tankless water heater or home heating products with no money down and low monthly payments through a leasing agreement that includes 100% maintenance and upgrades. The program allows contractors to offer customers an all-inclusive membership plan that includes new, high-efficiency equipment as well as routine maintenance and repairs.

"Our partnership with Advantage Alliance™ expands upon benefits Rinnai PROs can offer to customers," said Rinnai America Corporation President, Frank Windsor. "Our initiatives, programs and partnerships are designed to support the needs of professional contractors and we want to continue to provide innovative solutions and



support. From our standpoint, this addition not only benefits our PROs, but it's also a valuable offering for their customers."

Rinnai's PRO Network launched in early 2020 in an effort to engage professional contractors. Comprised of elite benefits for registered users including qualified leads, rewards, advertising and technology support, the introduction of this partnership will provide yet another avenue for business growth.

"Rinnai understands the importance of helping these hard-working contractors evolve and find greater efficiencies to increase profitability," said Nicholas Blaylock, Director of Business Development

at Advantage Alliance™. "The Advantage Alliance Program also brings many benefits to homeowners by making it even easier to manage and maintain their water heating systems."

The Advantage Alliance Program provides contractors with the necessary infrastructure and support to implement the program while also providing flexibility to customize the program to meet their vision. It will be available to all Rinnai PRO Network registered users in 2022.

To learn more about Rinnai, visit [www.rinnai.us](https://www.rinnai.us).

To learn more about the Advantage Alliance Program visit [www.advantageallianceprogram.com](https://www.advantageallianceprogram.com).



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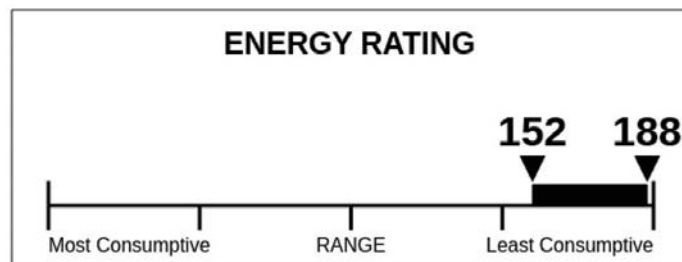
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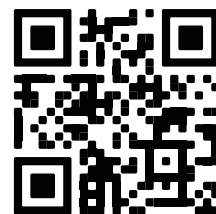


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by Patti Feldman  
COMPUTER AUTHORITY



# Field & Office and Virtual Connections

**P**rojul construction management software ([www.projul.com](http://www.projul.com), 844/776-5853) is an all-in-one solution, developed by a construction company, designed primarily for small to medium sized residential remodelers and niche contractors.

The cloud-based platform, which includes mobile apps for Android and iOS devices, supports unlimited leads, customers, contractors, projects, and storage, along with unlimited support, assistance with onboarding, and training.

Features include pre-sales lead management; estimating; project management; and linear-style time-line view scheduling, with task-by-task understanding of what's been completed, what's in process for the day, and what the timeline for rest of the project looks like. You can drag and drop line items from an estimate onto a worker's schedule to automatically turn it into a task or can drag and drop assignments to different days from different scheduling views.

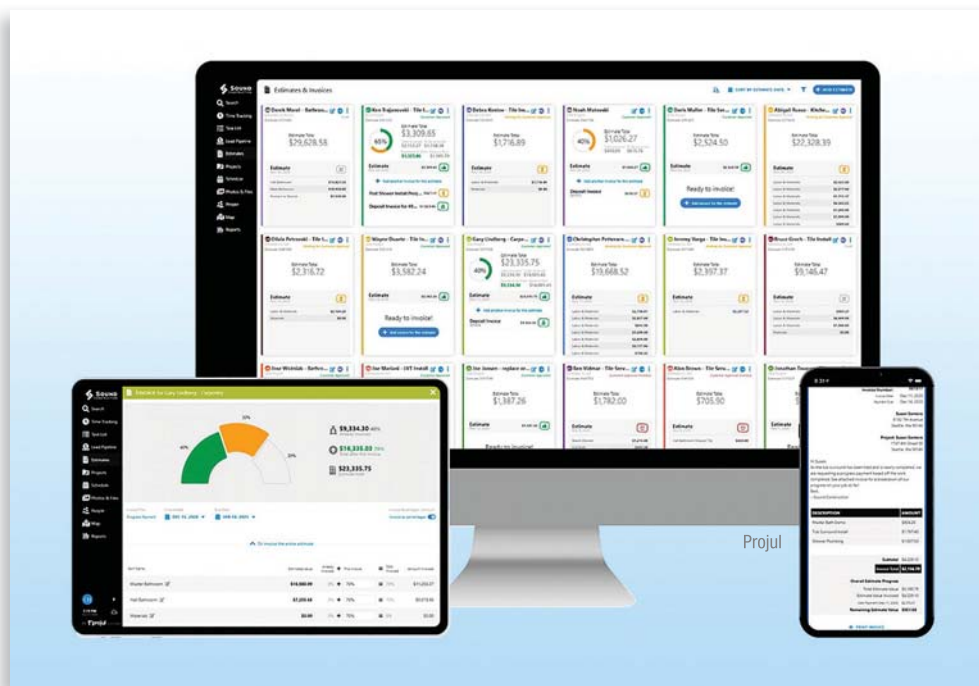
The software also includes time-tracking, (including geo-fencing), real-time messaging among company employees, and photo management.

## How it works:

Pre-sales lead management capabilities include grouping leads in phases—e.g. to contact, to estimate, to send—and allows you to attach notes, communications, photos, and other documents for easy access for referral or incorporation going forward.

Projul enables users to build and save editable estimates (and sections of estimates), notifications such as alerts for tasks and updates, and project schedules as templates for another, similar job, with editing of details such as labor and material costs, costs with markup, hard costs, and margins for consistent use by your estimators, start date, crew members, and other data. The software supports custom branding of apps, invoices, and estimates with your logo.

Clients can comment on estimates or change orders and can request



The Projul solution on desktop, tablet and phone.

## Reviews of Projul cloud-based construction management software and the HomeX home services platform.

revisions before they agree to sign and can accept and e-sign them from a smartphone.

In addition to the time-line view of scheduling, the software provides the ability to view and manage multiple projects on a color-keyed Gantt Chart that shows a timeline for projects, tasks and milestones.

Crew members with the Projul mobile app can, at the start of the workday, click the location icon to map their route for the day. As each task listed is completed, that can be reflected on the timeline.

Users can snap a photo and mark it up or include photos within tasks to keep field workers and management in sync. When a worker takes a photo, it is immediately uploaded into the project, which results in default organization. All photos are automatically stored in your Projul cloud, accessible from a master gallery filterable by customers, projects, project types,

before and after, or other custom tags.

Projul partners with a third-party payment company to facilitate in-app payments from customers, who are invoiced by email. And can press a "pay now" button and submit their credit card or debit card details, or bank details (for an ACH transfer).

The solution integrates with QuickBooks Desktop and QuickBooks Online for accounting.

**Pricing:** billed annually or monthly, tiered by limit of users: 5, 15, 35, or unlimited. Mobile apps for Android and iOS devices downloadable at Google Play and the App Store.

**HomeX** ([www.homex.com](http://www.homex.com), 855/466-3948) is a home services platform connecting homeowners and licensed service technicians, including HomeX Remote Assist technicians who are expert plumbers, electricians, HVAC and appliance professionals for virtual assistance over a video call in the form of expert advice or step-by-step guidance

for homeowner hands-on tackling of the project.

