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Boiler Upgrade for Ontario Office Building Delivers Peak Performance

■ SPECIAL TO CONTRACTOR

A multi-story office building in Ontario sought to upgrade its two-stage boiler and replace its direct-fired water heater to eliminate short cycling, improve efficiency and provide heating redundancy. Four high-efficiency boilers and one stainless steel indirect-fired water heater from Weil-McLain Canada provided the remedy needed.

“The water heater was deteriorating rapidly, and the boiler

➤ **Turn to Boiler, page 42**



Part of the old system before the upgrade.

Executive Order on PLAs Provokes Firestorm of Comment

■ BY STEVE SPAULDING OF CONTRACTOR'S STAFF

The comment period for a Notice of Proposed Rulemaking (NPRM) for Executive Order 14063 closed this week. The more than 8,300 comments lay out strong, conflicting opinions between merit shop and union shop contractors and their respective allies in both government and industry. Associated Builders and Contractors has called for the order's immediate withdrawal, with unions, in contrast, expressing support.

➤ **Turn to Story, page 8**



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Chip Greene Receives PHCC's Col. George D. Scott Award

■ SPECIAL TO CONTRACTOR

Recognizing Past National President Charles “Chip” Greene’s decades of dedication to the p-h-c industry and the association, the Plumbing-Heating-Cooling Contractors—National Association (PHCC) presented its highest honor, the Col. George D. Scott Award, to Greene during its annual awards ceremony, held Oct. 7 at PHCCCONNECT2022 in Charlotte, North Carolina.

➤ **Turn to Green, page 46**

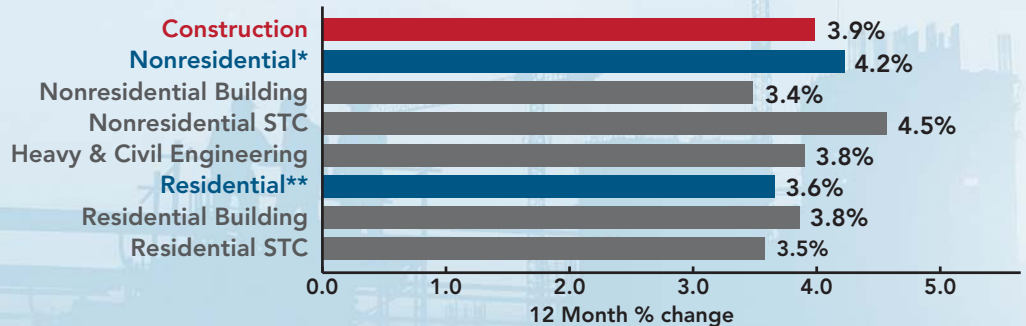


Chip Greene (holding award) and PHCC—National President Joel Long (far right).

CONTRACTOR INFOCUS

Construction Employment Growth:

September 2021 vs. September 2022

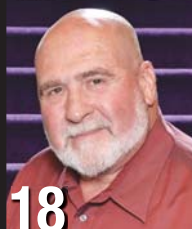


*Includes nonresidential building, nonresidential STC, and heavy and civil engineering

**Includes residential building and residential STC

Source: Bureau of Labor Statistics

IN THIS ISSUE



18
Schwartz on
MANAGEMENT



28
Linhardt on
HYDRONICS



36
Feldman on
TECHNOLOGY

FEATURE

22 PHCC
National Assn. holds
PHCCCONNECT2022

PRODUCTS

52
Neutron Digital Emergency
Mixing Valve

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Michel & Heimer to Step Down From Service Roundtable Leadership

■ SPECIAL TO CONTRACTOR

TAMPA, FL — In remarks delivered on Oct. 19th at the 2022 Service World Expo, Service Roundtable co-founders President Matt Michel and Senior Vice President David Heimer announced that they would be stepping down from their leadership positions with the organization at the end of the year.



[Matt Michel has been a long-time contributor to CONTRACTOR, with a regular monthly column on marketing and best practices. - Ed.]

The capstone, they said, of their time with the organization was shepherding it through the recent pandemic. "In early 2020, ours was the lone voice of optimism

➤ Turn to Michel, page 48

Construction Job Openings Up By 54,000 in August

■ SPECIAL TO CONTRACTOR

WASHINGTON, DC — The construction industry had 407,000 job openings in August, according to an Associated Builders and Contractors analysis of data from the U.S. Bureau of Labor Statistics' Job Openings and Labor Turnover Survey. JOLTS defines a job opening as any unfilled position for which an employer is actively

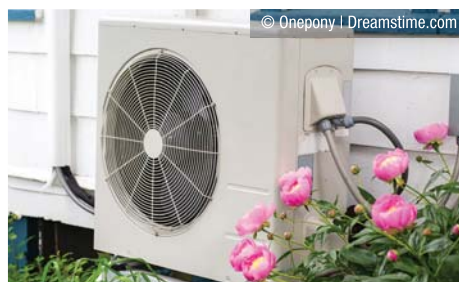


➤ Turn to Construction, page 12

Heat Pump Water Heater Market to Double by 2032

■ SPECIAL TO CONTRACTOR

The global heat pump water heater market was valued at US\$ 1.4 Billion in FY 2021, reaching **US\$ 1.6 Billion in 2022**, as per a recently published market research study by Fact.MR. During the forecast period ranging from 2022 to 2032, the market is poised to incline at a **6.8%** value Compound Annual Growth Rate (CAGR), concluding at a valuation of **US\$**



➤ Turn to Heat Pump, page 50

CONTRACTOR INFOCUS

Healthcare-Related Construction Spending



Source: Marcum Construction Index Second Quarter 2022

Features & Departments

- 6 Fleet Management**
Asset tracking with Lytx, the latest from the NTEA.
- 20 Forum: The Electrification Sound Bite**
Q&A with the PHCC's VP Regulatory Affairs, Chuck White.
- 22 Feature: PHCCCONNECT2022 Held in Charlotte**
Association holds annual convention and expo.
- 28 Hydronics & Radiant Section**
Snow melt project, dip tubes, clean energy career grants and more.
- 48 User Friendly Announces Acquisitions**
Home services company expands in Kentucky.
- 53 New Products**
- 58 Editorial**
It's All About Trust

Columnists

- 18 Management** by Al Schwartz
Skilled Trades Centers
- 28 Hydronics** by Pat Linhardt
One of the Old Ways
- 36 Technology** by Patti Feldman
Business Operations in the Office or on the Go
- 38 Marketing** by Matt Michel
6 Reasons to Raise Your Prices Now
- 40 Best Practices** by Greg Wells, President of MAX Service Group
3 Meaningful Benefits to Attract and Retain Talent

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In Brief

FieldBin, a field service management software provider, has announced it will offer its application free for one year to any Florida-based trade company assisting with Hurricane Ian recovery. FieldBin's application is designed to help contracting, HVAC, plumbing, electrical, and other trade companies manage their business.

Oatey Co. has announced the promotion of Dave Biron to Vice President, Distribution and Specialty Manufacturing. With more than 20 years of experience in manufacturing and distribution operations management, Biron joined Oatey Co. in 2014 as Plant Manager of Cherne Industries.

In late September, more than 20 **Unified Group** members gathered in Scottsdale, Arizona, to attend the 2022 Financial Forum. The event included networking and educational sessions. The first day's guest speaker, Leslie Shiner, of industry consulting firm The ShinerGroup, led the morning session.

Mikrofill Systems Ltd. has appointed Ohio-based **Midwest Spec** as its first plumbing wholesale-channel representative for the US. The firm will be introducing the Mikrofill 3 line to mechanical engineers, contractors and distributors working on commercial construction and maintenance projects in Kentucky, Ohio, Western Pennsylvania, West Virginia and — new for 2022 — Midwest Spec recently launched into the state of Indiana.

The training section of **Watts.com** has been updated with all new content and features, including Instructor-Led Training (offered at six Watts Learning Centers), Quick Online Learning and Continuing Education courses. The CE courses are approved by the American Society of Plumbing Engineers (ASPE) and the American Institute of Architects (AIA). Visit Watts.com/training.

Fujitsu General America, Inc. has announced a global shift in the branding of its VRF and mini-split heat pump product lines. From October 3, onwards, all VRF and mini-split lines will be labeled as Fujitsu branded Airstage products. Timing for labeling varies depending on the model. The rebrand unifies and strengthens Fujitsu's global positioning and will help facilitate expansion.

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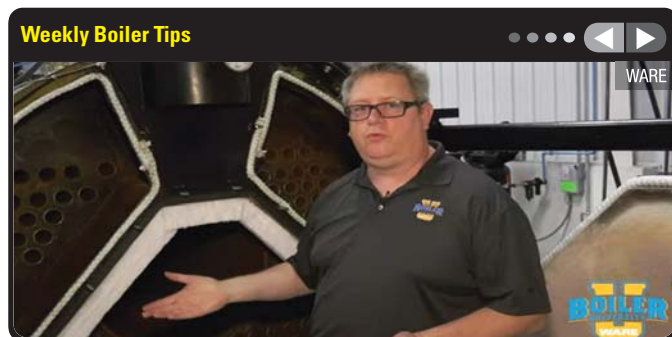
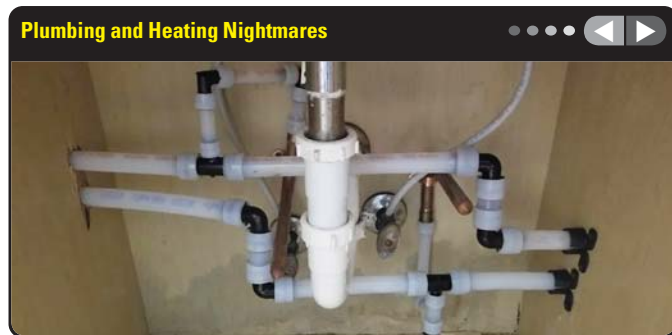
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- IAPMO Seeks WE•Stand Direct Potable Water Reuse Task Group Members
- Oatey Co. Emerging Professionals Group Receives Program of the Year Award
- Niagara Honored With EPA's WaterSense Partner of the Year Award

Videos & Media Galleries



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.

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- ▶ Want to know about how to get the flow rates right in hydronics from master trainer Steve Swanson?
- ▶ Want to know what the 14 characteristics are of a professional plumbing company? Matt Michel will tell you.

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

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

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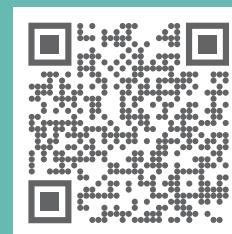
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Lytix Introduces Asset Tracking Service

■ SPECIAL TO CONTRACTOR

SAN DIEGO, CA – Lytx® Inc., a global leader in video telematics solutions, has launched the Lytx Asset Tracking Service to augment its industry-leading fleet management solutions. Available now in the U.S. and Canada, the Asset Tracking Service can be used by fleet managers looking for a streamlined approach to locating and managing their powered equipment. The company also announced several new maintenance enhancements for its Fleet Tracking Service, which are slated to release later this year.



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Lytix

The hardware component of the asset tracking system.

With nearly \$1 billion dollars of large machinery lost or stolen in the United States every year, today's fleet managers

Nearly \$1 billion dollars of large machinery is lost or stolen in the United States every year.

need an efficient solution that can quickly help them secure and locate their most important powered assets.

Available now, the all-new Lytx Asset Tracking Service is designed for fleet managers who need timely information about their powered equipment. The service consists of the Lytx Asset

Tracker hardware and a monthly subscription per unit that grants customers access to the customizable software via a Lytx account.

Asset Tracking Service

Asset tracking is essential for customers with mixed fleets since the location of

assets can change quickly. Without a means of locating and tracking equipment, companies can be exposed to theft and loss of equipment.

By installing a Lytx Asset Tracker device into a powered asset and using the tracking software, companies can quickly obtain important data such as the asset serial number, current estimated location, last connected time, and the last movement date. Customized real-time alerts provide additional visibility including how long the equipment has been dormant, current battery level, and when an asset enters or exits a defined area.

Paired with Lytx's Fleet Tracking Service, asset tracking can provide fleet managers with the peace of mind of knowing where both their vehicles and essential powered equipment are at all times. This full-view visibility gives fleet managers and business owners the ability to track history and travel patterns to determine vehicle and equipment usage, as well as whether they need to buy more equipment or offload some.

Although Fleet Tracking Service is not required to purchase Asset Tracking Service, subscribers to both services have the additional benefit of being able to view their vehicles as well as their powered equipment in one integrated map.

NTEA Releases Commercial Vehicle Market Report

BALTIMORE, MD — NTEA – The Association for the Work Truck Industry released the first edition of the U.S. Commercial Vehicle Market Report – Powered by Commercial Truck Trader, NTEA and S&P Global Mobility. This semi-annual industry report delves into the details, data and trends around the life cycle of commercial vehicles—from chassis sales to truck registration to later stages when used vehicles re-enter the sales market.

The fall 2022 U.S. Commercial Vehicle Market Report was released in conjunction with NTEA's Executive Leadership Summit, in Baltimore, Maryland, during a session on trends within the commercial vehicle population.

"The U.S. Commercial Vehicle Market Report provides work truck industry companies with forecasting and trend analysis they can leverage

in their operational planning," said Kevin Koester, NTEA managing director. "We're excited to launch this collaborative report and ultimately connect with our membership to gather feedback and discuss findings."

"The commercial vehicle market is rapidly changing due to many factors, including the last-mile boom and emergence of electric vehicles," said Mark Hazel, associate director, commercial vehicle reporting at S&P Global Mobility. "This collaborative report between NTEA, S&P Global Mobility and Commercial Truck Trader will provide unparalleled insights to guide businesses through the changing commercial vehicle market."


This first edition of the U.S. Commercial Vehicle Market Report leverages multiple complex datasets currently available to the market to provide an introductory landscape

of opportunities, trends and challenges in today's incomplete vehicle market.

Topics Covered

- Purchasing trends and forecasts by vehicle class
- Fleet reactions to supply shortages and resulting effects on demand
- How recent chassis shortages have impacted sales and consideration trends
- Ways the industry is preparing for new emission standards
- How electric vehicles are being used commercially

Learn More

The fall 2022 U.S. Commercial Vehicle Market Report is available free to the industry. For additional details and report access, visit ntea.com/cvmarket-report. 

A Single, Seamless Platform

Asset Tracking is the latest offering to join Lytx's fleet management solutions. Customers looking to

➤ Turn to Lytx, page 46



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Executive Order on PLAs Provokes Firestorm

► Continued from page 1

The new Executive Order (EO) if implemented would require Project Labor Agreements (PLAs) on federal construction projects of \$35 million or more. This would revoke an earlier EO from the Obama era which encouraged—but did not require—federal agencies to mandate PLAs on large-scale federal construction projects exceeding \$25 million (in total value, on a case-by-case basis), and permits states and localities to mandate PLAs on federally assisted projects.

A PLA is a pre-hire collective bargaining agreement with one or more labor organizations that establishes the terms and conditions of employment for a specific construction project. As a condition of being awarded a contract, the contractor must sign the negotiated PLA with the relevant union organizations.

Opposition from ABC

“ABC calls for the immediate withdrawal of this illegal proposed rule and its imposition of anti-competitive and inflationary government-mandated PLAs on federal contracts,” said Ben Brubeck, ABC vice president of regulatory, labor and state affairs in a statement issued October 19. “PLA mandates undermine economy and efficiency in federal contracting, increase construction costs by 12% to 20%, create project delivery delays and discriminate against nonunion contractors and workers, who comprise 87.4% of the construction workforce.

“The Biden administration’s rule will only exacerbate significant headwinds the U.S. construction industry faces: severe supply chain disruptions, unprecedented materials cost inflation of 40.5% since the onset of the COVID-19 pandemic, declining investment and a widespread skilled workforce shortage,” continued Brubeck. “ABC strongly urges the [Federal Acquisition Regulatory] Council to immediately withdraw the proposed rule to efficiently provide taxpayers with the best possible construction product at the best possible price and provide all construction industry stakeholders with a fair opportunity to compete for taxpayer-funded construction projects.”

Associated Builders and Contractors is a national construction industry trade association representing more than 21,000 members. ABC is strongly grounded on the merit shop philosophy as the best way to win work, and to safely deliver value to their customers.

According to a September 2022 survey of ABC contractor members, 98% oppose the proposed rule.

In the statement, ABC said their opposition was joined by a diverse coalition of construction industry, small business and taxpayer advocates, as

Much of the rest of the comment goes on to detail the use of PLAs in the public and private sector, and how they have proven valuable in guaranteeing a skilled workforce for projects, while ensuring timely delivery, quality control and enhanced safety.

“For these reasons,” the statement reads, “it is not surprising that at least 22 PLA studies and reports have been published by universities, non-profit groups and government agencies across the country demonstrating their substantial value and

Government Affairs Committee, and Timothy J. Brink, CEO MCAA, the Association strongly supported the EO, saying, “Long-recognized use and experience with PLAs in the private and public sectors nationwide... combined now with new objective research on union/non-union productivity on a database of some 1,550 private sector capital projects in IPA’s database over the past 20 years convincingly validates the sound purchasing policy advanced in Executive Order 14063.”

IPA stands for Independent Project Analysis, an independent construction engineering and cost consulting firm. The comment referred often to IPA data, in particular one study showing that while the open shop wages come in on average some 9.7% below the all-in union rates, various factors combine to make the union sector fully 4% more cost effective overall relative to the open shop.

