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PLUMBING | PIPING | HYDRONICS

2023 Book of Giants

In our annual feature we talk with two large, multi-discipline mechanical contracting companies — who have found different paths to success — about the state of the industry, the state of the market, and their investments in the future. We also catch up with some of our other Giants with news briefs from around the country.

Our coverage begins on pg. 18.



worker welding girders.

RADIANT | BATH/KITCHEN | TECHNOLOGY | TOOLS | TRUCKS | GREEN | MANAGEMENT ABC Announces the 2023 National Craft Champions

SPECIAL TO CONTRACTOR

WASHINGTON, DC — Associated Builders and Contractors has announced the winners of the 2023 National Craft Championships. The winners were honored at ABC's Careers in Construction Awards ceremony during ABC Convention 2023 in Orlando, Florida, March 15-17.

The 34th annual competition showcased the skills and expertise of nearly 200 of the nation's top-performing craft professionals, including carpenters, electricians, pipefitters, **Turn to ABC, page 10**

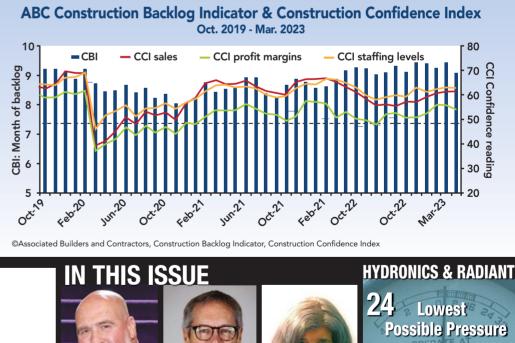


Participants in the plumbing competition at the 2023 National Craft Championships.

CONTRACTOR INFOCUS

Schwartz on

MANAGEMENT



Linhardt on

HYDRONICS

Types and uses of general liability insurance.

DOE Announces Solar Decathlon Winners

Annual competition challenged builders and designers.

Protecting Subcontractors

TECHNOLOGY

Feldman on

LG Inverter Residential Heat Pump Water Heater

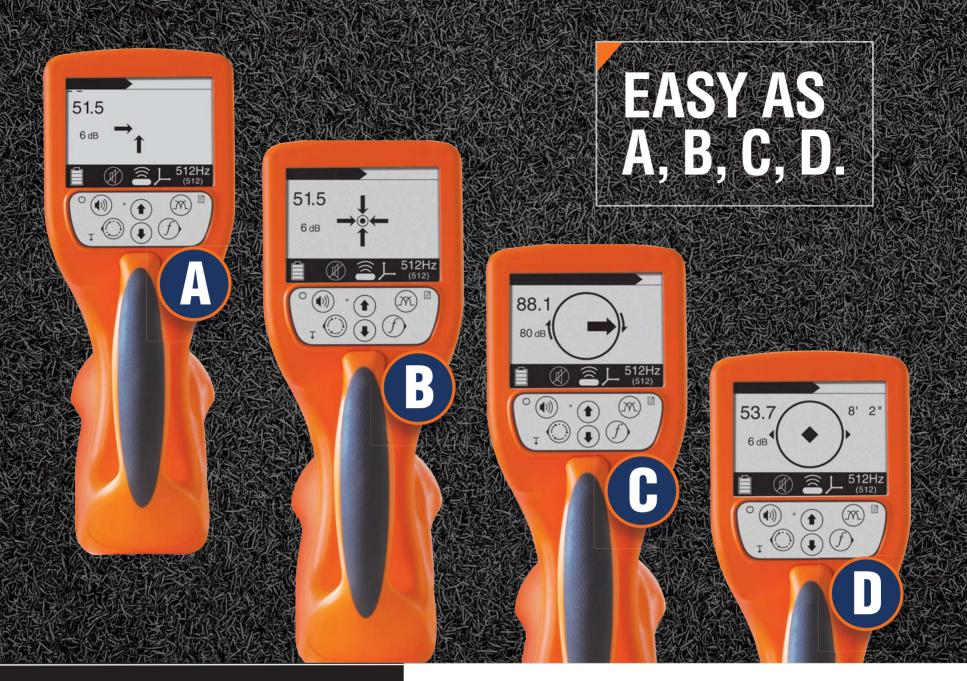
Market Report: Subcontractors Bear the Brunt of Rising Materials, Labor Costs

SPECIAL TO CONTRACTOR

AUSTIN, TX— /PRNewswire/--Billd/, a leading provider of material and labor financing solutions for commercial subcontractors, announces the release of their third annual construction industry market report, the 2023 National Subcontractor Market Report: \$97 Billion in Extra Weight on the Shoulders of America's Subcontractors.