If that proves not sufficient, HomeX can, some cases, connect the homeowner with a contractor local in their geographic region who could take on the problem with an in-home visit.

## How it works:

HomeX starts the process by offering customers a free assessment of the homeowner issue, using AI (artificial intelligence) to identify it, followed by a guaranteed estimate for a Remote Assist session conducted over a video call, with the cost filtered by the size of the job and the estimated length of time of the job.

If, after quick assessment, a Remote Assist session will not suffice, HomeX will not assess a charge but rather will recommend an in-home visit by a local pro in the HomeX network, if there is one within the geographic area.

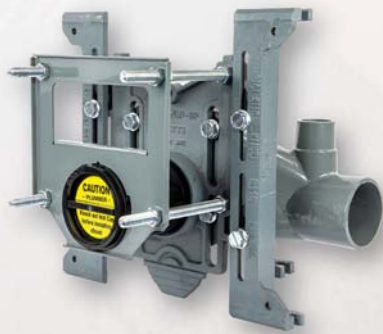
Pricing for Remote Assist tiered as follows: small job, taking 10-20 minutes and requiring one or two tools, such as programming a thermostat or replacing an HVAC filter; medium job, taking 30 minutes and calling for a basic toolbox, such as clearing a condensate clog or unsticking a pressure switch; and big, multi-step, project, with a session lasting 45 minutes minutes and possibly requiring specialty tools, such as replacing a thermostat or an igniter. (If the homeowner needs to get a part for a large job, the timing of the session is paused until the part is in hand.)

HomeX Remote Assist can also help homeowners with installations, maintenance support, and gaining a better understand of their home through a detailed walk-through of an individual's home systems and appliances. (Local contractors interested joining the HomeX platform can reach out at [jobfeed@homex.com](mailto:jobfeed@homex.com)).

*Patti Feldman writes articles and web content for trade magazines and manufacturers of building products. She can be reached at [productpad@yahoo.com](mailto:productpad@yahoo.com).*

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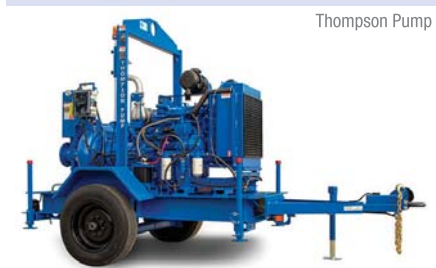
Pfister debuted its new showroom brand, Verve, at KBIS.



CONTRACTOR's Editor-at-Large John Mesenbrink (left) at AHR's Podcast Pavilion.



CONTRACTOR's Editor-in-Chief Steve Spaulding talks circulators with Taco.



Thompson featured this 6" solids handling pump at the WWETT Show.

**For more products from the AHR Expo, turn to this month's New Product pages, starting on pg. 48.**

➤ Continued from page 36



NBA legend Magic Johnson delivers the keynote speech at the 2022 International Builders' Show.



A dancer performs with Tesla coils at the opening ceremonies for Design and Construction Week -- the co-located International Builders' Show (sponsored by NAHB) and Kitchen and Bath Industry Show (sponsored by NKBA). Next year the National Hardware Show will join DCW to create an even larger event.

the enthusiasm of the home building industry to collaborate and discover the latest products and technology solutions for their customers," said Geoff Cassidy, NAHB senior vice president of exhibitions and meetings. "Our top priority remained the safety of attendees and exhibitors throughout the show. We implemented a series of health measures that helped to ensure a safe and productive show."

In all, DCW featured nearly 1,200 exhibitors occupying approximately 725,000 square feet of indoor and outdoor exhibits. Many exhibitors also noted the strong foot traffic of attendees.

"We're really pleased with the turnout. We're excited to have in-person meetings with our clients and be able to walk them around and show them our products," said Nicole LeBlanc, shopper marketing manager for Builder Channel at Whirlpool Corporation. "We did a lot of product research lead-

ing up to the show and are excited to showcase that here."

In addition to meeting suppliers and seeing product demos throughout the three-day show, attendees networked with peers and attended any of more than 110 education sessions led by experts on a wide range of industry topics.

Next year, DCW will return to Las Vegas Jan. 31-Feb. 2, 2023. And the 2023 show promises to be bigger than ever, since IBS and KBIS will be joined by another mammoth event, the National Hardware Show.

### The WWETT Show - Indianapolis

As this issue of *CONTRACTOR* goes to press, the Water & Wastewater Equipment, Treatment and Transport (WWETT) Show is being held in Indianapolis. The show runs from February 21st through the 24th (with the Expo hall opening on the 22nd).

The global water and wastewater market is experiencing rapid growth, projected to value nearly \$500 billion by 2028. The show is the world's largest annual trade show for wastewater and environmental service professionals, and attracts plumbers, portable sanitation professionals, septic contractors, sewer contractors, and wastewater professionals.

The Expo is a showcase for the latest in wastewater technology with major manufacturers exhibiting, including Super Products, RIDGID, Imperial Industries, J&J Portable Sanitation Products, HammerHead Trenchless, Jetters Northwest and hundreds more. Live product demos are a hallmark of the expo floor.

The show overall is a place for industry experts to gather and help find solutions to today's most pressing challenges, such as climate change, urbanization, aging infrastructure, spiraling energy costs, and an evolving regulatory environment.

"These challenges are not impacting a specific subset within the water and wastewater sector; the need to discover new solutions and improve operational efficiencies is an industry-wide issue," said Lauren Lamb, VP, Informa Markets. "We're proud to help the industry overcome these challenges and provide a platform for individuals and companies alike to network, learn from one another, and engage with those that fall outside their local market."

Education continues to be a core component to WWETT. The curated conference agenda hosts more than 90 expert-led sessions, with many counting toward fulfilling required continuing education units (CEUs) and professional development hours (PDHs). Notable sessions include:

- When the Going Got Tough, the Tough Got Going – Processing Liquid Transportable Waste
- Setting Up State Approved Disposal Facilities
- Overcoming the Challenges of High Strength Waste in OSTDS
- Best Practices to Reach 100% Enrollment after the FOG Digital Transformation
- Time to Eliminate Flat Rate Frustration (with Rodney Koop)
- Process Building in 20 Seconds (with Danielle Putnam)

The show also features various networking opportunities, including a casino-style welcome party to kick off the event. **C**





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by James Leichter  
LONGTIME HVAC CONTRACTOR, CONSULTANT, AND PUBLIC SPEAKER



# Supercharge Sales Success

## 1. Be a Great Communicator

Communication is the number one skill to have for sales. The ability to give a great presentation of any kind is also one of the top life skills a person can have. That's because all of us are always selling.

The root of sales success is your ability to gather and provide information in a way that makes your prospect want to do business with you. Your value proposition, your company, your product's awesome features—none of that matters unless you're able to get your prospects to speak to you freely and openly. They also must want to listen to what you have to say.

## 2. Know Who You Are Dealing With

All of us have a main personality type or social style. Understand your prospects' basic personality type and work with them the way their personality type would be most comfortable. You will learn that there are certain personality types that are very social and naturally trusting. They prefer dealing with people that have a good sense of humor. Other prospects are naturally skeptical and untrusting. They are worried about making mistakes and being ripped off. There are still other people who are very serious and want to focus on details, facts, and figures. You need to know who you are dealing with within about two or three minutes of meeting them.