Those factors included union sector work productivity advantages, lower union craft staffing levels (10% below the open shop) and more reliable workforce deployment with less turnover over the course of the project.

The Construction Employers of America (CEA)—a coalition of seven leading, national construction employer associations that collectively represent thousands of businesses employing more than 1.4 million skilled construction industry trades employees—also shared its comments.

“The federal policy that PLAs promote economy and efficiency has been implemented and maintained across three consecutive Presidential Administrations. The arguments put forward against this proposal were already considered and rejected during this time,” the statement read. “There is no new data that warrants displacing this longstanding, carefully considered policy determination.”

Next Steps

Now that the public comment period has concluded, the EO will be sent back to the FAR Council. After reading and debating comments, the agency will determine whether to revise the proposed rule, abandon the proposal, or move forward to the final rule stage of the rulemaking process. **G**

Proposed rule that would require project labor agreements on federal construction contracts of \$35 million or more draws strong opposition and support

well as 18 Republican governors and 50 members of the U.S. Senate and House.

Support From UA

The United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, commonly known as the United Association (UA), is a labor union representing over 359,000 skilled craft persons.

In their 73-page comment on the EO, signed by Ellen O Boardman, UA General Counsel, the association asserts that the new federal PLA policy will not only benefit project delivery on immediate mission critical facilities, but it will also advance the federal government’s long-term construction procurement needs by supporting the workforce development so critically needed in the construction industry.

The statement notes that PLAs have been used extensively throughout the public and private sectors for nearly 100 years, on projects conceivably totaling in excess of 1 trillion dollars. “Unfortunately, because there is a certain amount of political controversy over using PLAs on public projects, the track record and benefits of PLA-use have sometimes been mischaracterized and misunderstood.”

increasingly important benefits.”

In a statement to *CONTRACTOR*, Andrew Galo, UA Department of Legislative and Political Affairs, pushed back on prior statements by ABC.

“ABC’s arguments here don’t hold water,” Galo said. “The lion’s share of PLAs are used in the private sector, by companies like Toyota and Walmart, who have no allegiance whatsoever to union labor. These companies use PLAs because they enable them to maximize profit and complete projects on time and under budget. In the last 18 months, \$214 billion worth of projects have used PLAs—with \$185 billion coming in the private sector. If PLAs truly drove up costs and cut contractors out of the process, why would so many companies invest hundreds of billions of dollars using PLAs?”

Support from MCAA, CEA

The Mechanical Contractors Association of America (MCAA), a national specialty construction industry trade association representing some 2,700 union-signatory mechanical construction and mechanical service firm employers nationwide, also weighed in.

In a lengthy comment signed by Jim Gaffney, President Goshen Mechanical Contractors, Inc., and Chair MCAA

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Perfect for mounting in cabinets

Bradford White Names Rich Simons Senior VP

Industry veteran to oversee company's product strategy and marketing.

AMBLER, PA — Bradford White Corporation, an industry-leading American manufacturer of water heaters, boilers, and storage tanks, has named Rich Simons senior vice president of the company's product strategy and product marketing initiatives.

In his new role, Simons will build on Bradford White's engineering and manufacturing investments to accelerate the expansion and evolution of the company's customer-centric product portfolio in a world of changing regulatory requirements and customer needs. Further, he will lead the multi-year strategic planning process for Bradford White Corporation and its subsidiaries, in partnership with sales, marketing, product management, engineering and manufacturing. In addition, Simons will provide leadership and alignment of



Rich Simons

strategic acquisitions for the Corporation's product portfolio. Bradford White Corp. subsidiaries include Bradford

White Water Heaters, Laars Heating Systems and Niles Steel Tank.


A Period of Transformation

"Having Rich centralize and further develop our strategic product and marketing processes is critical to Bradford White's success as we enter a period of transformation across many of our product categories in response to major regulatory and societal changes," said Bruce Carnevale, president and CEO of Bradford White Corp. "Rich's vast industry knowledge and past success in these areas will guarantee that we extend our tradition of product innovation for our customers, well into the future."

According to Simons, "Bradford White has made significant investments in resources to continue the company's

rich history of innovation. These resources, which include everything from manufacturing and research facility expansions to increasing strategic partnerships and human capital, will help us continue to commercialize the products our customers need to be successful."

Simons joined the Bradford White family in 2016, when he was named vice president and general manager of Laars® Heating Systems. Since 2021, he has served as senior vice president of Laars. Simons is a graduate of Case Western Reserve University and the University of Minnesota Carlson School of Business. He has more than 30 years of experience in the boiler and water heating industry.

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

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Construction Job Openings Up By 54,000 in August

► **Continued from page 3**

recruiting. Industry job openings increased by 54,000 last month and are up by 45,000 from the same time last year.

Construction workers quit their jobs at a faster rate than they were laid off or discharged for the 18th consecutive month in August.

Analysis

“Today’s job openings estimate is further evidence that contractors continue to hunt for talent,” said ABC Chief Economist Anirban Basu. “In August, 5% of all construction jobs were unfilled, higher than at any point between 2001, when the BLS began tracking it, and 2021. Contractors have every intention of expanding their staffing levels over the next several

Construction Industry Job Openings and Labor Turnover Data: August 2022						
	August 2022	July 2022	August 2021	1-Month Net Change	12-Month Net Change	12-Month % Change
Total						
Job Openings	407,000	353,000	362,000	54,000	45,000	12.4%
Hires	373,000	384,000	371,000	-11,000	2,000	0.5%
Total Separations	360,000	355,000	375,000	5,000	-15,000	-4.0%
Layoffs & Discharges	125,000	134,000	161,000	-9,000	-36,000	-22.4%
Quits	229,000	210,000	189,000	19,000	40,000	21.2%
Other Separations	6,000	11,000	25,000	-5,000	-19,000	-76.0%
Rate						
Job Openings	5.0%	4.4%	4.7%			
Hires	4.8%	5.0%	5.0%			
Total Separations	4.7%	4.6%	5.1%			
Layoffs & Discharges	1.6%	1.7%	2.2%			
Quits	3.0%	2.7%	2.6%			
Other Separations	0.1%	0.1%	0.3%			

Source: Bureau of Labor Statistics



months, according to ABC’s Construction Confidence Index, but severely constrained labor supply will frustrate these efforts.

“Despite the increase in construction industry job openings, the overall number of job openings economy-

wide fell to 10.1 million, its lowest level since June 2021,” said Basu. “This is actually good news for the real estate and construction segments, as any evidence of weakening economic momentum brings us closer to the point when the Federal Reserve can

stop ramping up borrowing costs.” Visit abc.org/economics for the Construction Backlog Indicator and Construction Confidence Index, plus analysis of spending, employment, job openings, GDP and the Producer Price Index. **C**

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ICC Hosts Water Policy Conference

WASHINGTON, DC — The International Code Council held a water policy and technical conference titled “ICC Water: Standards for a Resilient Future” on Tuesday, October 18, 2022. Water experts and industry professionals celebrated the 50th anniversary of the Clean Water Act’s

enactment with discussions promoting best practices for water codes and standards.

Keynote speakers and panelists included: Brenda Mallory, Chair, White House Council on Environmental Quality; Mitch Landrieu, White House Coordinator for Infrastructure Imple-

mentation; Dominic Sims, Chief Executive Officer of the ICC; David Yashar, Deputy Chief of the Building Energy and Environment Division of the Engineering Laboratory at the National Institute of Standards and Technology; and Rabia Chaudhry, National Water Reuse Expert at the US EPA.



Code Council staff, White House officials, water experts and industry professionals discussed how to continue improving water policies, advancing clean water, and ensuring public safety. Key topics included safe solutions for septic waste given rising sea levels and changing flood patterns, boosting water efficiency, protecting public health, and increasing sustainability and community resilience through water reuse.

Dominic Sims held a discussion with Brenda Mallory, which addressed the Administration’s initiatives concerning decentralized wastewater and water reuse, improving water systems efficiency holistically, and why the application of consistent and rigorous standards is so important to the goals of the Clean Water Act and its effective implementation.

“Part of our goal, and what you see in the Bipartisan Infrastructure Law and the Inflation Reduction Act, are dollars going towards trying to eliminate toxic pollutants, such as getting rid of lead pipes and PFAS in the water,” said Mallory.

The Clean Water Act at 50

“As we reflect on the fifty years since the Clean Water Act’s enactment and look to the future, it is clear that while progress has been made, there is much still left to do to ensure access to clean water,” said Sims. “We heard loud and clear that the Code Council’s codes and standards are critical towards increasing access and safe operation for septic systems.”

To prepare our buildings and communities for water reuse in the 21st century, the Code Council, in partnership with the National Blue Ribbon Commission for Onsite Non-potable Water Systems, is establishing a Water Reuse Working Group. This group of code development leaders and reuse experts will explore opportunities to protect public health and to better support state, local, tribal and territorial governments seeking to advance water reuse opportunities through the integration of best practices into the International Codes (I-Codes).

For the full list of speakers and panelists visit: www.icc4waterresilience.com.

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Mohedano Named VP, GM of Laars

AMBLER, PA — /PRNewswire/ — Bradford White Corporation has named Domingo Mohedano vice president and general manager of its Laars® Heating Systems company. Laars is a leading U.S. designer and manufacturer of boilers, water heaters, and pool heaters used in residential, commercial, and industrial applications.

“Domingo has demonstrated that he has all the qualities necessary to continue the great success Laars has had under its current leadership team,” said Bruce Carnevale, president and CEO of Bradford White. “He is a dynamic leader with experience in process improvement and driving operational excellence, and embraces our culture of customer-centricity.”

Mohedano’s responsibilities as vice president and general manager encompass the overall operation of



Domingo Mohedano

Laars® Heating Systems as well as the company’s strategic direction and financial results.

“This is a critical, transformative period for Laars and the boiler industry,” Mohedano said. “As we continue to anticipate the many changes related to the regulatory environment, we are well-positioned to deliver our innovative products, services and technology to our customers, and I’m committed to building on Laars’ success as one of the industry’s premier boiler manufacturers.”


Mohedano succeeds Rich Simons as vice president and general manager of Laars. Simons has been named senior vice president of product strategy and product marketing at Bradford White Corporation.

Mohedano most recently served in a leadership position at IDEMIA,

a payment card manufacturer in Exton, Pennsylvania, where he was responsible for P&L and managing all aspects of the manufacturing operation, including continuous improvement, quality, environmental health and safety, supply chain, engineering and human resources.

Prior to IDEMIA, Mohedano served in multiple leadership and strategic capacities for Rheem Manufacturing and Cummins, Inc. He is a graduate of the European School of Management in Seville, Spain, and Southeastern Louisiana University.


For more information about Laars Heating Systems, visit <http://www.laars.com>.

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

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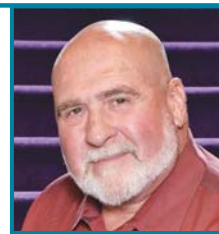
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by Al Schwartz
PLUMBING CONTRACTOR



Skilled Trades Centers

If you read this column regularly, you know that one of the repeating topics is our manpower issue, apprenticeships and getting new blood into the trades. About two years ago one of my readers, Dr. Douglas Greene, contacted me regarding a program he was developing that he called “New Collar Jobs.”

Unlike most of us (yours truly included) in the trades who wring our hands and decry the woeful state of the manpower/apprenticeship issues, and do nothing but complain about it, Douglas Greene is actually putting his time, effort and money where his mouth is and is getting things done.

Dr. Greene had a personal mission (as well as the ability, drive, and dedication) to promote Skilled Trades Center facilities and apprenticeship programs, at the high school and junior/community college level, to attract young people into trade careers. He took his idea for “Skilled Trades Centers” to the educators in his area (Washington State) and was, for the most part, did not receive much traction. He did not waiver. He kept on with his plan, knocking on doors, talking to community and college leaders, and generally making a nuisance of himself (to the education establishment at least) at every opportunity.

Corresponding with Dr. Greene over the past two years, and his efforts at getting the education establishment on board with skilled trades centers and apprenticeships, has been an interesting look into how, and why, the current mind set regarding the trades has evolved.

This is an excerpt from our correspondence highlighting the problem Douglas has had getting “educators” to take his program seriously:

I presented a collaboration proposal; to share the training and facility equipment between the local Clark Community College and the Hudson’s Bay High School (across the street from each other), to build a skilled trades center, offering up to \$500,000 in matching funds. The new college president said that trades are seasonal and do not provide long



Dr. Greene had a personal mission to promote Skilled Trades Center facilities and apprenticeship programs, at the high school and junior/community college level.

term job opportunities and rejected the proposal. Even the matching grant proposal idea did not get much attention at the college.

It doesn’t take much imagination to see the uphill struggle he has been waging. Even to the point of offering 2 to 1 matching funds (donating \$1 for every \$2 of state funding)! Here is part of his proposal for Skilled Trade Centers (STC):

“14. COMMUNITY & BUILDING INDUSTRY SUPPORT

The college will need to develop a public relations outreach program discussing the need for additional courses of study that would be needed to support an STC. The STC needs not only to gain local supporters of the college but also, the building industry needs to understand that the mission of the STC is to promote more JOB READY opportunities for students in the

building industry, to fill the ever-growing shortage of skilled trades craftsman in the area.

Collaboration with trade associations and trade unions would be a place to start, soliciting their input into how the STC facilities would be constructed as well and how it is equipped with the tools that are normally found on a job site.

Within the trade associations, one would think that builders and developers would be enthusiastic about volunteering their help as well as supporting the STC facility through their associations. Below are listed three associations in just the Vancouver area alone, and I’m sure there are some that can be reached across the river to Portland, as well as looking north of Vancouver to some of the faster-growing communities in Clark County.”

Dr. Greene has championed his idea across every level of the education

system in his state since he first published his idea (his 30 page proposal and synopsis can be viewed here: <http://bit.ly/STC3-0G--2021>) and has begun to make a little forward progress.

Upon hearing of Dr. Greene’s vision on promoting skilled trades, he was invited to present his ideas to the Evergreen High School District in Vancouver, Washington. He proposed a modest 3,200 square foot building, including his offer of matching funds as described previously. The educators he spoke to suddenly, if belatedly, saw the potential of his plan and opted to fund a 7,500 square foot building instead, agreeing to cover the additional costs for the larger facility with bond funding!

With up to 40% of graduating high school students not going on to higher education venues, what better family-wage earning opportunity could be offered than learning a trade? Talk about progress!

The upshot of Douglas’ efforts is that, at least in Washington State, the education establishment has seen the light about the trades, apprenticeships, and a trade education. It’s only been staring us in the face for almost two decades, but a win is a win, no matter how late in coming.

It has taken Dr. Greene less than a year just to get the Evergreen School District to move on his proposal, and construction of the new STC facility on the Evergreen campus is under roof with a planned opening in January/February 2023. Here is a time lapse video of the construction of the new STC:

<https://app.truelook.cloud/video?code=7ouxvthpsw0qwqh0aclbnpidq>

It also may have helped that more and more celebrities are recognizing that someone needs to do the “heavy lifting” as regards construction careers and have been using their notoriety and media platforms in saying so, loudly and clearly.

On October 4, 2022, Harbor Freight and their Tools for Schools foundation awarded William Culver a \$100,000 grant for the Evergreen High School to support skilled trades

➤ **Turn to Skilled, page 38**

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by John Mesenbrink
EDITOR-AT-LARGE

The Electrification Sound Bite

CHARLOTTE, N.C.—PHCCCONNECT’s highly anticipated, and attended, Natural Gas Bans: Electrification and How It Will Impact Your Business session hosted by Mark Valentini, PHCC Director of Legislative Affairs and Chuck White, PHCC Vice President of Regulatory Affairs, did not disappoint. This in-depth discussion gave a state-by-state assessment of the regulatory impact and implications of electrification.



Chuck White, PHCC Vice President of Regulatory Affairs.

CONTRACTOR wanted to dig deeper into PHCC’s stance on electrification and potential push back on natural gas bans. After the presentation, we caught up with Chuck White to talk about this hot topic. Chuck monitors activities of Federal Agencies such as the Department of Labor, the Department of Energy and the Environmental Protection Agency, and meets regularly with other industry stakeholders in the codes and standards arena. He relies on more than 30 years of experience in plumbing and HVAC industry to represent PHCC member’s interests.

CONTRACTOR: Everyone is for sustainability and doing what they can for the environment, but when I spoke recently with PHCC Past President Joel Long, we talked about how eliminating energy choices might be seen as a debilitating and weakening economic move. Can you expound on this?

WHITE: PHCC has been a proponent of conservation and sustainability for many years. Protecting the



water supply, maintaining indoor climate conditions and indoor air quality have been major parts of our members’ businesses, along with the efficient use of environmental resources.

PHCC has promoted high efficiency products for clients when they are technically feasible and economically justified. PHCC Past President Long referred to the dangers of eliminating choices, which ties closely to the feasibility and economic justification of products. Moving to an all-electric energy supply makes a good sound bite but when one looks deeply into the situation, the power generation and grid infrastructure are not in place to totally provide renewable energy for the required load.

The dominant generator of electricity today is natural gas; it is more efficient to provide building heating loads through gas-fired appliances rather than produce the electricity and suffer the distribution power losses inherent in the grid. Lacking the renewable generation component and eliminating fossil fuel generation leaves a huge gap in electricity production.

The answer to this is “demand side initiatives,” which are fancy words for the utility managing their load by turning off the power to consumers. This could be overcome if sufficient generating capacity is developed, but that will take significant capital, whether it is federal money, investor funding or rate payer dollars.