► Turn to Market Report, page 38





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PHCC Releases Q1 2023 Contractor **Confidence Index Report**

SPECIAL TO CONTRACTOR

FALLS CHURCH, VA — Plumbing-heating-cooling contractors are feeling cautiously optimistic, according to a new report from the Plumbing-Heating-Cooling Contractors — National Association. The PHCC Business Intelligence Department just released its newly developed Contractor Confidence Index (CCI). Sponsored by PHCC Strategic Partner Bradford White, the PHCC CCI is based on a quarterly



PLUMBING-HEATING-COOLING

CONTRACTORS ASSOCIATION

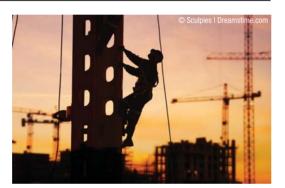
▶ Turn to PHCC, page 36

March Construction Input Prices Down Year-Over-Year

SPECIAL TO CONTRACTOR

WASHINGTON, DC - Construction input prices increased 0.2% in March, according to an Associated Builders and Contractors analysis of U.S. Bureau of Labor Statistics Producer Price Index data released today. Nonresidential construction input prices rose 0.4% for the month.

Overall construction input prices are 0.9% lower than in March 2022, while ▶ Turn to Story, page 40

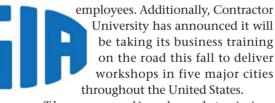


EGIA Contractor University Announces Major Expansion Plans

SPECIAL TO CONTRACTOR

SACRAMENTO, CA - Contractor University powered by EGIA, the nonprofit trade association dedicated to contractors' success. has officially an-

nounced new plans to significantly expand its collection of on-demand training resources for contracting businesses and their

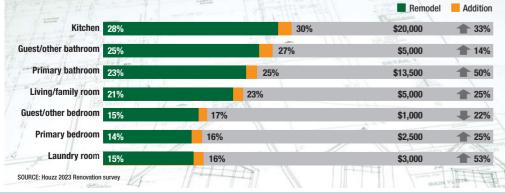


The new online-based training content will begin with the release of a

▶ Turn to EGIA, page 42

CONTRACTOR INFOCUS

Frequency of and Median Spend on Top Interior Room Renovations Among Homeowners Who Renovated in 2022



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Editorial Offices

EDITORIAL STAFE **Group Editorial Director-Buildings & Construction** Mike Eby, meby@endeavorb2b.com

Editor-In-Chief Steve Spaulding, sspaulding@endeavorb2b.com

Editor-At-Large John Mesenbrink, jmesenbrink@endeavorb2b.com

Contributing Writer Kelly Faloon

COLUMNISTS

Al Schwartz, Management Pat Linhardt, Hydronics & Radiant Patti Feldman, Technology Matt Michel, Marketing

Art Director Susan Lakin Ad Services Manager, Deanna O'Byrne Production Manager, Sam Schulenberg Classified Production Designer, Terry Gann Audience Development Manager, James Marinaccio



Endeavor Business Media, LLC

CEO Chris Ferrell President June Griffin CFO Mark Zadell COO. Patrick Rains CRO. Regaie Lawrence Chief Administrative and Legal Officer. Trav Kane EVP Buildings, Lighting, Technology group: Lester Craft EVP. Marketing Solution & Data: Jacquie Niemied VP, Buildings & Construction, Mike Hellmann VP, Production Operations, Curt Pordes

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Industry News-

In Brief

Associated Builders and

Contractors announced its strong support for the Employee Rights Act, which was introduced on April 19th in the 118th Congress by Sen. Tim Scott, R-S.C., and Rep. Rick Allen, R-Ga. With a primary objective to provide essential protections for workers' rights, choices and freedoms, the ERA stands in stark contrast with the Protecting the Right to Organize Act, which would drastically restructure America's labor laws.