## 3. Make Them Laugh

It is important to have a good sense of humor. Making someone laugh or smile can go a long way to building relationships and making the sale. If this doesn't come naturally, you can improve yours easily. Go to comedy clubs, watch comedy shows, and hang out with funny people. When showing off your sense of humor, stick with safe topics such as children, weather, traffic, or by repeating something funny you saw recently. Making fun of your yourself can also be a funny safe bet.

## 4. Ask the Right Questions

Ask the wrong questions and you will get the wrong answers. Questioning is the biggest weakness of most salespeople. You



The root of sales success is your ability to gather and provide information in a way that makes your prospect want to do business with you.

have a lot to learn about this person and what they need. You need to begin building rapport immediately. You will want to determine their basic personality type, build credibility, identify needs, find hot buttons, and lay the groundwork for your presentation.

## 5. Don't Give Them What They Want

A great motto to live by is this: "Give customers what they need, not necessarily what they ask for." People rarely know what they need. This is not to be confused with what they want. Most people know what they want from your company, but they rarely understand what it takes to deliver it to them. You are the expert. It is your ethical duty to determine what is best for your clients and prescribe the right solution for their needs.

## 6. Sell the Sizzle, Not the Steak

Features mean nothing to the average client. You must sell benefits—not features. They are interested in WIFM—"What's in it for me?" You must answer this question to be successful.

## 7. Offer a Wide Range

Many sales professionals have moved away from a simple good, better, best offering. They are now offering a wider selection of comfort systems. Five options are recommended.

Create marketing-oriented names and brief descriptions for each level of system. Here are five good options:

**Value:** Affordable value-based comfort.

**Prestige:** Good comfort system at a great price.

**Supreme:** Very good comfort system yet still affordable.

**Optimum:** The best combination of comfort, warranty, and energy savings.

**Ultimate:** State of the art comfort, maximum energy savings, and the ultimate warranty.

## 8. Offer Financing to Everyone

Financing is one of your most effective selling tools. It should be offered to everyone, even rich people. Rich people love financing.

Many salespeople make the mistake of believing that wealthy people will not want to hear about financing. That's not true. Wealthy people think about cashflow and the cost of capital. They understand the huge advantage of leveraging their buying power by using other people's money. Rather than focusing solely on the price of the product, they focus on the return on investment.

## 9. The Best Systems Include the Best Financing

Lenders will often allow you to pay fees to create more favorable terms. These fees are often referred to as a "Buy-down." Use buydowns to create low interest rates and small down payments for your most profitable systems.

Your least profitable systems should only be offered with your least attractive financing packages. The better the system is, the more attractive the financing package should be. There are plenty of people that will invest in your best system if it includes cheap financing and or low payments.

Talk about the prospect's monthly investment and how the system will reduce their overall costs. Focus on the net monthly cost of ownership versus the original price tag for the system.

## 10. Analyze the Impact of Financing

Track sales opportunities by financing activity. You want to know what financing options were taken when looking at leads won and lost. At the minimum, track leads by these three financing

➤ **Turn to Principles, page 40**



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## Supercharge Sales Success

► **Continued from page 38**

related scenarios: "Financing Offered and Refused"; "Financing Offered, Bank Declined, They Paid Cash"; "Financing Offered, Bank Declined, Sale Lost." If you are losing sales due to prospects being declined, you need to find alternative sources of financing or market to a different demographic.

### 11. The Sales Presentation

This could easily be its own article. Here are four important points.

1. Approximately 5% to 10% of buyers will buy the most expensive system, no matter what. Approximately 15% to 20% will select the least expensive system, no matter what. 75% will make their selection based mostly on your presentation.

2. Rehearse the first two minutes of meeting your prospect. You should know in advance how you will approach your prospect and how you will introduce yourself. You should already know what your first few questions will be.

3. Know who you are dealing with and tailor your presentation to their personality type. Only offer the information that is needed. You should avoid talking about things that don't matter to them.

4. Don't feel like you must cover each point of your presentation. Let the prospect interrupt you with questions. Their questions will help you understand what information is important to them.

### 12. Nurture and Follow-up

You may not always get the sale on your first try, so keep trying. Do this by staying in touch and nurturing the relationship. Call and email your prospect to stay in touch. Have a nurturing program in place that is automatic. You don't want to have to think about it.

### 12.5. You Need Grit

Grit is the secret weapon among successful people of all types. But what is it exactly?

According to Angela Duckworth, the psychologist and researcher who made the term well known, Grit is passion and perseverance for long term and meaningful goals. Grit means to stick with it. You continue working hard even after you experience difficulty or failure.

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*James Leichter is longtime HVAC contractor, consultant, and public speaker. Leichter is president and CEO at Aptora Corporation, a maker of contracting business management software. He is the editor of MrHVAC.com. James is a partner at RA Tax and Accounting, Inc. James is a founding faculty member at EGIA Contractor University. Learn more about EGIA and Contractor University.*

## SupplyHouse.com Donates \$60K Towards Industry Education

FALLS CHURCH, VA—SupplyHouse.com, an e-commerce company that sells heating, plumbing, HVAC, and electrical supplies, has made a \$30,000 contribution to the Plumbing-Heating-Cooling Contractors—National Association (PHCC) Educational Foundation, plus provided another \$30,000 in support for training and workforce development projects.

"We started Trade Tuesday in 2010 to champion the Trades, and we've continued to build on that idea to show our support and appreciation for Tradespeople," explained Kristine DeGeronimo, Director of Customer

Experience at SupplyHouse.com. "This year, thanks to the amazing engagement on our social media platforms, we exceeded our original goal and were able to contribute 60K to PHCC to help support education in the Trades."

"It's an incredibly generous gift," said Foundation Chair Kevin Tindall, of Tindall and Ranson Plumbing in Windsor, N.J. "We believe that any person or company that has enjoyed success because of this industry should be giving back to improve it future. It's clear that SupplyHouse.com shares that belief and we are happy to be working with them."

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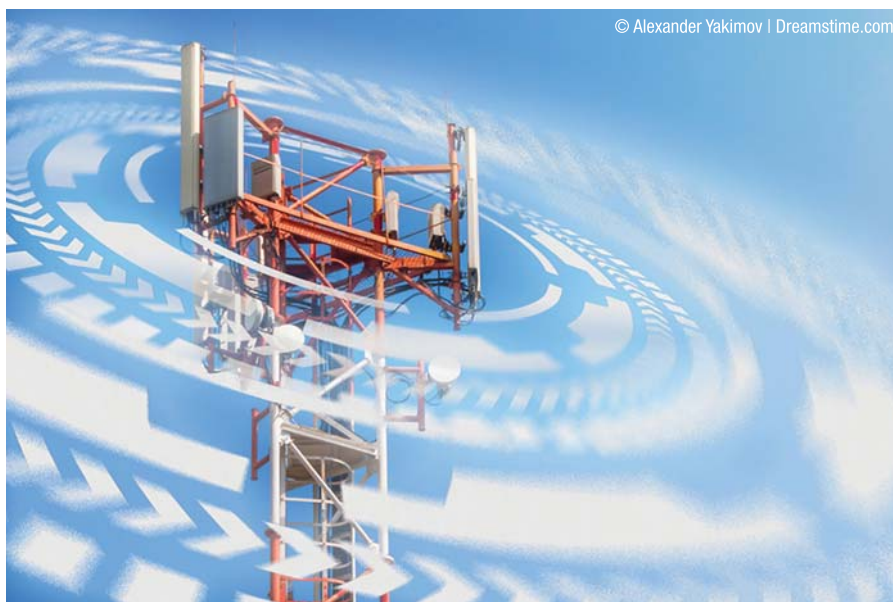
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CHIEF PRODUCT OFFICER AT TELETRAC NAVMAN



# The Final Days of 3G

**W**ireless network technology is continuing to evolve, and members of the transportation industry who have come to rely on 3G networks for telematics in their connected vehicles have to consider how they're going to keep up, lest they get left behind.