The scope of the needed capital investment makes the Inflation Reduction Act (IRA) look like pocket change.

Heat pumps are everyone’s answer, and yes, heat pumps will work, but they are not inexpensive and not trouble-free. At the end of the day, huge amounts of additional electricity will be needed, and in most cases heat pumps might approach the operating cost of natural gas but probably not be lower than natural gas.

CONTRACTOR: Can you give readers a sense of PHCC’s push back on natural gas bans?

WHITE: PHCC works through its state and local chapters to inform its members and their clients as to what de-carbonization really means. Most consumers hear the sound bites about efficiency and being good for the environment but don’t really understand what that means to them.

PHCC has attended public meetings, state and local chapter meetings, and gone to state legislatures to try and explain the realities of de-carbonization and electrification. The Association works with a coalition of various stakeholders to monitor activities, typically at a local level, and provide information to local members. At times, grassroots letter writing campaigns have been used to provide a voice to members and their clients in response to proposed legislation or regulation.

CONTRACTOR: During CONNECT, we heard a lot about regulations. What are PHCC’s main concerns when it comes to local, state and government regulations/legislation?


WHITE: Regulations are where the rubber meets the road. Regulations provide the interpretation and

application of legislation, at times there can be a disconnect between the intent of the legislation and what the regulators think it means. Also, some jurisdictions have moved to sidestep the legislative process and simply change the building codes—a form of regulation—to achieve their electrification goals. Sometimes these code changes may not be an outright ban but could be a requirement to provide complete wiring systems for future electrification. Adding additional expense to a building project can tip the scale away from one energy source directly to another.

PHCC is concerned that these efforts to change code requirements really do not consider the true economic impact to consumers, whether it is increased construction costs, higher cost equipment and appliances, maintenance costs, or higher utility bills. Much of this work is not done in an open and transparent process, which can yield big surprises for consumers.

CONTRACTOR: How does all of this affect contractors?

WHITE: There are a variety of ways contractors could be affected, but one thing is for sure: If you don’t know about heat pumps, you better learn. PHCC contractors are plumbing and HVAC professionals; they have worked with heat pumps before. There have been good applications for heat pumps in the past. When it has made economic sense or a client really has wanted one, our members have stepped up. There will be more consumers asking for this equipment; in fact, there are jurisdictions where this either is or soon will be a reality. There will be significant federal money from the IRA to support these products, and contractors need to be ready to provide solutions for this market.

PHCC will continue to explain the flaws in the electrification model, push for professional installations, and be ready to help consumers maintain their climate comfort. Is this a path for contractors to make more money? I would say contractors better figure this out now so they don’t make a lot less money. 

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PHCCCONNECT2022

Annual conference and expo included National Apprenticeship Contest, educational sessions, networking events and more.

Special to CONTRACTOR

The Plumbing-Heating-Cooling Contractors - National Association held PHCCCONNECT2022, their annual convention and expo, at the Charlotte Convention center in downtown Charlotte, NC. Registration officially opened on Oct. 4th and closing ceremonies were held Oct. 7th, with invitation-only events also taking place on the 3rd and the 8th.

Close to 1,300 attendees and over 130 exhibitors were in attendance. The PHCC also welcomed 61 young professionals to its new Rising Leaders Summit and hosted 74 new exhibitors on the expo floor.

The event was the Association's annual opportunity to meet, network, attend educational sessions, see some of the latest innovations from attending

manufacturers, as well as conduct the important business of the PHCC.

Grand Opening

While educational sessions and events—including the first day of the Apprenticeship Contest—took place throughout the day on Wednesday, Oct. 5th, the official kickoff for PHCCCONNECT2022 waited until exhibitors had finished their booth set-up in the main hall. Then, attendees were welcomed to the Opening Reception, sponsored by InSinkErator and Bradford White. Both exhibitors and attendees could wander from booth to booth enjoying drinks and light bites while getting a preview of the Expo.

The next morning, Oct. 6th was the Opening Breakfast, sponsored

by Bradford White, followed by the keynote speech.

During the breakfast, PHCC—National President Joel Long, a North Carolina native, said, “This is our time to build on real relationships and forge new partnerships with our plumbing, heating, and cooling family.”

Jeff Voss, President of the North Carolina chapter of the PHCC also offered his welcome on behalf of the host state. “We hope you find Charlotte a friendly, inviting city,” Voss said, “respecting the past while embracing the future.”

Bruce Carnevale, CEO of Bradford White Corp., delivered a State of the Industry Report. Carnevale spoke to the post-pandemic business climate, noting that during the shutdown water heaters were “hot ticket” items and sales were high. Now, he said, the

market is in the process of balancing itself out, a period of contraction when business volume will fall.

While many changes were impacting the industry, perhaps of primary concern was what Carnevale called the “hyper-regulatory” environment, which affected or would soon come to affect products across the spectrum. These included heat pump water heater standards, commercial condensing standards, and electrification/decarbonization legislation, both at the federal and state level.

He pointed specifically to the natural gas ban recently passed in California, which now covers both new construction as well as repair and replacement. “We’re not against regulation,” Carnevale said, “but it has to be sensible.”

Carnevale noted that if the electric



Held in Charlotte



**PLUMBING-HEATING-COOLING
CONTRACTORS ASSOCIATION**

sales and marketing, Rheem
Air Conditioning;

- Jeff Fetters, chairman of the Federated Insurance Companies;
- Scott Teson, senior vice president of skilled trades, Milwaukee Tool.

Educational Sessions

A strong line-up of 28 education sessions offered attendees relevant and timely topics, including *The Art of Managing Workplace Conflict*, *10 Stupid Financial Mistakes Contractors Make and How You Can Avoid Them*, *Electrification and How It Will Impact Your Business*, and *Why You're Losing Your Best People—How to Avoid the Great Resignation*.

The session on electrification, given by the PHCC's Chuck White, VP, Regulatory Affairs, and Mark Valentini, Director Legislative Affairs, was well-attended and much remarked upon throughout the show. In it they detailed the PHCC's efforts to push back on natural gas bans, while giving advice on how to cope with and possibly profit from the new regulatory environment.

Several sessions focused on the workforce challenges impacting the p-h-c industry. A Workforce Development Breakfast – *Ideas to Inspire the Next Generation* – sponsored by the PHCC National Auxiliary, PHCC Educational Foundation and Supply-House.com—featured speakers from the latest season of *American Plumber Stories*, a docuseries created by Pfister that profiles working plumbers throughout the country, showing the actual work and rewards involved in a career in the trades.

Larry Jones, President of Universal Plumbing was one of the speakers at the breakfast. "We need to show young people this is what it can be like," Jones said, "this is the life you can earn for yourself. We need to tell young people that it's okay to work with your hands."

Jones said plumbing has allowed him to travel the world, adding that, whenever he gets to a new hotel, the first thing he does is look under the sink.



PHCC—National president Joel Long speaks at the opening breakfast.

power used by heat pumps was generated by plants using fossil fuels, it would never lead to the greenhouse gas reductions that were the main impetus for the legislation in the first place. The renewable or "green" electric capacity was simply not there yet, he said, and most of the raw materials needed for solar electric production were particularly vulnerable to supply chain disruptions.

He did note that the recent Inflation Reduction Act injects a great deal of federal money via rebates into the heat pump market, which would certainly be a silver lining for some contractors.

Keynotes

Two keynotes were delivered during PHCCCONNECT. The first, at the Opening Breakfast, was given by the Our Motorsports team from the NASCAR Xfinity Series (appropriate, given the NASCAR Hall of Fame just down the street from the convention center).

Co-owners Chris Our (a construction company owner) and his daughter Mary, along with General Manager Kevin Cope, shared insider secrets on how trust, dedication, hard work, and doing the right thing lead to winning in both business and racing. Among their tips:

- Diversify your business.
- Build your team.
- Get marketing right.
- Don't grow too fast.



The tradeshow floor offered numerous product demonstrations

During a second keynote presentation held Friday, Oct. 6th, industry leaders shared their knowledge and professional opinions on a variety of topics including supply chain issues, workforce challenges, electrification and decarbonization, government regulations, technology, and the looming possibility of a global recession.

CONTRACTOR's Editor-at-Large John Mesenbrink served as moderator for the event, which was sponsored by Kohler. Elisabeth Sutton, Kohler's director of marketing, professional

channel, Kitchen & Bath Americas, kicked off the session with a tribute to Herb Kohler, founder of Kohler Co. who died in September at the age of 83. Kohler generously pledged one of the first \$1 million corporate donations to launch the PHCC Educational Foundation more than 30 years ago.

Other panelists sharing their knowledge and insider tips were:

- Bruce Carnevale, president and chief executive officer of Bradford White Corporation;
- Randy Roberts, vice president of



Students pursuing careers in the trades, including the Southern School of Energy and Sustainability (a STEM magnet program in Durham, NC serving students in grades 9-12) were invited to the Expo

Awards

The best in the industry were celebrated during the Oct. 7 Awards Luncheon and at other various events during the week. Of particular note, Charles “Chip” Greene of Macon, Georgia, received PHCC’s highest honor, the Col. George D. Scott Award (for more on Chip’s story, and his legacy of leadership and service, see our cover story).

Other awards included:

- 2022 Plumbing Contractor of the Year (sponsored by Delta Faucet Co.): **Ray Toczykowski**, Marines Service Company,

Manassas, Virginia

- 2022 HVAC Contractor of the Year (sponsored by Rheem): **Mike Giordana** and **Butch McGonegal**, United Air Temp, Lorton, Virginia
- Federated Insurance “Safety First! Contractor of the Year”: **Kevin Purnell** and **Mike Levenseller**, Granite Corporation, Oakland, Maine
- 2022 Plumbing Instructor of the Year (sponsored by Milwaukee Tool): **Paul Hallam**, Indianapolis, Indiana

- 2022 Plumbing Apprentice of the Year (sponsored by Delta Faucet Co.): **Nick Santmyer**, Davken Mechanical, Virginia Beach, Virginia
 - 2022 HVAC Instructor of the Year (sponsored by Milwaukee Tool): **John McCuen, Jr.**, PHCC of Pennsylvania, Philadelphia Chapter
 - HVAC Apprentice of the Year (sponsored by Rheem): **Troy Bryant**, Pioneer Heating & AC, Knoxville, Tennessee
- Naturally, awards were also presented

to the winners of the 2022 National Apprenticeship Contest. The contest was held on the tradeshow floor Oct. 5th and 6th. A total of eighteen plumbing and ten HVAC apprentices from across the nation took part. (Turn to pg. 26 for the winners of the apprenticeship contests.)

For the full awards list—including awards for advocacy, the PHCC Auxiliary, and scholarship awards of more than \$186,000—visit www.phccweb.org/news/celebrating-the-very-best-of-2022/.

Leadership

In his speech at the closing event, 2022-2023 PHCC—National President Dave Frame (CEO of Bob Frame Plumbing in South Bend, Indiana) pledged to stay the course on the PHCC strategic plan. Frame encouraged clear communication among all PHCC staff, members, and partners; “this will truly be our strong foundation for constructive collaboration,” he said.

Frame also credited outgoing PHCC—National president Joel Long with being a “perfect example of positive leadership.” It was announced that Long’s PHCC Rocks podcast this past year (23 episodes featuring 49 guests) has reached nearly 5,000 people so far.

During the Oct. 7 PHCC Annual Business Meeting, PHCC members elected Rick Whitaker, owner of Brown Brothers Plumbing and Heating Co. Inc., in Durham, North Carolina, as PHCC—National Association Vice President. The members also approved Laura Ciriello-Benedict as the Association’s Secretary.

Networking

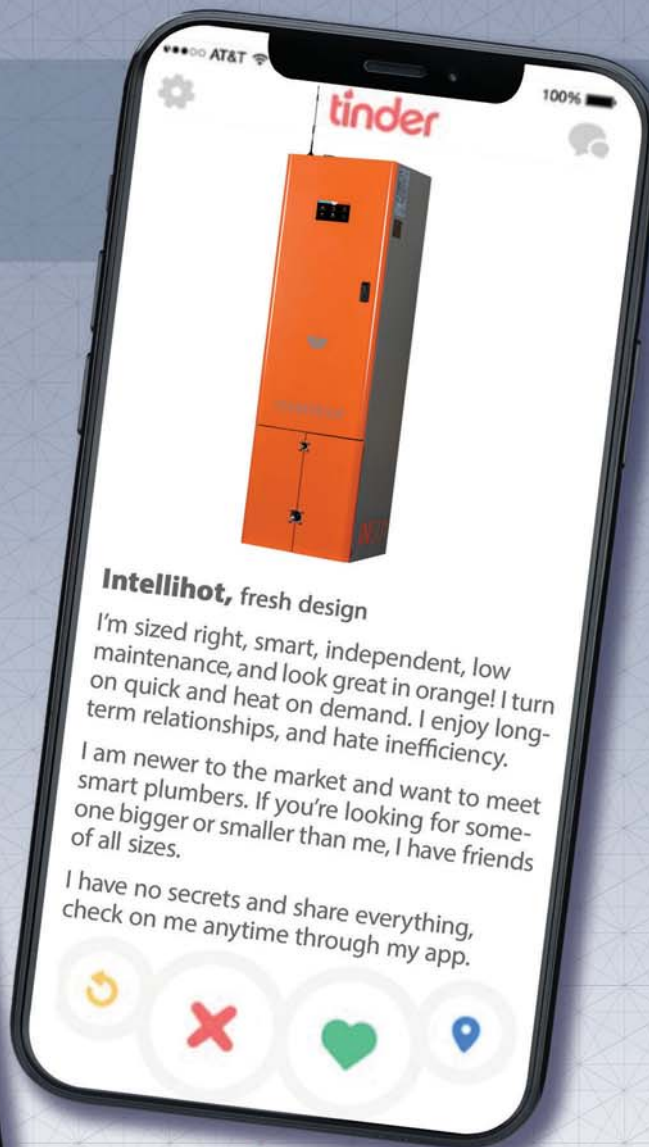
Several networking events took place during the conference, including breakfasts, dinners and coffee breaks. This year’s First Timers Get-Together (sponsored by Air & Water Solutions) was well-attended. A Charlotte bus tour provided an opportunity to get familiar with the host city. The National Auxiliary hosted a bingo game, as well as a “morning energizer” line dancing session.

Looking Ahead

PHCCCONNECT2023 is already scheduled for **Oct. 25-27, 2023**, in Cleveland, Ohio. The **Call for Presentations** is now live through April 7, 2023. For information about exhibiting or sponsorships, contact VP of Business Development Elicia Magruder at magruder@naphcc.org.

➤ Turn to PHCCCONNECT, page 26

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2022 National Apprenticeship Contest Winners

The Plumbing-Heating-Cooling Contractors — National Association’s (PHCC) Educational Foundation is proud to announce the winners of the national plumbing and HVAC apprentice contests. The contests were held October 5th & 6th in Charlotte, North Carolina on the tradeshow floor during the PHCC—National Association’s CONNECT 2022 event. A total of eighteen plumbing and ten HVAC apprentices from across the nation took part in the contests.

Plumbing Apprentice Contest Winners

- First place: Jake Elsbecker, from Midwestern Mechanical in Spencer, Iowa. He was sponsored by Zoeller.
- Second place: Scott Hicks, Jr. from TD Industries in Houston, Texas. He was sponsored by the International Code Council.
- Third place: Alex Estevez from

B Wagner Contracting in Allentown, New Jersey. He was sponsored by the Copper Development Association.

HVAC Apprentice Contest Winners

- First Place: Sebastian Uhde, from Magnolia Plumbing, Heating and Cooling in Washington D.C. He was sponsored by the PHCC National Auxiliary.
- Second place: Harrison Bosler, from Howe Inc. in Sioux Falls, South Dakota. He was sponsored by NIBCO, INC.
- Third Place: Sean Reed, from Reddick and Sons in Manassas, Virginia. He was sponsored by RIDGID.

The plumbing apprentices were required rough-in a bathroom system. The set-up includes a toilet, sink and shower, complete with supply, waste and vent lines, plus cleanouts and extra features designed to test the contestants’ knowledge and skills. The test set-up includes a variety of pipe materials – cast



The plumbing contestants.



The HVAC contestants.

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iron, copper, and PVC and corresponding joining methods.

The HVAC competitors were required to complete a written test, demonstrate proper brazing techniques and perform a hands-on diagnostic on an HVAC package unit, with system errors created by the Foundation’s contractor volunteers for the competition. The competitors also had to perform a pressure and leak test, demonstrate proper refrigerant recovery procedures and the ability to accurately take a variety of instrument readings.

A dedicated team of contractor volunteers arrived two days before the competitions to assemble the competitor test benches, distribute the materials and supplies and setup the testing areas. They monitor the competitions, evaluate the apprentices’ work and provide constructive feedback on each competitor’s performance following the event.

Industry Sponsorship

The contests are made possible by the generous support of several industry sponsors who provide monetary support and in-kind material and tool donations. There were over fifty sponsors for the 2022 competitions, including (with headline sponsors appearing in bold): **A. O. Smith; AB&I Foundry; Bradford White;** Cast Iron Soil Pipe Institute;

CONTRACTOR Magazine; Copper Development Association; Delta Faucet Co.; Emerson Copeland; Ferguson; International Code Council; Kohler Company; Legend Valve; Milwaukee Tool; Moen; NIBCO INC.; North American Technician Excellence (NATE); Oatey; PHCC Academy; PHCC-National Auxiliary; Plumbing & Mechanical Magazine; Rheem; RIDGID; Sharkbite; State Water Heaters; Tyler Pipe & Coupling and Zoeller Pump Company.