Driven by ever-growing demands for more and faster data, major network providers are working ceaselessly on their respective rollouts of the fifth generation of mobile network capabilities, known as 5G, promising greatly reduced latency along with incredible speed and the ability to transmit large amounts of data in much reduced time. At the same time, the 3G networks are being phased out, with most



© Alexander Yakimov | Dreamstime.com

correctly, companies must carefully craft an internet of things (IoT) strategy that accounts for these newer, high-speed networks. Doing so will require implementation planning, cost analysis and training, giving all the more reason to act quickly.

## The Benefits of Modern Hardware

Newer technology introduces greater functionality that will undoubtedly come in handy in the regular operation of a fleet. Even going from one step from 3G to 4G, the improvement will be immediately noticeable. Further future-proofing for 5G will ensure fleet owners stay at the forefront of technology for decades to come, all while enjoying the smoothest experience possible as the new networks roll out. The perks of being on a cutting-edge network are myriad, but highlights include:

- Faster speed and a wider network mean more reliable connections, particularly in areas where the wireless network is congested.
- Improved latency allows for sending a large mass of data such as alerts and events, including data-heavy content such as video.
- Communications between connected vehicles and the surrounding infrastructure is far more reliable and operate in close to real-time on high-speed connections providing instant information from the fleet and drivers.
- Massive amounts of data can be fed into AI-enabled telematics systems, turning real-time data into actionable safety, efficiency and compliance gains.

The key takeaway is that moving to new hardware isn't a needless burden, but a net gain for a fleet's drivers, customers and bottom line. Owners who get ahead now will avoid challenges down the line and reap the benefits above in the meantime.

## The Road Ahead

Adopting 4G and 5G capable hardware is both an exciting opportunity and a growing requirement as older networks sunset, but the biggest reason for fleet owners to get started sooner is to make

networks set to go offline next year. Current 3G hardware is incompatible with the newer networks, and fleets that don't upgrade in time will find themselves in the dark before long.

## 3G's Clock is Ticking

Fortunately for fleet owners, there is still time to make the transition – though that time may be quickly running out, depending on the network. Of the biggest providers, AT&T retired its 3G network in February. T-Mobile and Sprint will both bring 3G offline shortly afterward, in April 2022. Verizon will maintain its older infrastructure for the longest, with a projected 3G sunset aimed at January 2023.

Those dates come with a caveat, however: depending on the region, existing 3G infrastructure isn't guaranteed to last until the sunset date, as regular maintenance may be dropped in favor of implementing hotly demanded 4G and 5G infrastructure instead.

Faced with uncertainty, fleet owners would be wise to get ahead of this technological leap. This is especially true for fleets that are using electronic logging devices (ELD). No fleets are more at risk of being negatively impacted by this change than those mandated to use ELDs. If these fleets fall offline, the systems will no longer be accurately tracking hours of service, and the drivers will be non-compliant, introducing a risk of those vehicles being pulled from service. To make this jump

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sure they have time to do it right. In the coming months, owners will want to take the following steps:

- Determine how many devices are still on the 3G network, and how many need to be migrated.
- Understand what kind of lifecycle to expect from new telematics equipment.
- Research modern telematics speed- and data-focused features made possible by new hardware, including AI and machine learning options, and consider how they can improve the fleet's operation.
- Discuss the upgrade with the fleet's telematics provider and learn about modern telematics and future facing solutions.
- Discover whether or not the telematics provider is charging their current customers for this type of upgrade, this can give you a glimpse into how they will handle related future tech refreshes.
- Ensure the new hardware is properly certified and has a pathway to helping companies with their regulatory requirements such as ELD or other regional specific programs.
- Schedule the necessary vehicle downtime to make the upgrade with the minimum possible impact on downtime.

- Once everything is in place, implement a migration plan well ahead of your wireless network provider's 3G sunset period.

These steps will take time, and fleet owners will want to feel confident in every step of the process. As such, waiting until the last minute to get started on the transition is ill-advised. Moving up from 3G isn't as easy as flipping a switch. However, those owners who do put in the effort will avoid having to worry about their telematic systems potentially going out on them, crippling their essential dataflow for safety, compliance and business efficiency.

Now is the time to check with your telematics provider about the imminent 3G sunset or find a new vendor who can handle the inevitable upgrade. **C**

*Andrew Rossington is the chief product officer at Teletrac Navman. He has spent the last 20 years focused on transport industry solutions and has extensive experience managing software development teams and implementing key business systems for some of Australia's largest transport operators and software companies, including Toll, ComTech and Dimensions Data. He is passionate about the transport industry and using technology to enable successful business outcomes.*

## Kohler Co. Announces Construction of Greenfield Plumbing Ware Manufacturing Facility

KOHLER, WI — Kohler Co., a global leader in kitchen and bath products, is proceeding with constructing a greenfield plumbing products manufacturing facility, ancillary warehouse, and office space on 216 acres in Casa Grande, Arizona. The multi-million capital investment comprises a total of approximately 1 million square feet, with room onsite for future expansion, and will bring more than 400 new full-time jobs to the local market.

"Kohler is an iconic American brand and we are proud to see the company expand its manufacturing operations to Casa Grande," said Governor Doug Ducey. "The company's investment brings yet another industry-leading business to Pinal County, adding hundreds of good jobs to the region's booming manufacturing landscape."

### Scaling to Meet Demand

Kohler will produce the company's high-growth lines of STERLING Vikrell bath and shower fixtures—popular among large single-family homebuilders and multifamily developers, and retail big box stores—to support increasing customer demand. The facility will also serve as a distribution center for these products, to best serve Kohler's growing customer base in the western U.S. with reduced lead times and delivery efficiency.

"We are pleased to expand our North American manufacturing footprint in the western U.S. This new plant will provide the needed capacity to support our strong growth projections for STERLING Vikrell bath

and shower products," said Shawn Oldenhoff, President of Kohler Kitchen and Bath North America. "We look forward to becoming an active member of the greater Casa Grande community and contributing to its growing economy and quality of life."

Set to be operational by August 2023, Kohler's new manufacturing facility will incorporate smart factory elements and cutting-edge production technology. The facility will also incorporate key sustainability measures to reduce greenhouse gas emissions, water use, and solid waste. Several alternate energy strategies are also being evaluated.

### Community-Conscious

Kohler's new manufacturing operations will expand the local economy, increase tax revenues, and bring hundreds of new full-time jobs to the area, in addition to jobs during the construction phase.

"The City of Casa Grande is very excited to welcome the industry leader and global manufacturer of kitchen and bath products, Kohler Company. Kohler has established itself as a highly successful company that contributes to its local communities," said Craig McFarland, Mayor of Casa Grande. "Kohler not only leads in its industry, but is equally responsible to the neighbors and community where it resides."

Once completed, the site in Casa Grande will be Kohler's second Vikrell production facility, joining Kohler's existing eastern facility in Huntsville, Alabama.

To learn more, visit [kohlercompany.com](http://kohlercompany.com). **C**

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# Home Service Spending Hits New Heights

TORONTO, ONT — Jobber, a leading provider of home service management software, recently released its latest Home Service Economic Report: *2021 Review*. The report features expert insights and proprietary data aggregated from more than 160,000 residential cleaners, landscapers, HVAC technicians, window washers, plumbers, and more, who use Jobber.