Milwaukee Tool made a major contribution to the Apprentices Contests again this year by donating most of the tools needed by the contestants for the competition. This gift allowed the competitors to skip the trouble of shipping their own tools and to go home with a new set of tools to power their work long after the competition ends. RIDGID is also providing tools to each of the top placing competitors.

“We have an excellent team of volunteers and sponsors who make sure that everything these apprentices need is onsite and ready to go when it’s time for the competition to begin,” said Foundation Chairman Kevin Tindall. “The apprentices get to have an experience they will remember their entire life and the PHCC CONNECT attendees get to see the skills of the next generation in action.” **C**

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by **Patrick Linhardt**
HYDRONICS MANAGER AT CORKEN STEEL PRODUCTS CO.



One of the Old Ways

Sometimes I arrive at a boiler replacement job site before the scrap is hauled away. I enjoy checking out the old cast iron sections that have been transferring heat for the last 40 years or so. This job was a high efficiency upgrade at an apartment building. I usually show up to go over the piping changes with the installing contractor, and then have lunch.

In the parking lot were both the scrap trailer and the recently delivered new equipment. Twelve or so cast iron sections were laying on the trailer, the remnants of the old boiler. Two fully assembled boilers in boxes were sitting on the ground, the building blocks of future energy savings. The building owner took the option for two boilers instead of one, so there would be redundancy. It's always nice to have back-up.

On the trailer I also noticed a component of the old air control system. I'm on a streak lately with this old school method, seeing this dip tube air separation on plenty of recent jobs. Dip tube air separation was all the rage before air scoops, tangential air separators, or the current method(s) of air elimination. The science of air control has evolved through the years, like a lot of other hydronic components.

Meet the Dip Tube

On the left side of the picture, the red fitting on top of the very large tee is a Bell & Gossett dip tube air separator. The three inch pipe to the left was connected to the single supply outlet from the boiler, so all the water from the boiler would have it pass through it. This style air separator had to be installed in the piping in a specific way. The old installer went a little over the top.

The way the dip tube air separator works requires it to be in a vertical pipe, with a tee below. The branch of the tee connects to the boiler, the dip tube extends down through the tee inside the nipple and cap on the bottom run of the tee. As the water leaves the boiler, it enters the tee, which is a sudden pipe size increase. That slows the velocity of



The red fitting on top of the very large tee is a Bell & Gossett dip tube air separator.

the water down. We still use that part of the science today.

The air in the water then has a chance to separate and float to the top of the tee, around the outside of the dip tube. The air then moves to an old school expansion tank or an automatic air vent. On this job the $\frac{12}{16}$ " line leaving the left side was connected to a standard steel tank in the ceiling of the boiler room.

The system supply water, now free of air, goes down into the nipple and cap, then up through the inside of the dip tube to heat the building. Air is diverted to the outside of the dip tube while the water flows through the inside of the dip tube. Pretty simple

process, but room for interpretation on the install.

Old vs. New

How the old installer went over the top was the pipe sizing—but in a good way. Since he generously oversized that tee, the velocity of the water slows even more for better air separation. I guessing that the expense of that tee alone today would be more than the price of a modern air eliminator (like the one with the green stripe shown in the photo).


The new air eliminators pipe straight in and out, they just have to be in a horizontal pipe, with little restriction on the amount of straight pipe before or after. The cast iron air scoops have to have

a long run of straight pipe on the inlet an outlet to keep the water running smooth, or what we call in the trade laminar. When flowing water inside a pipe comes off an elbow, it is turbulent. Turbulent water does not allow the air to separate effectively. I see a lot of air scoops without the correct amount of straight pipe.

Dip tube air separation was all the rage before air scoops, tangential air separators, or the current method(s) of air elimination.

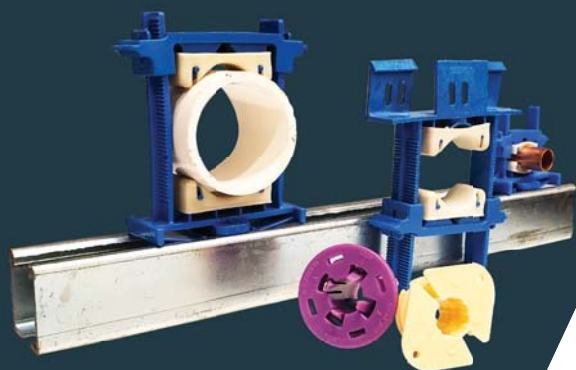
The Same, Only Smaller

Most components of hydronic heating have gotten smaller through the years. The original cast iron radiators went from large columns to thin tubes. Radiators were then replaced with convection style radiation like copper fin baseboard that was smaller. Radiant tubing disappeared into the floor, ceiling or wall to comfortably heat our homes.

The original coal-fired boilers on their large bases with huge flue passages shrunk to atmospheric draft gas-fired boilers which then shrunk to high efficiency sealed combustion boilers that the casual observer will claim "It will never work", but always do. Pipe sizes shrunk as pumps started to do the circulation that gravity once did. Everything's the same, only smaller. 

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

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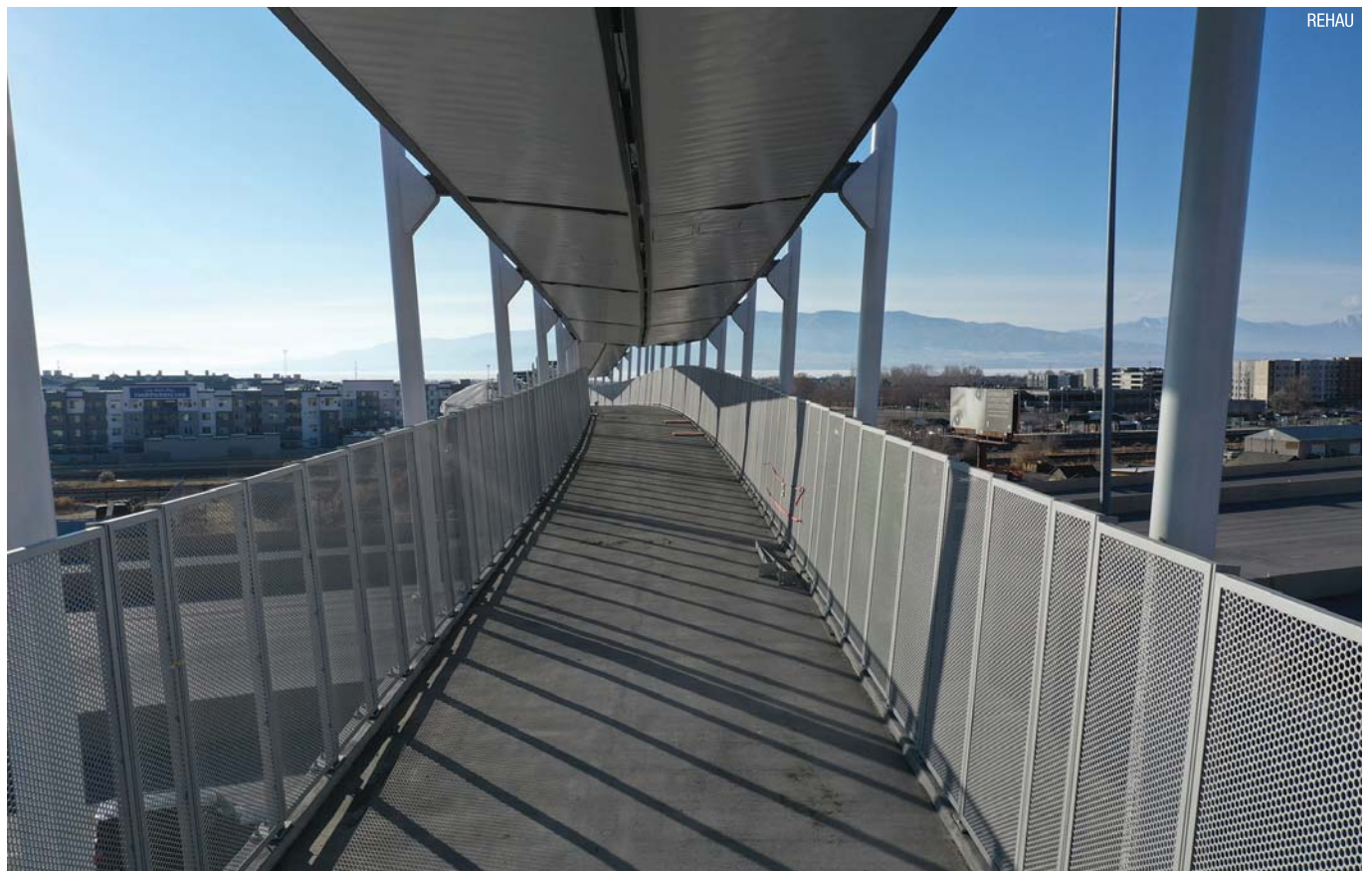
Largest Pedestrian Bridge in Utah Gets Radiant Snowmelt System

■ SPECIAL TO CONTRACTOR

The new 1,000-foot pedestrian bridge connecting students to the Utah Valley University (UVU) campus was in need of a consistent, reliable snow and ice removal solution that did not require salting or sanding surfaces or moving equipment across the structure. Aron Frailey, owner and chief mechanical engineer of Thermal Engineering, LLC, has decades of experience in hydronic radiant snow-melt systems, but he had never designed or installed a system for a 15-foot-wide (4.6-meter-wide) elevated expanse, suspended up to 35 ft. (10.7 m) in the air.

To meet the challenge, Frailey needed piping solutions that would be durable enough for the harsh conditions, but also viable for his construction crew. As a longtime customer, Frailey looked to REHAU for the snow-melt loops of PEX piping embedded in the concrete pathway, selecting RAUPEX® O2 barrier pipe for the job. As the main component in hydronic systems, this PEXa piping provides long-term strength, enhanced temperature capabilities and an extra layer of protection against oxygen permeability with its co-extruded ethylene-vinyl alcohol (EVOH) oxygen diffusion barrier.

“We’ve used REHAU pipe for a long time and never had any issues. It’s like



Having a fully melted walkway across the bridge was a project requirement for UVU and the Utah Department of Transportation.

second nature,” he said. “We know it. We know what to expect from it. We have had so much technical support and experience with REHAU.”

Design Elements

While Frailey has many years of successful projects using PEX for both radiant heating and snow and ice melting (SIM), this was Thermal Engineering’s first major project using polymer piping for distribution piping to the SIM loops, due to its vast benefits compared to working with steel pipe in this elevated application.

He collaborated with REHAU manufacturers’ rep Rocky Mountain Integrated Solutions, Inc. (RMIS) on the project design and material selection. Additionally, engineering consulting company WSP offered design expertise in consultation with the Utah Department of Transportation for the high-efficiency boiler plant and control systems serving the bridge, including NTI Fire Tube Giants (Ft.G) Boilers with a 2.2 million Btu capacity, Grundfos CR pumps and a Tekmar 680 control.

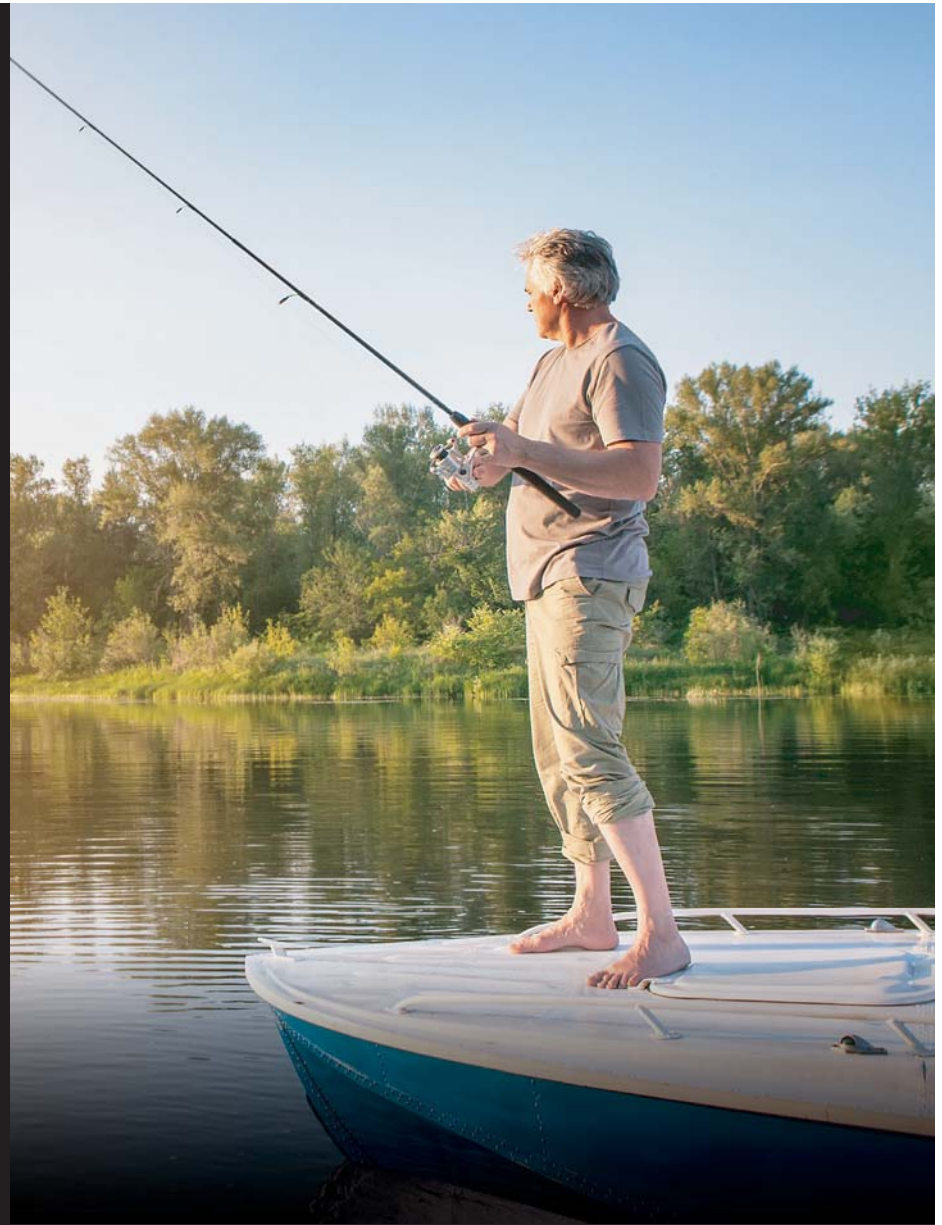
The design used 34,500 ft. (10,516 m) of 5/8 in. REHAU RAUPEX O2 barrier PEX piping for the SIM loops. The PEX piping was fastened directly to the 6 x 6 bridge deck rebar at 6 in. (16 cm) on-center spacing before being encased within concrete. The piping was connected to pre-fabricated manifolds that were installed within the bridge deck and accessible via access panels. The manifolds are supplied with a heated antifreeze solution through 1,900 ft. (579 m) of 2½ to 4 in. (6½ to 11 cm.) supply and return piping.

Frailey helped design the manifolds and oversaw their modification and placement during installation. In total, Frailey fabricated seven 2 in. (6 cm) custom copper manifold vaults to house distribution piping, using F1960 fittings for connections to SIM loops.

➤ **Turn to Bridge, page 32**



The pedestrian walkway under construction.



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► **Continued from page 30**



Due to its heavy weight, steel piping would require numerous installers, heavy lifts and a lot of welding. Frailey was concerned about jobsite safety welding that high off the ground under the bridge deck.

Unique Challenges

Since the bridge has open sides subjected to blowing snow in the winter-time, the owners wanted a heated concrete walkway to increase pedestrian safety. “Having a fully melted walkway across the bridge was a project requirement for UVU and the Utah Department of Transportation,” explained Ben Weerts, PE, representing WSP as the lead mechanical engineer for the project. “It was important to provide the public with safe passage across the multiple lanes of I-15 and railroad tracks throughout the entire year, including the middle of winter.”

The main challenge with the UVU bridge project was the structure’s height, spanning an interstate highway. For hydronic supply and return piping, the original specification called for 4 in. (11 cm) steel pipe. Due to its heavy weight, steel piping would require numerous installers, heavy lifts and a lot of welding. Frailey was concerned about jobsite safety of welding that high off the ground under the bridge deck.

Additionally, Frailey was concerned about the function of steel piping in terms of its inability to withstand bridge movement with temperature changes and ease of corrosion. After investigating piping alternatives, Frailey found that PP-RCT provided benefits where steel piping fell short. PP-RCT



Frailey fabricated seven 2-in. (6 cm) custom copper manifold vaults to house distribution piping, using F1960 fittings for connections to SIM loops.

Thermal Engineering, LLC installs 34,500 ft. of 5/8 in. REHAU RAUPEX O2 barrier PEX piping for the snow and ice melting (SIM) system.

offered an easier installation with its light weight, eliminated open-flame welding, could flex with the bridge’s movement and could withstand the salt and magnesium chloride Utah uses to melt snow and ice on its highways.