“The performance of the Home Service category has made the trades an attractive option for entrepreneurs, those seeking a career change, and young adults entering the workforce,” said Sam Pillar, CEO and co-founder of Jobber. “2021 demonstrated just how essential the Home Service category is with its high growth and unprecedented consumer demand.”

## Home Service Outperforms

Spending on Home Service outperformed most major categories, such as Food and Beverage Stores, Clothing Stores, and Restaurants, throughout 2021, with growth exceeding pre-pandemic levels. Home Service revenue growth has been steadily growing since June 2020. Year-over-year median revenue grew at a faster rate in Q4 2021, even while new work scheduled during Q4 2021 slowed, showing companies were able to make more per job.

- **Contracting Segment Prices Climb:**

Contracting businesses benefited from increasing prices with 12% revenue growth in Q4 2021.

- **Contract Jobs Grow Cleaning Segment:**

Recent growth in the Cleaning segment's new

work scheduled was driven by a 16% year-over-year increase in contract jobs.

- **New Work for Green Segment Stands Out:**

The Green segment, which includes outdoor services such as pressure washing, lawn care, and landscaping, experienced high growth in new work scheduled during 2021, while other segments slowed down.

## Housing Dynamics

The active real estate market, further heightened by the desire to purchase homes before mortgage rates increase, continued to create momentum and demand for home services.

- **New Homes Can't Bridge the Gap:**

The U.S. housing market is nearly four million homes short of buyer demand; the supply of newly built units has been unable to satisfy this ever-increasing demand.

- **Shoppers Turning to Older Homes:**

With limited supply, homebuyers are turning to older homes or choosing to invest in their current home; as such, home improvement and maintenance expenditures are tracking toward double-digit growth in 2022.

## Payments Tech: Pay Now or Later?

While some home service businesses like the immediate liquidity of cash, others prefer to take checks for

a large job so they don't have to pay credit card fees. That said, Jobber's data does indicate that adoption of payment technology is on the rise.

- **Growth of Online Payments:** Online payments grew to 39% of all payments processed across all Home Service segments.

- **Green Segment Catching Up:** Green businesses, which showed the lowest percentage of online payments prior to the pandemic, has seen rapid adoption, climbing over 35%.


## Retirements Open Opportunities

The challenge to hire skilled trade workers remains widespread, despite a significant earning potential for those who choose to enter Home Service.

- **Retirement's Impact:** Half of the people who exited the labor market in 2021 were 55+, accelerating the rate of retirement—a macro trend that also impacted Home Service.

- **Job Openings Remain Unfilled:** The ratio of hires to job openings continued to grow, with openings widely outnumbering positions being filled.

“It's a testament to the resilience of the Home Service category that revenue growth can be sustained even when there's a drastic shortage of talent,” said Abheek Dhawan, VP, Business Operations at Jobber.

To download the report visit: <https://getjobber.com/home-service-reports/february-2022/> 

# National Hardware Show to Join Design and Construction Week in 2023


## ► Continued from page 3

“We are absolutely thrilled that the National Hardware Show (NHS) will be in Las Vegas during the same time that Design & Construction Week takes place,” said Jerry Howard, CEO of the National Association of Home Builders. “NHS creates synergy with the International Builders' Show and NKBA's Kitchen and Bath Show. Co-locating NHS with IBS and KBIS will allow attendees to explore additional products and opportunities to grow their businesses and maintain a competitive edge in the market.”

“We think having the National Hardware Show co-locate with us in Las Vegas next year is a great opportunity to expand Design & Construction Week,” said Bill Darcy, Chief Executive Officer for the National Kitchen & Bath Association. “It gives Design & Construction Week attendees more products and services to experience during their three days at the show. It's also a great way for all three associations to better serve their respective members as we look to the future.”

“Our customers benefit from more value and opportunity during their time in Las Vegas by aligning

with two other industry leading events. NHS, IBS & KBIS events have complementary product offerings that will broaden buying and selling opportunities,” said Beth Casson, National Hardware Show® Event Vice President. “NHS is the destination for uncovering trends and sourcing new products and suppliers. By hosting the show earlier in the year, this gives buyers an opportunity to kick off the year with discovery and connection, while allowing more time for critical decisions before big buying events. We've heard that this timing and an NHS collaboration with these events would be a great benefit to our customers, so we are thrilled to make this happen for our NHS Community.”

The National Hardware Show has a 76 year history of serving the home improvement marketplace. From its early beginnings in New York during the post-World War Two housing boom and eventual move to Chicago in the 1970s, to today's current location in Las Vegas, NHS is a leading event, as well as education and networking platform, serving the hardware and home improvement industry. 

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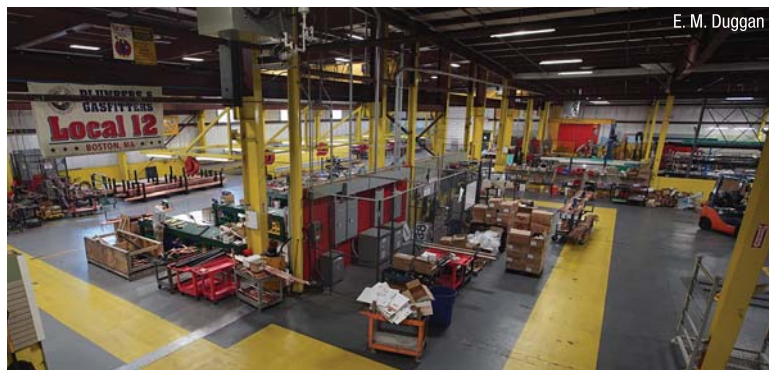
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# The Evolution of a Prefab Shop—Inception to Post-Pandemic

► Continued from page 45



Circulators in a hydronic heating panel ready to ship to the job site.



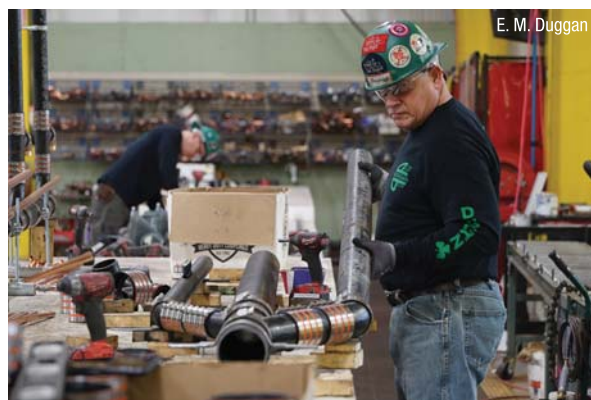
E. M. Duggan has two prefab shops that span more than 120,000 sq. ft.

equipment or gear,” says Len Monfredo, Principal, E.M. Duggan Inc. “Prefab shops breed efficiency, all of that plays a role in delivering the best product to our clients.”

Moreover, in a time where supply chain inconsistencies are prevalent, prefab shops also allow E.M. Duggan to store product that is needed, and easily assemble them as projects come up. “We can forecast what will be needed and order well in advance to make sure E.M. Duggan is delivering on time,” says Monfredo.

## The Prefab Roots

In 1967, E.M. Duggan was considered one of the first to add a prefabrication shop, a safe place for workers



Working in the prefab shop allowed E. M. Duggan workers to easily socially distance during the pandemic.

to assemble parts, rather than being subjected to the outside elements as a high-rise is being built. E.M. Duggan now operates out of two state-of-the-art prefab shops that span more than 120,000 sq. ft., out of its Canton headquarters.


In 2012, E.M. Duggan opened the HVAC prefab shop with five orbital welding stations that has now increased to eight. That investment has had a major return for the company’s clients because the machine precisely turns the pipes as welded, making it easier, safer and more efficient for its workers. E.M. Duggan also added monitors to both shops, which allows workers to see what is happening in real-time, on a large screen, rather than stopping to look up drawings on cumbersome documents. More importantly, it allows one to see an entire system, which speeds up the process as well as making it more precise.

In 2013, E.M. Duggan opened the plumbing prefab shop that’s equipped with PlanGrid workstations and workbenches. “The extremely organized stations make us much more efficient. We invested heavily in equipment that includes hydraulic cast iron and T-Drill cutting stations. These worktables and stations make it easier and safer for the workers,” says Monfredo.

## Powering Through the Pandemic

Fast-forward to the early 2020s, and prefab shops have never been more important to the safety and efficiencies on a jobsite. “During the pandemic, prefab shops played a crucial role in keeping the company moving,” says Monfredo. “Workers were naturally socially distanced and with proper COVID protocols in place, we were able to keep the shops safely open throughout the pandemic. As the jobsites reopened in Boston, we were able to deliver and keep projects on schedule.”

Prefabrication offers every project an advantage, allowing contractors to work on numerous major construction projects. For E.M. Duggan, it’s full steam ahead. For instance, two projects in particular rely heavily on the prefab process. The mechanical contractor is in the process of working on Winthrop Center, as developer MP Boston came up with the concept to create luxury residences and a mixed-use building in downtown Boston.

At the same time, E.M. Duggan is working on the Boston University stack-of-books building. “Both buildings are unique and challenging, but our shops allow us to safely tackle both high profile projects in addition to all our other ventures. Without the prefab shops we would not be as efficient,” says Monfredo. 

## Lessons in Prefab, Hydronically Speaking

According to Shane Fink, owner, Triple H Hydronics Inc., Calgary, Alberta, Canada, the main benefits of pre-fab are “construction with foresight,” meaning that when things are done using blueprints, more attention to detail is achieved. “This does require working with companies that have experience with all kinds of construction. This way, structural, mechanical and finishing can be integrated,” says Fink.

Also, lower installation costs, faster installation on site, and less time onsite also means less travel and associated expenses. “When it comes to hydronic heating panels, for example, we are able to estimate, design, calculate heat loads, procure materials and build the panel with almost zero on site measurements required,” says Fink. “In rare cases, we will make a trip to site if there might be inconsistencies with the blueprints and the actual construction. During the pandemic, we were happy to meet with clients online and continue moving their project forward without having to meet in person.”

When working with prefabrication businesses, more stock is readily available and/or the use of alternate materials is an option. Another benefit of this would be having much longer timeframes to work with as prefab systems are usually started far earlier than the actual construction on the site. This allows more time for materials to be procured and delivered.

And what about COVID? “Although the pandemic did slow down most businesses, prefab companies were busy designing and manufacturing systems that would have otherwise been on hold,” says Fink. “This way, as the world economy comes to life, these projects are already on track to make up for lost time.”

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REED started by manufacturing pipe wrenches and plumbing supplies, as is still the case, but also scales, bicycles, and laundry machinery. In 1902 Reuben Wright of Westfield, NY (a mere 35 miles from Erie), who had created his fortune by selling supplies to forty-niners during the Gold Rush and added to it with lumber interests, bought Reed Manufacturing and installed his sons to run the business. His great-great grandsons Scott (Company President



Reed company HQ in Erie, PA.

and Chairman of the Board) and Mark (Retired and a Board Member) are actively involved with REED to this day.

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REED tools were used in the construction of the Panama Canal. Subsequently in 1915, REED bench vises were awarded

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REED was a defense contractor during both world wars, turning out stocks, dies, and pipe cutters in the Great War and wrenches, turbine buckets, and airplane engine mounts for World War II. Additionally, the REED Shaw Machine for pressing collars was installed in all Navy ships and could be found in most commercial laundries across the United States. REED was exporting from early in its existence with relationships in

Europe and beyond. Today REED sells into over 100 countries. Still housed in the historic building at 1425 West 8th Street, REED remains an Erie landmark.

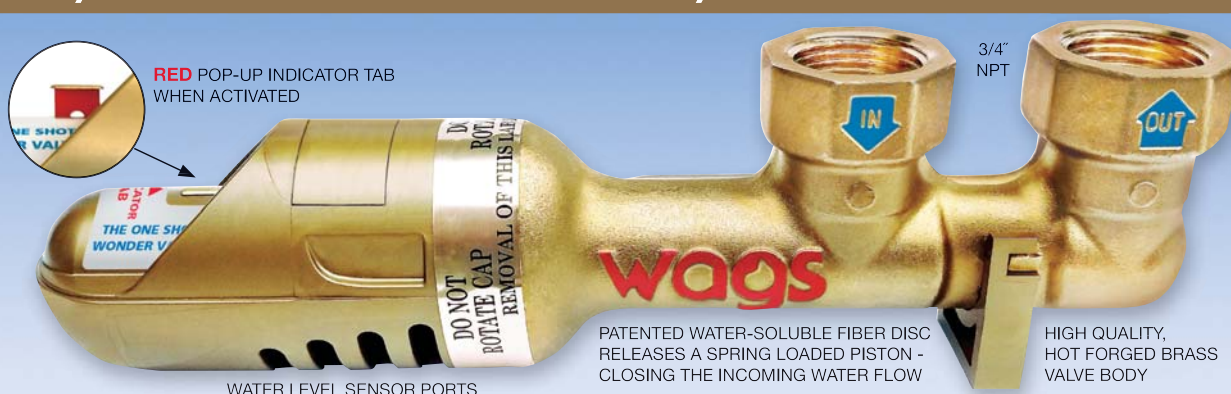
## Performance & Service

Over the past century and a quarter, Reed Manufacturing has worked for the betterment of Erie County, through the United Way and its predecessor the Community Chest. REED and its employees have supported dozens of organizations in categories from the arts to scouting to reducing poverty to medical causes. REED pledges to continue to improve its customer offerings throughout each of its next 125+ years.

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# Understanding Pneumatic and Mechanical Pipe Plugs

➤ **Continued from page 24**

maximum back pressure so you do not exceed it, and use a calibrated gauge. Be sure to properly inspect the pipe and plug of any debris or foreign substances before use. A plug should not be used if it shows any sign of wear or deterioration.

- Monitor placement and pressure of plugs: Never over or under-inflate the plug. Position the plug into the pipe at a distance at least equal to the pipe diameter and use the correct media while inflating. Always release the back pressure from the pipe before deflating to avoid dislodging the plug.
- Maintain proper maintenance and storage: Plugs may be cleaned with

mild soap and water and stored in a dry place away from sunlight. Inspect the plug for damage (any signs of cut, wear or deterioration) after each use. If damaged, do not use it again.