The ability of PP-RCT to move in unison with the bridge was one of the biggest selling points for Frailey. According to him, “The structure is intended to move in every direction all the time—left to right, backwards and forwards, up and down,” he said. “I was concerned about the joint integrity of a steel piping system with all that

movement, and I really liked the flexibility of PP-RCT to handle it.”

The radiant loops were also designed with the movement of the bridge in mind. “We designed to match the way they wanted to pour the bridge, so the radiant loops would never cross an expansion joint. Each loop connects to its own custom-built manifold in the slab of that section of the bridge, which then connects to the supply and return piping. REHAU supplied custom 400 ft. (183 m) coil lengths to minimize the number of circuits and optimize the radiant design,” explained Frailey.

Making History

Upon completion, the UVU bridge project became Utah’s largest pedestrian bridge. The 15-foot-wide bridge spans more than 1,000 ft. (more than three football fields) across I-15. Elevators on each side of the bridge accommodate pedestrians, bikes and scooters. It is estimated that 4,000 to 5,000 students will use the pedestrian bridge daily.

A pedestrian bridge has been part of the UVU master plan since 1993 as a way to provide access between the Intermodal Center in Orem and the UVU campus. Funding for the \$30.7 million bridge was approved in 2016 and construction began in 2018. The UVU Bridge officially opened in February 2021.

As the SIM system will operate through its first full winter in the 2021-2022 season, Weerts is confident about its future performance. “In-slab hydronic snow-melt systems are one of the most efficient and effective methods for maintaining snow-free surfaces,” Weerts said.

The SIM system is a testament to the teamwork between Thermal Engineering, WSP and REHAU manufacturers’ rep RMIS. Thanks to their collaboration and commitment to quality, students can cross the bridge safely throughout the year without the need for UVU to arrange snow removal services. Frailey concluded, “This bridge is a very effective application for hydronic SIM. I can’t imagine any other practical way of removing the snow, and it operates very cost effectively as well.”

Project at a Glance

- Project:** Utah Valley University (UVU) Pedestrian Bridge, Orem, UT
- Type of construction:** Infrastructure for educational facility, opened 2021
- Scope of project:** 15,000 sq ft (1,394 sq m) of heated walkways at 15 ft (5 m) wide and nearly 1,000 ft (305 m) long
- General contractor:** Kraemer North America
- Civil and mechanical engineer:** WSP USA Inc.
- Mechanical contractor:** Thermal Engineering, LLC
- Manufacturer’s rep:** Rocky Mountain Integrated Solutions, Inc. (RMIS)
- Distributor:** Mountainland Supply
- REHAU systems used:** Snow and ice melting, RAUPEX® O2 barrier pipe



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Bradford White Announces \$30,000 Grant

AMBLER, PA — Bradford White Corporation announced today a \$30,000 grant and the donation of 10 65-gallon AeroTherm® heat pump water heaters to Pennsylvania's Energy Coordinating Agency (ECA).

The grant, part of Bradford White's Industry Forward™ initiative supporting workforce development and public awareness of plumbing and HVAC industry careers, will directly benefit ECA's Philadelphia Youth Pathways to Clean Energy Careers program, which introduces low-income minority students to clean energy career paths.

The program offers 100 hours of classroom and hands-on experience for students in five possible career tracks, including commercial HVAC installation,



HVAC maintenance and repair, and heat pump water heater installation and maintenance. The program will sharpen their technical skills, help them acquire needed credentials and advance them toward job placement.

As part of this workforce education grant, Bradford White training experts will lend their expertise throughout the year to ECA staff and students by

providing in-person and online training to further advance their knowledge and complement the education offered by ECA.


"The skilled trades offer a variety of rewarding career opportunities that many rising jobseekers aren't aware of," said Rebecca Owens, senior manager of communications for Bradford White. "These jobs offer competitive salaries

and benefits, career advancement, job security and satisfaction. We're proud to partner with ECA and advance their work to ensure that students from all backgrounds have full access to these potentially life-changing opportunities."

The grant as well as the donation of 10 65-gallon AeroTherm® heat pump water heaters is part of the company's Industry Forward initiative.

ECA also received 10 Bradford White AeroTherm® heat pump water heaters, which were delivered by Rich-Tomkins, a manufacturer's representative for the company. Two units will be used in ECA's heat pump training lab and eight will be donated to qualifying families through the Philadelphia Water Heater Emergency Fund. The heat pump lab will further expand their efforts to train local residents on this product, allowing them to be prepared for future conversions to this energy-efficient technology in Philadelphia.

"It's a privilege to partner with Bradford White, the industry leader on this technology, and to receive this generous support from their Industry Forward program," said Steve Luxton, chief executive officer, ECA. These funds will give underserved Philadelphians the skills they need to install the AeroTherms and open doors to good-paying plumbing and HVAC jobs. Every week we receive calls from low-income seniors and families living without hot water. This support will help meet that need, and at the same time, help the city meet its goals for electrification."

For more information about Bradford White Corporation's Industry Forward™ initiative, visit <https://www.bradfordwhitecorporation.com/giving/>. 

SunTouch Introduces Certified Installer Program

SunTouch®, a Watts brand, has announced the introduction of its new Certified SunTouch® Installer Program. Contractors can now become certified experts on a system trusted by a million plus homeowners.

Contractors can now become certified experts on a system trusted by a million-plus homeowners.

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The certification program will provide



An installer laying out SunTouch radiant mats.

extra benefits to contractors interested in expanding their skills with SunTouch® Floor Warming and growing their business. As a Certified SunTouch® Installer in the SunTouch network, a contractor will:

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by Patti Feldman
COMPUTER AUTHORITY



Business Operations in the Office or on the Go

Here are four software solutions that help enhance efficiency, productivity, and/or accountability of field service-based business operations in the office and in the field.

ServiceSight

ServiceSight (suitable for small businesses) and ServiceSight Pro (www.proteansoftware.com) are cloud-based field service software management solutions that offer a range of capabilities to run a service-based company. These include a customer database; estimating and quoting; scheduling and dispatch, reporting dashboard; drag-and-drop scheduling using Google Maps and GPS navigation to locate customers and technicians; and invoicing. The Pro Edition introduces Inventory, Ordering, Contracts, Asset Registers, and other capabilities. Both solutions include mobile apps for use by technicians in the field.

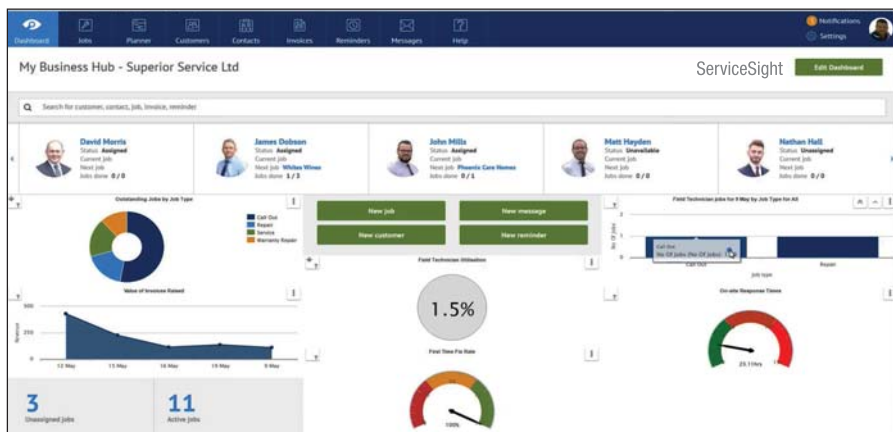
Users can prioritize jobs and dispatch them in a map view, with customer history sent to technicians' mobile devices. All editions support scheduling of multiple technicians to the same job.

Quotes can be emailed to customers or viewed and accepted by them via the web portal. Upon acceptance, a quote can be turned into a job ready for scheduling. A company can choose from over thirty built-in charts including technician productivity, first-time fix rates, response times, and job profitability. Plus, a company can create its own checklists and inspections.

A customer portal available in ServiceSight Pro allows customers to access information on quotes, work orders, service history, and inspections and certificates, as well as view and pay invoices, request call backs, and ask for quotes for new work.

Field personnel can invoice directly from a mobile device on the spot in partnership with Square or via an invoice emailed to the customer, with sales tax automatically calculated at the point of invoicing. Users can select the level of detail for each job or type of job.

ServiceSight Pro includes the option to add modules that address lead and



The ServiceSight dashboard.

Reviews of the ServiceSight management solution, the TeamWherx field and office app, and the SP-Connect sales and operation platform.

data tracking, equipment inventory tracking, and automatic follow-up of quotes, and gives the ability to automatically create recurring jobs, set task and deadline reminders, and create and view a variety of charts and reports on business intelligence.

Both versions integrate with QuickBooks, Sage and Xero accounting systems.

Pricing: ServiceSight free for up to 5 users forever, with a fee per month for each additional user; ServiceSight Pro: fee per user per month.

TeamWherx

TeamWherx (www.actsoft.com, 888/732-6638) is cloud-based software for managing field-based and office-based employees. Designed for field service businesses of any size, the TeamWherx™ app helps companies manage their workforce with one solution by automating manual processes, digitizing workflows, and optimizing communications.

The solution is customizable to match a company's needs and easily scales as a company grows. It includes job dispatching (scheduled and on the fly); mobile time keeping; digital

forms; GPS tracking and geo-fencing of clocked-in team members, vehicles, and assets; and the ability to accept customer payment on a smartphone or tablet using mobile payments via Stripe.

Employees can complete documents from their mobile devices and attach photos, signatures, and other details regarding the job status and completed projects. Employees can also scan bar codes or QR codes using their mobile device cameras to aid in inventory management and protect a company's investment in valuable equipment.

The analytics dashboard shows real-time and ad-hoc reporting on completed work orders, time spent on jobsites, and other defined parameters.

Pricing: based per licensed user. TeamWherx is also offering a free 14-day trial.

SP-Connect

SP-Connect (SP-HVAC.com, 571/585-0004) is a cloud-based industry-specific sales and operation platform for commercial HVAC service contractors. It integrates sales and pricing tools, operations/dispatch, customer and equipment management, a document

generator featuring 25+ editable templates addressing business needs, a mobile field tool, and an interactive client portal.

New users can migrate all existing customers and equipment and the solution integrates seamlessly with QuickBooks desktop and online and, if needed, with other accounting systems.

SP-Connect provides a calculator for inputting costs of projects (line by line, if necessary) and applying appropriate mark-ups based on cost category. The generated proposal will include ROI calculations. Service agreement pricing is driven by equipment type, size, and age, based on SPConnect-hosted industry-driven data tables providing labor and material estimates for every type of equipment, including repair estimates on full-service agreements.

Asset management includes manufacturer details and an automatically assigned expected useful life for equipment lifecycle planning.

The software provides five levels of service agreements, with pricing configurable to your business needs.

Smart dispatching features a dispatch board enabling organizing technicians by skill sets, division, and geography. Operations capabilities include equipment management, contract management, tracking of technician productivity.

A Quick Quote module, usable in the office or in the field, enables building of an on-the-spot quotes for repairs while a sales module tracks every sales opportunity by stage of the sales cycle.

Business intelligence reporting monitors KPIs, technician production and labor utilization, financial metrics, and other insights.

Pricing: one-time configuration fee, estimated based on the needs of the customer (this varies) plus a license-per-user monthly fee which scales based on the number of users. **C**

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

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by Matt Michel
MARKETING AUTHORITY



6 Reasons to Raise Your Prices Now

Hopefully, you may have raised your prices over the past couple of years to keep up with your changing costs. Even so, you probably need to raise them again. And if you haven't raised prices, you definitely need to raise them. Here are six reasons why.

1. Your Costs Have Risen

Duh. Of course, your costs have risen. Everyone is paying more for everything. You are too. Unless you raise your prices to cover the increases you are experiencing, you are subsidizing your customers. Do they need your subsidy?

Moreover, your costs are going to increase more. Once the election has passed, the drawdown of the Strategic Petroleum Reserve will likely halt and gas prices will resume their ascent, leading to increases in the price of everything that uses petroleum or is transported by vehicles powered by gasoline or diesel, which is pretty much everything. More inflation is coming. Price ahead of it, so when it arrives you are not behind the curve playing catch up.

2. You Are Probably Not Charging Enough

Most firms did not charge enough when inflation was less than 2%. Now

that inflation is in the 8% to 9% range (or higher according to the website, ShadowStats.com), undercharging is likely a much more widespread phenomenon. You must bump your prices

customer base and think everyone believes you are expensive. That is your fear speaking, not reality. Raise your prices and the number of complaints will likely stay the same.

If you haven't raised prices, you definitely need to raise them. Here are six reasons why.

at the inflation rate just to stay even. If you consider inflation the way it was measured before 1990, prices need to jump around 17%.

3. The Greatest Price Resistance Lies Between Your Ears

Consumers expect to pay more for everything today. Most have no idea what plumbing work costs to begin with. If they think you are expensive, they will object. If they think you are a bargain, they will keep quiet. Thus, you probably get to hear about it when someone thinks you are charging too much, but never hear about it when you charge too little. The tendency in these circumstances is to extrapolate the complaints across your entire

Do not be afraid of the occasional price complaint. Be afraid of their absence. Unless you are receiving a price complaint or two, you are charging too little.

4. You Add Value

Some customers simply cannot do what you do. You make their homes and businesses more sanitary, more useful, and more livable. This is added value. People will pay for it. If they call you, they expect to pay for it.

Other customers are capable of making basic plumbing repairs, but choose not to, just like some people pay others to mow their lawns. The reasons vary. Some value their time more than they value the money they pay to you. Some dislike the work enough to pay




someone else to do it. Whatever the reason, you are still adding value.

5. Your Team Deserves Higher Pay

Your team does not live in a cocoon. Their expenses are going up and they need boosts in pay to maintain their standards of living. If you don't give it to them, someone else will. To increase their pay without taking the money out of your pocket, you must increase prices.

Frankly, it is a good idea to raise pay and prices in tandem. Help drive the association of higher prices with higher pay for your team. This reduces their reluctance to stand tall when presenting the cost of a repair. It also makes them more willing to offer higher priced options instead of just offering the cheapest solution.

6. You Deserve a Higher Return

Your business is likely your greatest personal asset. You put your capital at risk every day you operate it. This is the difference between a business owner and an employee. You put capital to use and risk its loss. For this, you deserve a solid return on your investment. Unless you earn that return, you cannot reinvest in your business or invest in your employees or the community. 

Are you growing your plumbing business? Are you making the phone ring and the applications sing? If not, you need help. Get it from the Service Roundtable. It's plumbing's largest and most affordable business alliance at just \$50 per month without a long term contract. Learn more at www.serviceroundtable.com.

Skilled Trades Centers

► Continued from page 18

training. It is one of only five such awards given, nationwide, to an individual/high school. William is the geometry and math teacher, with over 40 years of teaching experience at Evergreen, who applied for the grant. It speaks to his commitment and dedication to the trades that Bill endorsed his 50% portion of the grant award to the STC project. That means 100% of the \$100,000 grant going to support the new STC when it opens in 2023.

Douglas recently sent me the following link to a short video regarding apprenticeships:

https://youtube.com/watch?v=gOGo_97KN14&feature=share&utm_


source=EKLEiJECCKjOmKnC5IiRIQ

The first comment, listed below the video, is by an 18-year-old. It is quite telling, and should be viewed by everyone who calls themselves an educator.

So, kudos to Dr. Douglas Greene for all of his efforts on behalf of the skilled trades. Your efforts have quite possibly broken the logjam we have been experiencing between the education establishment and the real word issues the trades face. Good on ya, Douglas!

To get more information regarding the development of Skilled Trades Centers in your area, and involving your local construction industry associations, you can

contact Douglas at:

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WA 98665
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The Brooklyn, N.Y.-born author is a retired third generation master plumber. He founded Sunflower Plumbing & Heating in Shirley, N.Y., in 1975 and A Professional Commercial Plumbing Inc. in Phoenix in 1980. He holds residential, commercial, industrial and solar plumbing licenses and is certified in welding, clean rooms, polypropylene gas fusion and medical gas piping. He can be reached at allen@proquilldriver.com.



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by Greg Wells
PRESIDENT OF MAX SERVICE GROUP



3 Meaningful Benefits to Attract and Retain Talent

Every business operating in any industry can claim that its people make all the difference. But as home service providers, we know that sentiment is undoubtedly true. Our people are the ones going into customers' homes, sharing their deep expertise and representing the company with every conversation and customer experience. Without service technicians—the “boots on the ground”—HVAC, plumbing and other home service businesses simply could not operate. When someone in our industry says that the people are everything, they mean it.

Home service companies must take this deep appreciation for their team and translate it into more than praise (though yes, plenty of praise is good). As we all compete to fill open positions and keep existing team members, benefits play a huge role in winning. These benefits don't just allow businesses to keep hard-working team members or attract top new talent, they allow the company to change the lives of team members for the better, encourage people to not just stop by your business for a few years of their career, but retire with you. And most importantly, it is the right thing to do.

While competitive compensation usually tops the wish list for most people looking for work, there are other important benefits that should be considered. Here, we detail the three most meaningful benefits that will help companies competing for workers during this talent shortage.

Competitive Referral Program

Many people working as contractors in multiple industries have built a network of colleagues with similar skill sets who have become friends. By offering a competitive referral program, a business is able to entice existing team members to reach out to those they know and trust in the industry with a relevant job opening. This benefits both the company and the person making the connection. From the company's standpoint, they now have



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As we all compete to fill open positions and keep existing team members, benefits play a huge role in winning.

an applicant that has been vetted, to some degree, by an existing, trusted team member. They also receive the opportunity to potentially work with someone they know, and a monetary reward sweetens the deal.

Rather than offering a one-time bonus per person referred who goes on to be hired, consider switching to an ongoing model, where whomever refers a new team member is paid a smaller bonus each month of the referred person's employment. This extends the length of the benefit and keeps the referral program top-of-mind month after month.

Better Insurance

Health coverage is a requirement for full time employees, and many companies check that box by providing minimal, or expensive health coverage options. This does a disservice to your team, and the financial drawback is amplified for those who have families insured on the plan, as well.

Invest in better health plans to entice team members to stay with you longer. Renegotiate insurance plan options on

a yearly basis, and try to provide different levels of coverage so there's a fit for anyone's insurance needs. The same can be said for 401K benefits. Consider a 401K match program that will be seen as a difference-maker when someone is considering a job offer. Even a small match is better than none.

Deeper, Simpler Employee Discounts

Too often, service companies are offering employees either discount programs that are complicated with far too many hoops to jump through, or the same discount that customers receive during the best sales and coupon seasons of the year. Your team works so hard for the business, and they simply deserve more than customers are receiving. Creating a program that is too hard to understand or too intensive will only drive your team away from attempting to benefit from it. It needs to be easy to understand and far superior to anything you give your clients. This is just another way a company can go above and beyond to provide its team the best in all areas.

Keeping Pace

One thing to keep in mind about benefits is that they should change over time. Gone are the days of plugging in a compensation system and minimal insurance plan and considering it done. Our team members deserve to know the businesses they work so hard for are in turn working to provide them with the best pay and benefits packages possible. This means benefits will fluctuate over time. For example, a company could respond to the recent rise in gas prices by offering gas gift cards as incentives. Opportunities for gaining more industry knowledge could also be encouraged with the implementation of a few paid days per year for skills training. Paid time off for philanthropic efforts is another idea.

Regardless of the specific benefits offered, make sure employees feel supported each day, and extend that into the hiring process. Be sure each person who applies with the company is receiving quick communication and updates as they go through the hiring process. Extending care toward individuals from the moment they first inquire with a company is a good way to lay the positive groundwork for a meaningful relationship even if someone doesn't end up signing on to work right away.

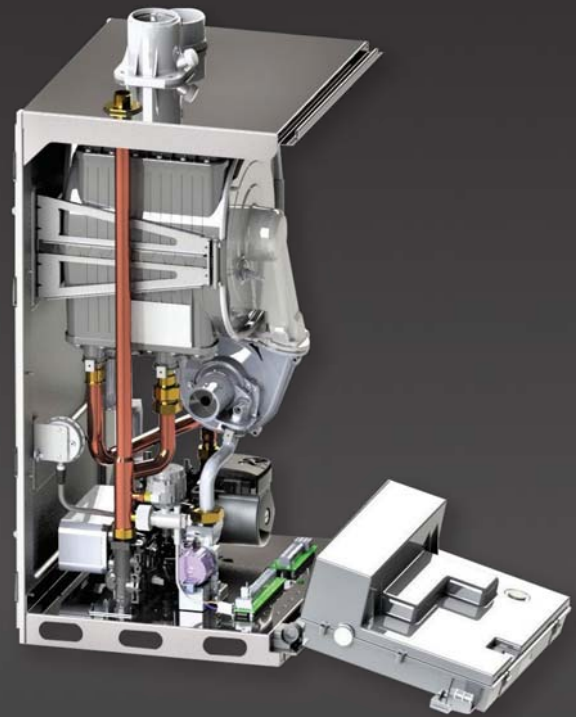
As I have seen first-hand, supporting your business and customers always means supporting your team first and foremost. By keeping compensation and other meaningful benefits top-of-mind year-round, your team will feel better appreciated and supported, customers will receive a better experience and business will thrive. **G**

Greg Wells is the president of MAX Service Group which operates Williams Comfort Air and Mr. Plumber in central Indiana, Thomas & Galbraith Heating, Cooling & Plumbing in southwestern Ohio, Buckeye Heating and Cooling in greater Columbus, Ohio and Jarboe's Heating, Cooling & Plumbing in greater Louisville, Kentucky.

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Boiler Upgrade for Ontario Office Building Delivers Peak Performance

► Continued from page 1

was only running at about 85% efficiency," said Darrel Gillespie, owner and president of Triple Tech Heating, Air Conditioning and Refrigeration, the contracting firm who handled the project.

Triple Tech is a locally owned and operated company headquartered in Midland, Ontario. The company specializes in heating, cooling and refrigeration for its residential, commercial and industrial Customers. They offer after-hours emergency service 365 days a year.

Triple Tech serves the communities in and around Midland and Penetanguishene, Ontario, going as far east as Orillia, west as Wasaga Beach, south as Innisfil, and as far north as Parry Sound. They offer products and service installation and repairs for furnaces, boilers, air conditioners, controls, humidifiers, fireplaces, HRV's, hot water tanks, and geothermal systems.

Laying the Groundwork

Collaborating with Weil-McLain the Triple Tech team installed four floor-mounted Weil-McLain 399MBH Evergreen™ boilers complete with 24V low-water cutoffs (LWCO) and innovative control systems, as well as boiler circulator and system supply and outdoor sensors. Complementing the boiler system was the installation of an 85-gallon Aqua Plus® indirect-fired water heater with a digital thermostat and a temperature/pressure relief valve also from Weil-McLain Canada.

"The previous boiler, at two million BTUs, could only be serviced by a G1 tech, which are not readily available," said Gillespie. "If the boiler went down, the building would be without heat; however, with four boilers that can be serviced by a G2 tech, if one needs to be repaired, three more will still run to ensure redundancy and back-up."

Featuring 96.5% combustion efficiencies, the durable Evergreens are designed with easy-to-setup controls



The old boiler before the upgrade.



The new system offers high-efficiency while delivering improved comfort to building occupants.

Four high-efficiency boilers and one stainless steel indirect-fired water heater from Weil-McLain Canada proves the remedy for deteriorating system.

and flexible functionality for multiple applications to properly match heating loads and contribute to energy savings. Easy to install, use and maintain, they are adaptable for most heating needs, including commercial or large residential applications, and for single or multi-boiler installations.

Additionally, the boilers feature the intuitive and user-friendly Unity™ control system with a built-in lead-lag rotate sequencer that can be used to control various units in a multi-boiler system. The control allows minimum and maximum firing rates to be adjusted for different priorities, which allows contractors to individually customize boilers for each installation. For this installation, the domestic hot water (DHW) maximum firing rate was reduced to match the maximum input of the indirect tank at 190,000 BTUH.

"One of the many features our installers like is that no matter the size of these boilers, they can be floor-

wall-mounted," said Gillespie. "Some boilers in this size-range can only be wall-mounted, which can limit their placement in the room. Being able to install them on the floor helps us save on manpower and labor costs since multiple technicians are not needed to mount them on the wall."

Increasing Efficiency


To better generate DHW and reduce boiler fuel consumption, an 85-gallon Aqua Plus indirect-fired water heater was also installed. Featuring high output stainless steel heat exchangers that deliver superior first hour ratings and recovery, the unit's compact size allows for easy installation in low ceiling basements or storage rooms and comes equipped with pre-installed thermostat connections for quick wiring. The digital thermostat ensures precise accuracy for optimal performance while a temperature/pressure relief valve automatically releases water if

the pressure or temperature in the water tank exceeds safe levels.

"The ability to install smaller, fully modulating condensing boilers and water heaters is key to energy savings and improved comfort level because modulating means less on/off cycling and consistent building temperatures," noted Gillespie. "The boilers and water heater will perform according to the building's heat loss in combination with outdoor temperatures."

High Performance, Unified System

The total system turn-down of 40 to 1 allowed the boilers to better match the heating load of the building while the 96.5% thermal efficiency increased performance up to 20% and eliminated short cycling. Furthermore, using the new Evergreen boilers in conjunction with the Aqua Plus water heater is expected to provide a gas reduction of 25% over the previous direct-fired water heater. To maximize the usability of the space, the new equipment was installed along a perimeter wall instead of in the middle of the room.

"Combining the boilers and tank like we did for this project optimized performance greatly," said Gillespie. "With the boiler and indirect tank, we're getting top efficiency in one package." 

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Greenbuild Announces 2022 Full Keynote Lineup

NEW YORK, NY — The U.S. Green Building Council (USGBC) and Informa Connect, a division of Informa plc, have announced the Greenbuild International Conference + Expo 2022 slate of keynote speakers, ranging from leading officials at the U.S. Environmental Protection Agency and the U.S. Department of Transportation to Jane Fonda and leaders in climate and ESG. This year's conference will take place Nov. 1–3 in San Francisco at the LEED Platinum Moscone Center. Registration is now open for industry professionals and press.

This year, Greenbuild is celebrating its 20th Anniversary as the world's leading sustainable building conference. In



Global leaders in climate, architecture, business & advocacy to take the stage Nov. 1-3 at world's largest convening of green building & sustainability leaders.

celebration of 20 years, Greenbuild is expanding on what it means to build green, with a broader range of programming, experiences and speakers.

In-person keynote speakers include:


- Two-time academy award-winning actor and life-long sustainability advocate, **Jane Fonda**, on Wednesday, Nov. 2.
- **Dr. Jean Rogers**, Senior Managing Director and Global Head of ESG at Blackstone with opening remarks from USGBC's President & CEO, Peter Templeton, on Tuesday, Nov. 1.
- An exclusive Federal Agency Dialogue featuring the U.S. Environmental Protection Agency and the U.S. Department of Transportation on Thursday, Nov. 3.
- **Deanna Van Buren**, Co-Founder and Executive Director at Designing Justice + Designing Spaces, on Thursday, Nov. 3.

"We are so excited to be gathering back in person in San Francisco this year," said Sherida Sessa, Greenbuild Brand Director. "These keynote speakers are covering everything from advocacy and climate to ESG and sustainable business, allowing Greenbuild attendees to maximize their time at the event with actionable, timely discussions that they can bring back to their work and personal lives."

Supporting the Greenbuild keynote program is a host of curated networking opportunities and special events, over 200 exhibitors and brands on the Expo Floor, which for the first time ever is collocated with the Industrialized Wood Based Construction Conference (IWBC), over 150 education sessions offering AIA and GBCI credits, and countless immersive learning opportunities like San Francisco experiential tours.

Education session highlights include:

- **Policy: The New Policies and Programs Shaping the Future of Green Buildings | Tuesday, Nov. 1.** The federal government is taking important steps to address the climate crisis, including new investments in green buildings. From the bipartisan infrastructure law and the Inflation Reduction Act to a new White House sustainability order that charts a new course for federal facilities and procurement, Washington is investing in opportunities to build more sustainable and resilient communities. This session will feature expert insight into the state of play in Washington, the opportunities currently available and the ways attendees can help their organizations and communities take advantage.
- **Equity: A Radical Shift Toward Inclusion in the Built Environment | Wednesday, Nov. 2.** Reducing inequities within our built environment is a critical challenge for our industry, but how can we navigate the complex pathways that have been institutionalized over generations? This session will explore the scale and significance of embodied equity in the built environment.
- **ESG: The Great Convergence – Green Building, ESG and Sustainable Finance | Thursday, Nov. 3.** For more than 25 years, green building has provided a framework to define leadership and drive market transformation. The result is thousands of certified green building projects that are more efficient, less polluting and healthier for their occupants. Now, green building is increasingly used in tandem with environmental, social and governance (ESG) reporting. This session will explore how green building and ESG are powering a new generation of market transformation.

For more information or to register for Greenbuild, visit www.greenbuild-expo.com. 

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Hayward, CA, Plans Wastewater Treatment Upgrades



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The Hayward, CA, Water Pollution Control Facility.

HAYWARD, CA — The City of Hayward (City) is making significant improvements at its Water Pollution Control Facility (WPCF) to serve a growing population, rehabilitate aging infrastructure, and improve the quality of purified water released to the San Francisco Bay.

Known as the “Heart of the Bay,” Hayward is the sixth-largest city in the Bay Area with over 163,000 residents. The WPCF, originally constructed in 1952, treats an average of 11.3 million gallons per day (MGD) of wastewater before it is pumped to a facility operated by the East Bay Dischargers Authority where it is dechlorinated and discharged into the bay via a deep-water outfall.

Modifications are planned at the WPCF to meet anticipated nutrient discharge regulations and accommodate increased wastewater flows and loads as Hayward’s population is forecasted to grow by approximately 33 percent from 2015 to 2050, according to the Association of Bay Area Governments. Ultimately, the upgrades will position the City as an early adopter of nutrient reduction solutions that will protect vital ecosystems in the bay.

Planning for the Future

The project is a key part of the City’s plan to improve its aging infrastructure as described by Director of Public Works and Utilities Alex Ameri:

“As the center of the dynamic Bay Area, Hayward continues to plan for the future, working hard to balance the needs of our growing population with the preservation of open space and an aggressive


economic development strategy.”

The City has enlisted Brown and Caldwell for preliminary and final design services for the improvements. As prime consultant, the firm will develop solutions to incorporate biological nutrient removal, primarily nitrogen, in the facility’s treatment process to meet nutrient limits for treated effluent discharges to the bay as regulated by the San Francisco Bay Regional Water Quality Control Board. Such solutions will provide flexibility to accommodate expansion using conventional treatment methods or process intensification using new technologies to avoid building new treatment tanks, depending on future needs and evolving regulations.

Efficiency & Resilience

With an eye on climate change impacts, including potential flooding and rising groundwater resulting from sea level rise, the upgraded facilities will be designed to improve resiliency.

The sequencing of construction activities to minimize operational disruptions during construction of the improvements is crucial to the project’s success. Brown and Caldwell will work closely with WPCF staff to develop a robust construction sequencing plan to minimize disruptions to plant operations while at the same time maintaining the quality of effluent discharged to the bay.

Final design of the improvements is scheduled for summer 2024 with construction anticipated for completion by spring 2028. 

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Chip Greene Receives PHCC's George D. Scott Award

► **Continued from page 1**

As a third-generation plumbing contractor and second-generation business owner, Greene learned from his father best business practices and the importance of being involved in the industry that provides your livelihood. For 30 years, Greene has continued his father's legacy, faithfully devoted to his family, his employees, his community, PHCC—National and the PHCC of Georgia chapter.

"Chip Greene has an extensive list of accomplishments, which personify the very qualities that distinguish him among his peers and makes him very deserving of PHCC-National Association's highest honor," said 2021-2022 PHCC—National President Joel Long during the award presentation.

Leadership and Service

Inspired by PHCC's inaugural president, Col. George D. Scott, the award acknowledges a PHCC member who has provided years of service and unselfish devotion to the association and to the industry ... and whose industry efforts have provided many benefits to other p-h-c contractors.

Through the years, Greene built a solid reputation as a positive leader at PHCC—National, serving as national president in 2015-2016 after his role as Zone 2 director from 2012 to 2014. One of his goals as national president was to expand association efforts to support contractors who work in heating and cooling ... an initiative PHCC embraced and continues to build on today. At PHCC—National,

Greene also served on the Government Relations, Finance, Risk Management, Nominating, and Code committees. A strong supporter of the PHCC Educational Foundation, he has volunteered for both its National HVAC Apprentice Contest and its Investment Committee.

Greene joined the PHCC of Georgia Board of Directors in 1999, several years after starting his own contracting business, Greene & Associates, Inc., in Macon, Georgia. Since then, he has held several positions at the state level, including PHCC of Georgia president, director at large, and director, as well as Georgia Academy chairman and president.

PHCC presented its highest honor to Greene during its annual awards ceremony, held Oct. 7 at PHCCCONNECT2022 in Charlotte, North Carolina.

Lytix Introduces Asset Tracking Service

► **Continued from page 6**

streamline their fleet management solutions under one single platform can add Lytx's Asset Tracking Service and Fleet Tracking Service today. For fleet managers who need to regularly access fleet status, manage driver efficiency, and keep their vehicles running in top condition, Lytx Fleet Tracking Service provides a seamless solution.


Enhanced by video, Lytx's GPS fleet tracking software allows companies to easily manage and monitor their vehicles and assets in the field so that they can respond faster, complete more jobs, decrease theft, and improve customer

satisfaction. With an installed GPS-enabled device, fleet managers can gain visibility into arrival, idle, and departure times, leading to faster decision making and reduced fuel costs.

Lytix Fleet Tracking Service can be customized to suit all fleet needs, including setting defined areas called geofences, configuring interactive maps, and analyzing specific trends and performance. Video-enabled devices can enhance asset tracking by providing video evidence to help protect drivers and reduce claims costs in the event of a collision, as well as with supporting investigations of damage incidents or missing equipment.


New maintenance enhancements are currently in development and will be added to Lytx's Fleet Tracking Service later this year. Those new capabilities include:

- DTC (Diagnostic Trouble Code) support for Heavy-Duty Vehicle – With current support for light-duty vehicles and upcoming support for heavy-duty vehicles, Lytx DTC Insights can identify potential vehicle malfunctions and help managers resolve issues before they become more dangerous and costly.
- Preventative Maintenance by Calendar – Fleet managers will be able to proactively configure and schedule vehicle service intervals with due dates set by calendar day. This can help with performing time-based vehicle maintenance, which can result in fewer vehicle failures.
- Preventative Maintenance by Engine Hours – Managers will also be able to track engine hours and have the option to schedule maintenance by engine hours, which can help measure the wear and tear on vehicles.