Following these simple steps and

taking the time to correctly do the procedure can actually make the difference between life and death. Cherne provides safety tags and safety instruction manuals with each plug that leaves our factory. Ensure that you and everyone on your crew are familiar with the

hazards and the preventive measures necessary when working with pipe plugs. [C](#)

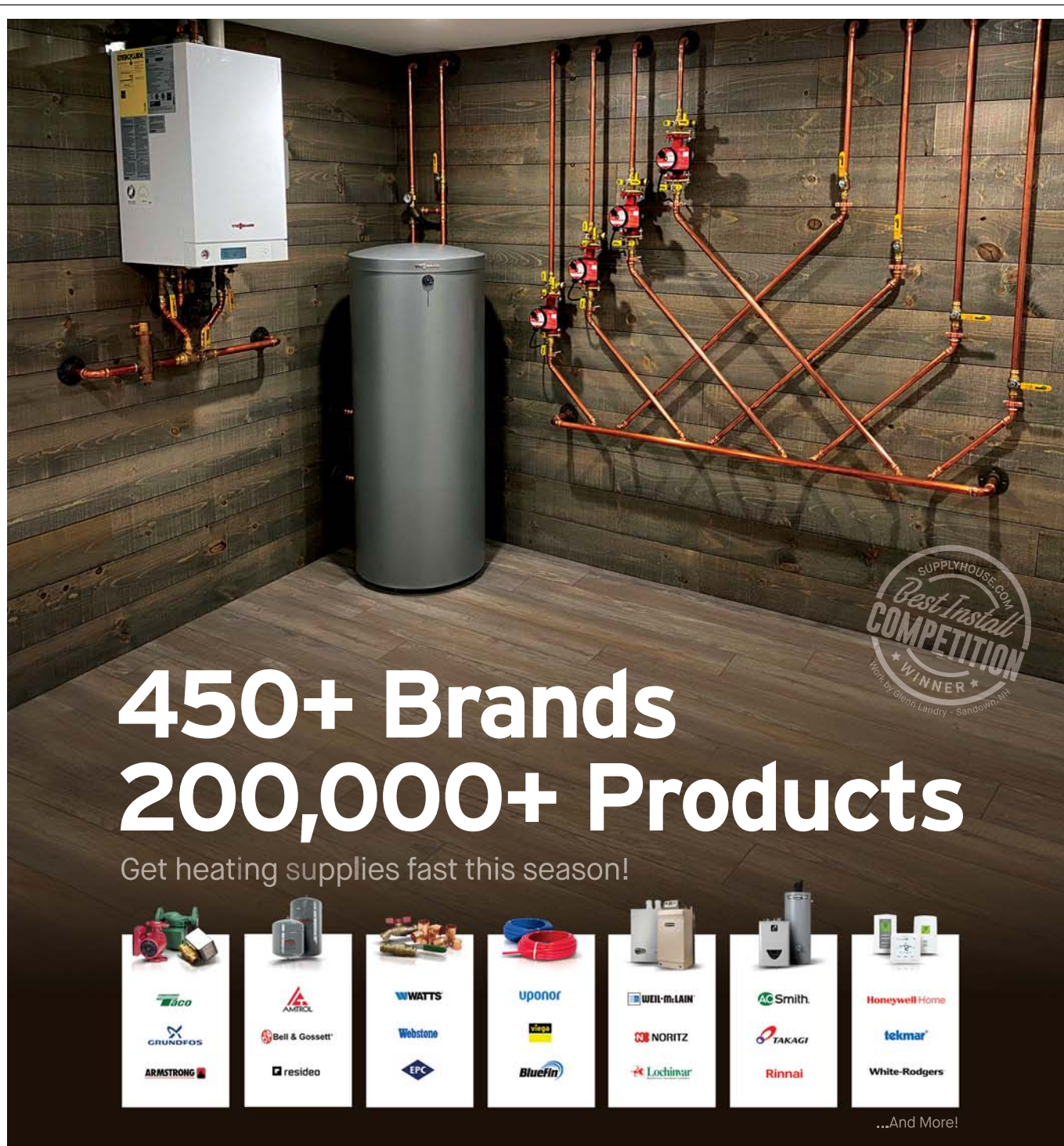
*Jake Shevik is a Product Manager at Cherne. He can be reached at [jshevik@oatey.com](mailto:jshevik@oatey.com)*

## Construction Salaries on the Rise

ALACHUA, FL — Skilled craft professionals continue to earn high wages, according to NCCER's 2022 Construction Craft Salary Survey. More than 135 commercial, industrial and residential construction companies across the U.S., representing over 337,000 employees, participated in the survey.















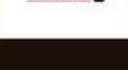






Of the 41 construction positions surveyed, average annual salaries ranged from \$49,920 to \$98,965. Project supervisors and project managers topped the list, earning over \$90,200 and \$98,900 respectively. Professions earning more than \$65,000 include HVAC technician, commercial electrician, boilermaker, industrial maintenance mechanic, pipefitter, rigger, millwright, industrial electrician, pipe welder, surveyor, construction site safety technician, mobile crane operator, plumber, combo welder, tower crane operator, and power line worker.

Additionally, eight more craft areas made more than \$60,000 per year. The most significant pay increase was power line worker, up 25% from previous years, with plumber a close second at a 23% increase. Complete results are available at [nccer.org/research](http://nccer.org/research). [C](#)