For more details on Lytx Asset Tracking Service, visit www.lytx.com/en-us/fleet-management/features/asset-tracking. 

Supporting the Next Generation

Chapter leaders agree that Greene's greatest legacy in Georgia is the creation and success of the PHCC of Georgia Academy 501(c)3 and the chapter's first-ever technical training facility, centrally located in Macon. Through Greene's leadership, the Academy's facility was renovated after COVID to accommodate two classrooms, a large hands-on lab space, and a tools warehouse. "Chip's influence as a servant leader in the community supported the donation of classroom chairs and tables from local school districts, facility services from local peers in the construction industry, and generous equipment donations from industry partners who know and have worked with Chip for decades," explain PHCC of Georgia leaders in their nomination of Greene.

In his community, Greene also served as president of the Central Georgia Boy Scouts of America from 2019 to 2021 and continues to be an active leader in the Boy Scouts, recently creating a plan to build out the sewer system for a local Boy Scouts camp. He also serves on the Associated General Contractors of Central Georgia Legislative Council and is an appointee of the Governor of the State to the Conditioned Air License Board. "Chip's stature is a testament to the professionalism of PHCC contractors," chapter leaders share, adding: "There is no doubt that the success of the expansion of the PHCC brand in Central Georgia is proof of the kind of person Chip is—a committed servant leader and a kind, patient, and humble human being." 

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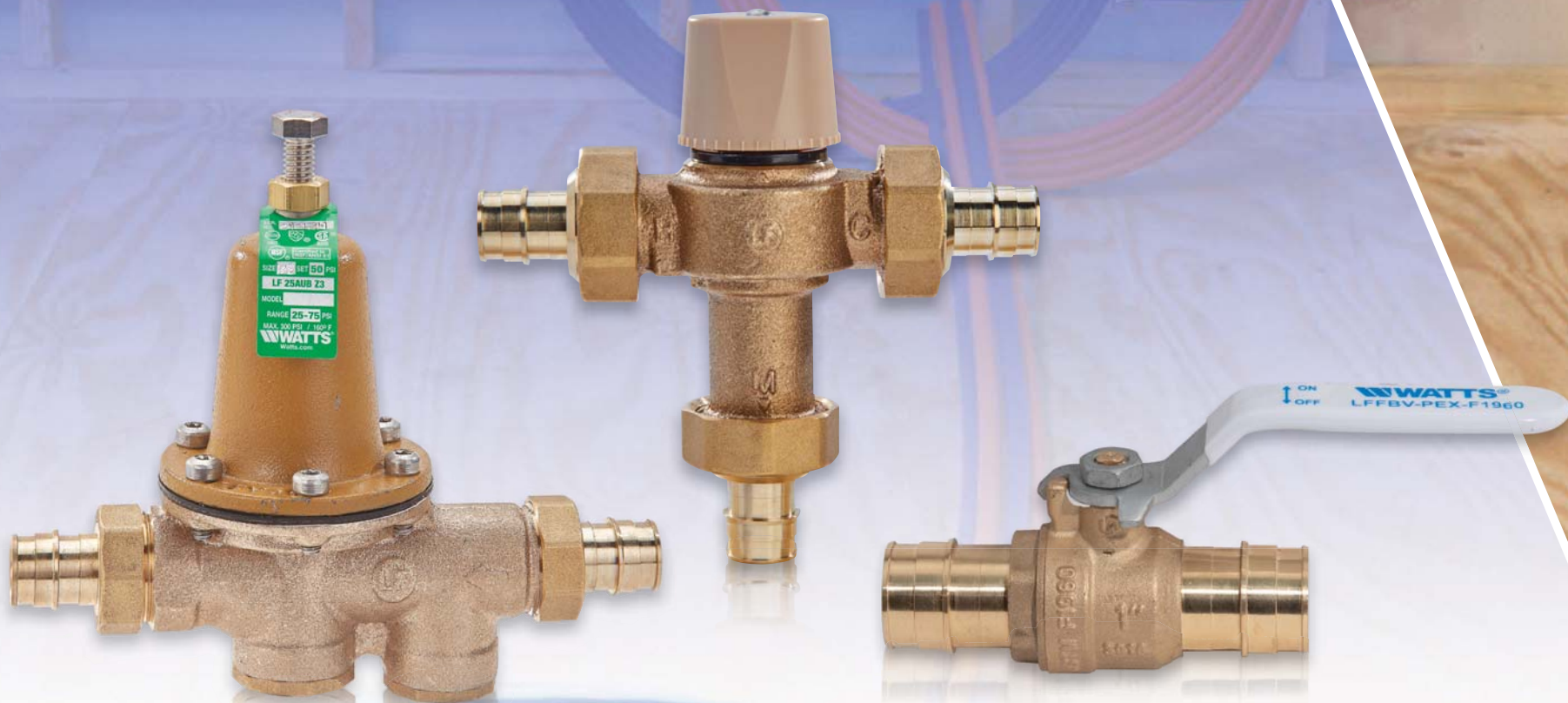
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Michel & Heimer to Exit Service Roundtable Leadership

► **Continued from page 3**

stressing the growth opportunities for residential contractors,” David Heimer said. “Not only were we optimistic, we were right.”

“Now, we have emerged from that dark period and our work is done,” continued Matt Michel. “For those who are worried about the people in charge of Service Nation, don’t worry. The company will be led by Tom Peregrino, a contractor who joined the Service Nation Alliance, became Contractor of the Year, sold his business, joined Service Nation, and built the Alliance Premier program.”

Reflecting on 20 Years

Michel and Heimer founded Service Roundtable in 2002 with just 200 members. Today, it is the nation’s largest private contractor group with more than 5,000 members. Throughout the years it has remained true to its mission statement: to help service contractors improve their business and financial performance, leading to a profitable exit strategy.

In 2008 Service Roundtable launched the Retail Contractor Coalition, a branding program that has introduced hundreds of local, private labeled



equipment brands in the industry. Also in 2008 the group launched Roundtable Rewards, a program that allows members to leverage their collective buying power to receive rebates and discounts from more than 130 participating vendors.

In 2009 the group launched the Service Nation Alliance, a contractor best practices program. Approximately ten percent of Service Roundtable members have upgraded to the Alliance.

In 2016 Service Roundtable launched its signature event, Service World Expo, with industry educators, networking events and more to help residential contractors take their businesses to the next level of success. This year’s Expo included keynote speakers Tim Tebow (two-time national champion, first-round NFL draft pick and Heisman Trophy winner), Scott Mann (Lieutenant Colonel (Retired), and former U.S. Army Green Beret), and Chris McChesney, (bestselling author of The 4 Disciplines of Execution).

“Our founders and investors were the usual three Fs: family, friends, and fools,” said David Heimer, “but they were also California angel investors. Primarily our investors were ‘smart money.’ They are stalwarts of the industry, who saw Service Nation as an opportunity to give back. They were patient, but after 15 years, they were looking for a return, so we began the process of looking for a buyer.”

“With a compound annual growth rate of 39.5% over 15 years, the company was attractive,” said Michel. “More than 60 companies expressed interest in us. With our investment bank, we narrowed it to four finalists and chose PaySimple, which became EverCommerce because of the fit, culture, and financial strength.” The sale was completed in 2017.

Not resting on their laurels, Service Roundtable has continued to innovate. In 2022 the group launched Alliance Premier, a training, coaching, and mentoring program with coaches coming primarily from the ranks of contractors who have built and sold their companies.

Deep Gratitude

In their remarks Michel and Heimer expressed their gratitude to two retired members of group, Janet Thomasson who served as Chief of Staff, and Liz Patrick, who started our as a telephone sales rep and retired this year as Vice President of Strategic Alliances.

They also thanked those who would be continuing on the groups’ work in their absence. In addition to Tom Peregrino, they acknowledged Jim Hinshaw who will head up vertical markets and oversee Alliance Premier; Pete Danielson, head of marketing; Bob Vierung, head of Alliance Programs; Andrew Kissel, head of IT; Peter Galanek, who inherits Liz Patrick’s role as head of the Roundtable Rewards program; Stephanie Fritz, head of sales; Sarah Blackhall, chief graphic designer and events coordinator; and Carol Longacre who works as state- and local-associations liaison.

“It is because of this team that Service Nation has been recognized by the Dallas 100, Fort Worth’s 50 Fastest Growing Companies, Aggie 100, and Inc 5000, including multiple times as one of the top 75 business service companies in the nation,” Matt Michel said.

What the Future Holds

Both men are looking forward to a less stressful life, but neither one is exiting the industry altogether. “I will be launching a new podcast, app, and building a small company around those,” Heimer said.

“I will continue to write for the trade press and speak from time to time,” Michel said. “Plus, I have a couple of books I want to write.”

Both expressed great pride in the value they had delivered to Service Roundtable members—with most consistently outpacing the industry growth rate—and the return they had delivered for their investors. ◻

User Friendly Home Services Announces Acquisitions

THE WOODLANDS, TX — (GLOBE NEWSWIRE) — User Friendly Home Services has announced the acquisitions of AccuTemp Heating & Air Conditioning in Louisville, KY, and Efficient Air Heating and Cooling in Owensboro, KY.

“With today’s acquisitions of AccuTemp Heating &



Air Conditioning and Efficient Air Heating and Cooling, we are excited to join with these great companies and expand upon what is already a great situation in the Louisville and Owensboro areas,” said Bruce Howard, CEO of User Friendly Home Services.

Efficient Air Heating and Cooling

Efficient Air Heating and Cooling was founded by Billy Emberton in Owensboro, KY. Emberton is a licensed master technician, with nearly 30 years of experience.

AccuTemp Heating & Air Conditioning

AccuTemp Heating & Air Conditioning is a family-owned business, serving the Louisville and Southern Indiana areas for over 30 years. Their services include AC, heating, IAQ, geo and ductwork system solutions.

An Expanding Network

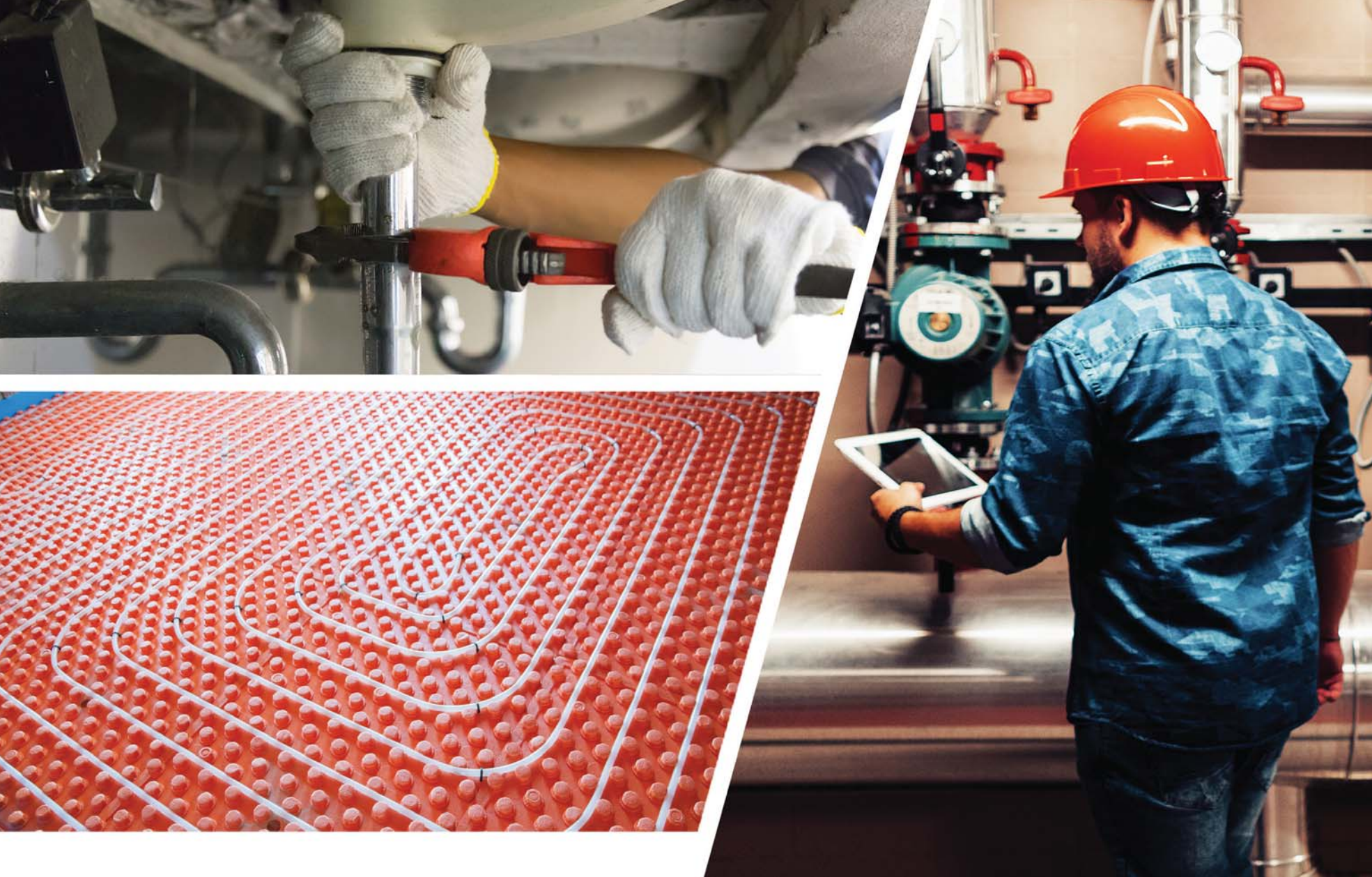
With today’s acquisitions, the User Friendly Home Services national network of HVAC and home service companies grows to nine companies under the User Friendly Home Services umbrella. ◻



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Heat Pump Water Heater Market to Double by 2032

► **Continued from page 3**

3.08 Billion. The utilization of air, water, or geothermal power to generate hot water is one of the prominent features offered by heat pump water heaters, the adoption of which is expected to increase in the coming years.

Demand for heat pump water heaters has increased, registering a historical CAGR of 2.0% from 2017 to 2021. Strict governmental regulations and policies to curb emissions from HVAC equipment across the residential and commercial sectors will augment product penetration. Governments across major regions **including North America and Asia Pacific** are retrofitting heating & cooling equipment across buildings to meet their emission targets, will further boost the technology advancements.

Rising need for sustainable technologies from the residential sector will bolster the product requirement. The majority of governments around the globe are implementing various policies and schemes to promote the distribution of clean technologies in the residential

and commercial sectors, improving the technology perception. Additionally, stringent emission norms and regulations will compel constructors to install energy-efficient and renewable technologies, will stimulate the heat pump water heater market demand.

- India to be one of the most opportunistic markets across the Asia-Pacific, accumulating 17.8% revenue in 2022

“The integration of heat pump water heater with IoT helps in tracking the abnormalities in heat pump water

initiatives comprise some major strategies adopted by prominent Heat Pump Water Heater Service providers. Some prominent market developments are as follows:

- In August 2020, Panasonic Corporation partnered with Systemair on technology to launch heating and cooling products for offering its customers with more options related to HVAC products, including heat pumps. Both companies will have their separate sales channels and branding for these products.
- In August 2020, Bosch Thermo-technology launched the Bosch Tronic 3000, a line of electric instantaneous water heaters that significantly reduce hot water wait times in light commercial applications. The new series, which includes four new types, is the first stage in Bosch’s intended cutting-edge, new dynamic electric instantaneous water heater portfolio.
- In July 2020, Daikin launched Daikin SmartSource, a dedicated outdoor air system (DOAS) for heat pumps that enables efficient and cost-effective cooling and heating in all conditions using 100% fresh outside air. It also taps a water source heat pump’s hot gas reheat coil in addition to the unit’s primary DX coil; to enhance the efficiency of the heat pump.

Regulation, IoT integration only two factors that will help spur adoption of the technology, according to Fact.MR study.

Key Takeaways from the Market Study

- Global **heat pump water heater market** growth to double until 2032
- By application, residential applications to experience maximum growth, at a **CAGR of 4.8% until 2032**
- U.S to be an opportunistic heat pump water heater market, accruing 30.5% revenue in 2022

heaters, subsequently reducing system failure. Thus, the integration is expected to provide lucrative opportunities for the growth of the Heat Pump Water Heater market during the forecast period,” says an analyst at Fact.MR

Market Competition

Penetrating new geographies, collaborating with government agencies or service providers and rebranding

Emerson Announces Partnership with NC3

SIDNEY, OH – In an effort to continue to support the training and development of the next generation of skilled tradespeople, Emerson (NYSE: EMR) announced that its Copeland and RIDGID brands are partnering with the National Coalition of Certification Centers (NC3).

NC3 is a career and technical training organization that supports skilled trades advancement, including the HVACR industry. Emerson’s Greenlee® brand has been a partner with NC3 since 2016. Now, with the additional support of the Copeland and RIDGID brands, Emerson hopes to strengthen its partnership with NC3.

“For years, we’ve been committed to supporting industries in overcoming the skilled trades gap. Our ongoing efforts are designed to put more training into the hands of new technicians and partner with trade schools to advance curriculum whenever we can. NC3 helps us advance these goals,” said Tim



L to R: Tim Ferry, Becky Hoelscher and Denis Hanna of Emerson

Ferry, group president, Tools & Home Products for Emerson.

NC3 was established to help build a workforce prepared to meet the needs of industries by connecting employers and educational institutions. These synergistic partnerships foster effective training, elevation of skilled careers and employment opportunities.

“As we continue to explore ways to increase education of Copeland products for new technicians, this is an important initiative for Emerson, and we are looking forward to extending this

to other Emerson brands as this partnership grows,” said Brent Schroeder, group president, HVACR Technologies for Emerson.

As part of the NC3 partnership, Emerson’s Copeland, RIDGID and Greenlee brands recently participated in NC3’s Train-the-Trainer summit, held at Gateway Technical College. Train-the-Trainer events are opportunities for industry technical experts to provide hands-on training to community, technical college and high school instructors.

Emerson provides additional training support through its Educational Services team, with options such as virtual classrooms, onsite training, eCourses and a training center. Emerson also recently launched its HVACR Educator Resource platform designed to provide industry educators with access to tools, training and educational materials.

For more visit the NC3 website. [G](#)

More Insights Available

Fact.MR, in its new offering, presents an unbiased analysis of the global heat pump water heater market, presenting historical analysis from 2017 to 2021 and forecast statistics for the period of 2022-2032.

The study reveals essential insights on the basis of application (residential and commercial), and capacity (less than 50 gallons, 50-100 gallons, 100-200 gallons, and above 200 gallons) across five major regions (North America, Latin America, Europe, Asia Pacific and Middle East & Africa).

These insights are based on a report on Heat Pump Water Heater Market by Fact.MR. [G](#)

NEW EBOOK FROM CONTRACTOR

WORKFORCE DEVELOPMENT

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

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

CONTRACTOR
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WORKFORCE DEVELOPMENT



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Leonard Valve

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► **536 SERIES PRESCAL HPR** is a direct-acting, pressure-regulating valve with a piston as the primary control mechanism, instead of a diaphragm. The valve ensures stable, high-precision pressure control while withstanding severe inlet pressure or downstream water hammer. Two models within the 536 Series HP family are offered.

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Watts

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▲ **AQUAPORT SYSTEM** converts a building's hydronic heating supply to on-demand domestic hot water. It eliminates centralized domestic hot water and recirculation piping, and can reduce hot-water energy use by up to 35%, eliminate up to 40% of unnecessary piping, and remove more than 50% of the total DHW volume in a building. The in-wall design is 25.6"-tall by 14.5"-wide and 5.4" deep to maximize square footage. It weighs 47 lb. for the 100,000 Btu/hr. version and 57 lb. for the 180,000 Btu/hr. version.

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Rheem Mfg. Co.

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► **VOLTEX AL HEAT PUMP WATER HEATER**

is a residential unit with smart connectivity and updated water connections. Energy Star-certified, the hybrid electric unit features a Uniform Energy Factor of 4.02 with the 66-gal. unit and a UEF of 3.8 for the 50-gal. unit. It is also available in an 80-gal. model. The integrated iCOMM connectivity platform supports the new anti-leak technology through the use of integrated leak detection and a smart anode.

A. O. Smith

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► **UPSE 15-58 RESIDENTIAL CIRCULATOR**

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► **THE EXR ON-DEMAND TANK WATER HEATER**

has an 80-gal. FHR in a 55-gal. footprint. This "static water" acts as heat storage. When you draw hot water, the domestic water is run through the heat exchanger, where the heat from storage tank is instantly transferred to the domestic water, giving the user hot water from the tap. The tank is only filled once—during the unit's initial installation.

Essency

WWW.ESSENCYHOME.COM



editor's choice

READY VAN SL STEEL-ENCLOSED BODY from Reading Truck offers a generous workspace with bright compartment lighting and ample weathertight outside storage.

Made from long-lasting, heavy-duty galvanized steel. All-aluminum ladder provides access to roof-mounted ladder racks. Can be mounted curbside or roadside. Parts are now available to integrate chassis' power locking systems with the Reading Latch-Matic keyless entry system. Two vertical braces inside the shelving area provide additional structural integrity and shelf support (on high-roof 72/75 models).

Reading Truck

WWW.READINGTRUCK.COM



▲ **INTERIOR PIPE AND CONDUIT STORAGE** eliminates wasted space around the wheel well and on top of a cargo van with an 8-in. shelf option to keep loose pipe and fittings from rolling around the van floor. It securely houses conduit under the shelf under the bottom shelves or next to the wheelwell for easy access from the back of the van. The Undershelf Conduit Tray is telescopic and can be adjusted in 1-in. increments to fit in any full-size vehicle.

Adrian Steel

WWW.ADRIANSTEEL.COM



▲ **2023 E-TRANSIT VAN** is a zero tailpipe emissions vehicle featuring 40% fewer scheduled maintenance costs. By placing the battery underneath the body of the vehicle, users get the benefits of an electric powertrain without using up cargo space. Run power tools, jackhammers, circular saws—on the go.

Ford Motor Co.

WWW.FORD.COM

▶ **CX FLUSHOMETERS** rare designed to deliver enhanced sustainability to a wide range of facilities without interrupting design or architecture.

Featuring an integrated control stop and adjustable flush connection with an all-vertical, in-line rough-in, the units streamline the installation process, allowing the installer to easily bring the plumbing to the valve.

Sloan Valve Co.

WWW.SLOAN.COM



▼ **2023 TOYOTA TUNDRA PICKUP** features an electrified i-FORCE MAX powertrain that pairs the Twin-Turbo V6 with an electric motor to generate 437 horsepower with 583 lb.-ft. of torque. The placement of the motor allows for efficient transfer of power.

Toyota

WWW.TOYOTA.COM/TUNDRA



▼ **2023 SAVANA CARGO VAN** is designed with an available sliding passenger-side door to help with loading and unloading. Doors open in a 60/40 split. Covering the entire length of the floor, vinyl floor covering provides traction and convenient cleanup, and six D-ring tie-downs help keep cargo secure.

GMC Commercial

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▶ **E12 V ENGINE STARTER PLUS** features a high-output, sealed 33 Ah AGM that provides 550 cranking amps and includes a convenient replaceable internal battery and a charger. The rotary switch and low voltage/high current parameter allows the unit to connect and start with no sequencing required.

Snap-On Industrial

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▶ **CAF SERIES EXPANSION TANK**

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Taco Comfort Solutions

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▼ **SINGLE-STAGE SERVICE VEHICLE COMPRESSORS** feature four models with 30-gal. air tanks standard—GC11HGA-30T, GC8HGA-30T, K5HGA-30T and J11HGA-30T.

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Jenny Products

WWW.JENNYPRODUCTSINC.COM



▲ **ZENCHA FREESTANDING BATHTUB**

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Duravit North America

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▼ **2023 RAM 1500 PICKUP TRUCK**

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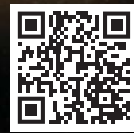
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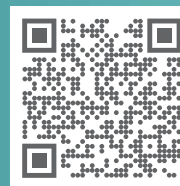
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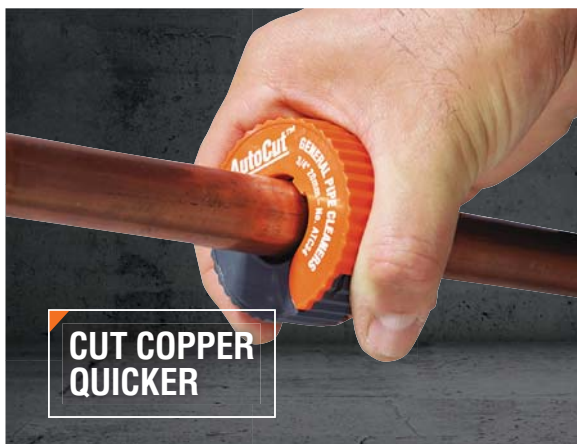


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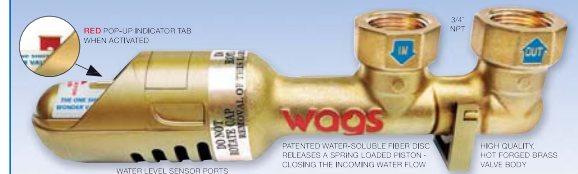
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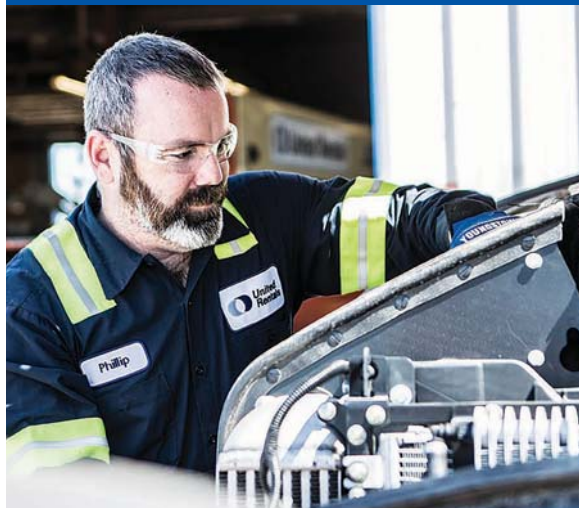
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NEW EBOOK FROM CONTRACTOR

Download the Best of Pat Linhardt

Patrick Linhardt is a thirty-seven-year veteran of the hydronics industry who has been designing and troubleshooting steam and hot water heating systems, pumps and controls on an almost daily basis.

Pat has been a regular monthly columnist for CONTRACTOR Magazine since 2019, where his column has become the cornerstone of our Hydronics & Radiant section. We are proud to publish this selection of his recent work, and hope these columns serve to educate and inspire a new generation in the industry.

<https://www.contractormag.com/learning-resources/whitepapers/whitepaper/21182872/download-best-of-pat-linhardt>



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Best of Pat Linhardt
A collection of articles from CONTRACTOR

Been There - Boilered That

I am honored and humbled to be a national voice for an industry that has been very good for me.
By Patrick Linhardt

Class With the Kid

The System Sizer is a slide rule turned into a circle by an icon of the industry named Gil Corliss
by Patrick Linhardt

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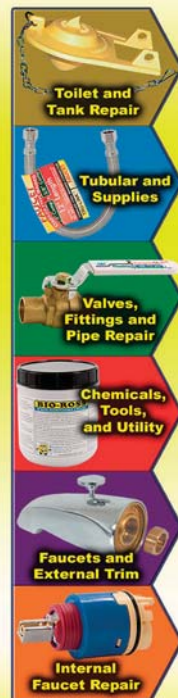
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JANUARY 2023 ISSUE PREVIEW

**SPECIAL
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**AHR EXPO: EDUCATION & NEW
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**FEATURES,
CASE STUDIES,
COMMENTARIES**

CONTRACTOR OF THE YEAR

**2023 MARKET OUTLOOK:
ECONOMIC FORECAST FOR THE
PLUMBING & HEATING INDUSTRY**

**HYDRONICS /
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**MONTHLY COVERAGE THROUGH A
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(IBIS /KBIS) (LAS VEGAS)**

by Steve Spaulding
EDITOR-IN-CHIEF



It's All About Trust

Earlier this month I attended PHCCONNECT2022 in beautiful Charlotte, NC (you can read our full coverage in the feature on pg. 22). I've decided it might be my favorite show of the year. It's not too big (AHR Expo and KBIS are so huge, so busy, that you always come away with regrets, feeling there was a booth you didn't get to visit or a session you were unable to attend). It lasts just a couple of days. And the best part? Everyone you want to see is right there.

Whenever I'm covering an event, I try to find a theme that will tie everything together for me. It helps fix it in my memory (cover the same conference more than a few times and they start to blend together) and it gives me star to steer by when I'm writing things up.

For this year's PHCCONNECT, the theme I came away with was "trust."

The "connect" in PHCCONNECT is about connecting people. Not just networking, but those deep, long-term relationships that are at the heart of any

successful business. And as I heard over and over again, the basis of all strong relationships is trust.

For example, Billy Austin of the Schultz Engineering Group gave a great session contrasting the Design-Bid-Build process with the Design-Build

process. Design-Build can deliver greater efficiencies, greater value to the client, he said, but only if the contractor and the engineer have taken the time to establish trust. Once each knows the other has their back, they can stop working against each other and pull together to solve problems and get the job done.

For this year's PHCCONNECT, the theme I came away with was "trust."

During the Thursday Morning Breakfast keynote speech, former contractor and NASCAR team owner Chris Our pointed out that, for all the glory a driver gets, racing is a team sport. When a crew

gets back from a race the car gets stripped down to the bare bones, with individual crew members spending long hours on tiny details. In any business where small mistakes can lead to big differences in outcomes (which includes contracting), trust is essential.

At an educational session that would become the talk of the show, *Natural Gas Bans: Electrification and How it Will Impact Your Business*, it was plain to see the problems a breakdown in trust can lead to. On the one hand, contractors mistrust the motives of regulators (with one person in the Q&A session seeing bans as an attempt to crush independent energy markets). On the other hand, regulators seem to see the push-back on bans as motivated by greed, not realizing contractors have practical

concerns as well as a sincere desire to deliver value, efficiency and comfort to their customers. (Our Forum on pg. 20 is with one of the session presenters, Chuck White, PHCC's VP, Regulatory Affairs.)

And of course, during my time at the CONTRACTOR booth I had the chance to meet many of our readers. This publication stays in business because the advertisers advertise, and they only do that because the readers keep reading, and they only do THAT because they trust what we have to say. As soon as we in the trade press break that trust—fail in our accuracy, fairness, usefulness—it's game over.

Trust can be difficult. We live in cynical times where someone telling you what you want to hear is as suspicious as someone telling you what you don't; where it seems like everyone is trying to "sell" you on something. But I've found trusting people, having faith in people, usually pays off.

Still, make sure you get that contract signed! **C**

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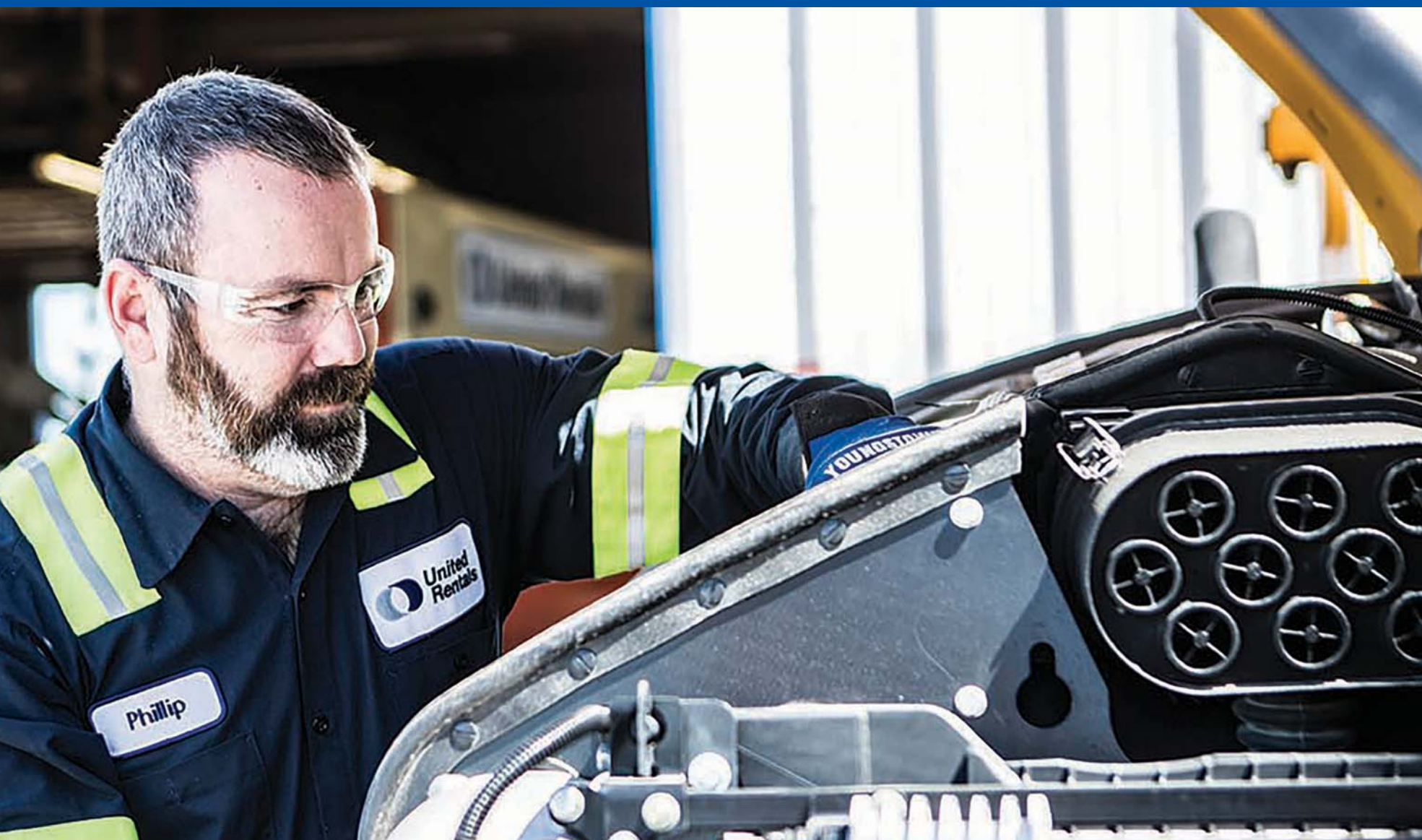
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