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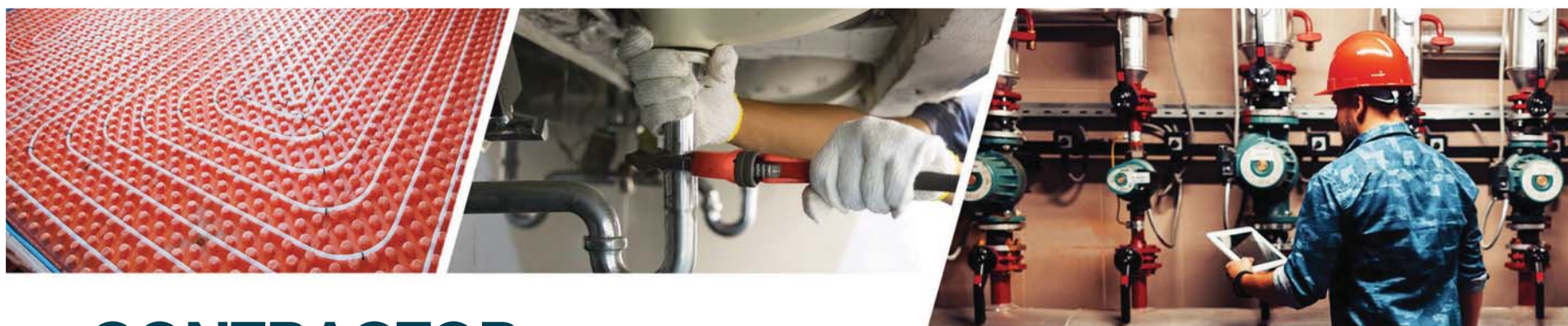
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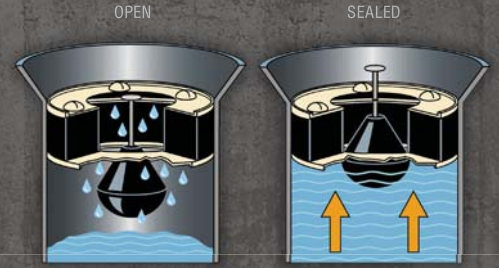
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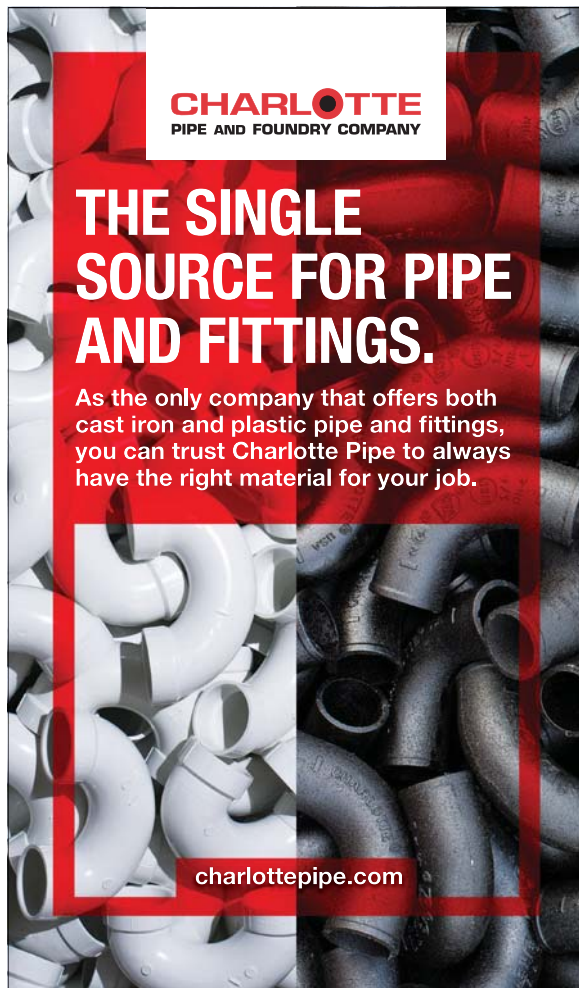
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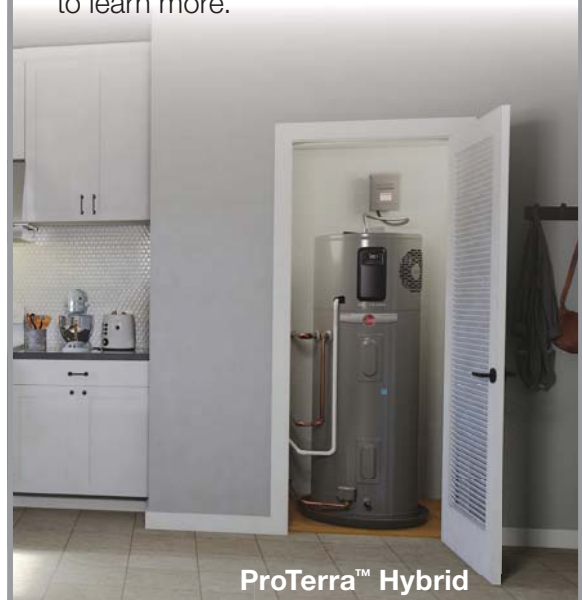
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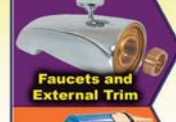
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# The Wisdom of Crowds

The first half of February was like being dropped into a hurricane from 14,000 feet.

Okay, maybe not that bad. But covering the AHR Expo (Jan. 31st - Feb. 2nd) then pivoting to cover KBIS/IBS (Feb. 8th- 10th) was rough. I'm probably out of practice. The shows—while not as well-attended as they have been in the past—seemed busier than ever. I don't think I had a half-hour while the show floors were open when I wasn't scheduled to meet someone and see the latest, greatest thing that was about to revolutionize the plumbing and heating industry.

The feature this month is coverage from all three shows as well as the WWETT Show in Indianapolis (Feb. 21st-24th). It starts on pg. 22 and goes three pages, but it could easily have gone six. Everyone had so much to talk about. Maybe it's because the products companies were trying to launch in 2020 never got a chance to take off and they were hoping to re-introduce them? Maybe because they had almost two years of hard work and innovation saved up they were dying to show off? Maybe everyone was

just glad to back at a big show again? To feel the size and strength and diversity of this industry once more.

And make no mistake, these shows felt huge. More than 70,000 people at Design and Construction Week felt like twice that number (to me, anyways) after having been away for so long. Exhibitors remarked how pleasantly surprised

decorative fixtures, faucets and showerheads are expanding their behind-the-wall offering; valves especially, but also leak detection systems. Contractor feedback is part of what's driving the change as manufacturers want to be able to offer complete packages to make installations easier, especially on large, multi-unit residential jobs.

**Almost every manufacturer I talked to had supply chain problems, and almost everyone had found the same solution: honesty.**

they were by the foot traffic, especially on the first days of the shows. People had been worried about a spate of late cancellations by some key companies. A few exhibitors had also recently attended the Consumer Electronics Show, which had some underwhelming numbers.

Here are just a few things that jumped out at me as I was walking around.

Companies best known for their

Conversely, some companies best known for their behind-the-wall products are trying to grab a piece of the front-of-the-wall market. Oatey, for example, launched its new L.R. Brands line in part to get some of its decorative drains in front of designers and remodelers.

Industry influencers—experts with large social media followings—are becoming a big deal, not just online but

in-person. Several major tool manufacturers had meet-and-greets or product demos with influencers at their booths and they seemed to generate a lot of buzz.

Heat pumps—heat pumps everywhere! Greenhouse gas emission targets are spurring efficiency legislation, with mandates, rebates and incentives galore. That means cold weather heat pumps, commercial heat pumps, air source, ground source, and water source heat pumps in every kind of configuration you can imagine.

Lastly, almost every manufacturer I talked to had supply chain problems, and almost everyone had found the same solution: honesty. Having honest conversations with their vendors and their customers (and sometimes their customers' customers) about what they could deliver and when. Few people are happy with the state of the supply chain, but almost everyone has factored it into their short- and mid-term planning.

I've missed having those kind of conversations in-person. So, I'm off to the Work Truck Show in Indianapolis next week. If you're going, drop me a line! **C**

## ADVERTISER INDEX

Advertisor	Website	Page
A.O. Smith	www.hotwater.com	19, 53
AB&I Foundry	www.abifoundry.com	21, 53
Aerco International, Inc.	www.aerco.com	15, 52
American Standard Plumbing Lixil	www.cleanerhands.com	16
AquaGuard LLC	www.wagsvalve.com	46, 55
ASC- ES	www.asc-es.com	27
Charlotte Pipe & Foundry	www.charlottepipe.com	30, 55
Easyflex, USA.	www.easyflexusa.com	14, 55
ECR International	www.dunkirk.com	55, BC
FloLogic Inc.	www.flologic.com	43
General Pipe Cleaners	www.drainbrain.com	IFC, 53
Gerber Plumbing Fixtures	www.gerber-us.com	25
Jomar Valve	www.jomarvalve.com	51, 53
Liberty Pumps	www.libertypumps.com	13, 53
Lync Watts Heating & Hot Water Solutions LLC	www.lyncbywatts.com	11, 54

Advertisor	Website	Page
Merit Brass	www.meritbrass.com	40, 53
Navien, Inc.	www.navieninc.com	9, 52
Pfister	www.americanplumberstories.com	39, 55
Progressive Insurance	www.progressivecommercial.com	10
Rheem Water Heating	www.rheem.com	5, 55
Service Roundtable	www.serviceroundtable.com	49
Shortridge Instruments, Inc	www.shortridge.com	44, 45
Stiebel Eltron Inc	www.stiebeleltron.us	37, 54
Supply Smart	www.supplysmart.com	41, 54
supplyhouse.com	www.supplyhouse.com	47
Taco, Inc.	www.tacomfort.com	33, 52
Triangle Tube	www.triangletube.com	29, 54
United Rentals, Inc.	www.unitedrentals.com	54, IBC
Watco Mfg. Co.	www.watcomfg.com	42
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