Armstrong Fluid Technology

has announced that John Doughty has joined the company as Director, Global Sales Enablement. Based in the UK, he will work with Armstrong sales teams around the globe to drive the sales process in each region. Prior to joining Armstrong, Doughty was the Global Director of Sales Excellence for the Electrical Products business within Honeywell.

CEO Warrior, a global business mentoring, training and coaching organization for service business owners, announced today that it will host its transformative Service Business Grown Intensive event on May 19 and 20 at its East Brunswick, New Jersey headquarters. The seminar is geared toward providing home service owners with the tools they need to know to achieve financial freedom and market domination.

A first-of-its-kind partnership has been created between the **Mechanical Contractors Association of British Columbia** and She Summits, an organization that empowers and supports the personal

development of women. The She Summits partnership augments another platform important to MCABC as part of its commitment to strengthening the profile of underrepresented groups in the industry.

The National Center for Construction Education and Research has announced that

Research has announced that Dr. Melissa L. Perkins has joined the organization as the Director of Philanthropy and Partnerships. As a 501(c)(3), NCCER relies on philanthropic investments from corporations, foundations, and individuals to advance its mission. Perkins is a certified fundraising executive with more than 15 years of experience in fundraising, marketing, and communications.

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- Legacy Service Partners with John Henry's Plumbing, Heating & Air
- Robotic Total Stations: Thriving in a BIM-Enabled World
- United Flow Technologies Acquires Kodru-Mooney and Macaulay Controls

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- The engine that could: how contractors can produce a solid business plan
- ► 8 Simple ways to boost your monthly cash flow

INDUSTRY PERSPECTIVES

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

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

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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General Liability Insurance: Protecting Subcontractors

Thoroughly reading contracts and carrying the right coverage can help save MEP contractors from lawsuits and damaged reputations.

BY KELLY L. FALOON FOR CONTRACTOR

subcontractor hired by a general contractor (GC) for a construction project has a certain scope of work, usually spelled out in a contract between the two. Included may be safety responsibilities to help keep everyone safe on the site and sections on liability.

A general liability insurance policy can protect a subcontractor from undue financial hardship if a GC files a lawsuit against it. Such insurance isn't usually required by law, but most GCs (and building owners) expect it to work on their projects.



Justin Cardullo, Hiscox Vice President and general liability product head.

"General liability covers third-party damages," explains Justin Cardullo, Hiscox Vice President and general liability product head. "Most commonly, the type of things that a general liability policy would protect someone against would be bodily injury."

For example, if a subcontractor is digging a trench and doesn't provide adequate marking or other safeguards, a pedestrian could walk by and fall in. This can certainly come back to the subcontractor.



'Damage can take a while to sort out; a general liability policy can help provide defense for the business and take some of that strain off the business owner.' — Justin Cardullo

Property damage is another reason for coverage.

"Say one of your crew puts a nail in a piece of drywall and then hits a water pipe; you know the ensuing water damage will be a consequential hit to your company without liability insurance," he says.

Cardullo adds that while premiums might seem high to a mechanical-electrical-plumbing (MEP) contractor, "the litigation and damages associated with some of those losses far exceed what that insurance premium would be. MEP contractors typically carry about \$1 million of liability insurance for general liability. They get a lot of coverage for a relatively small amount of premium dollars; going without coverage is a significant risk to the business."

This is especially true when something your employee did on the jobsite results in a total loss for the building owner—such as sweating a fitting and starting a fire that burns down the building. "Even if that building owner has coverage, their carrier can always subrogate, which means they file legal action against the employee in that business that caused the loss," Cardullo explains.

A business doesn't have to do something wrong to be sued; there can be litigation where any subcontractor on a jobsite is named in the lawsuit. "Damage can take a while to sort out; a general liability policy can help provide defense for the business and take some of that strain off the business owner," he notes.

Risks

On a construction site, the GC carries the risk for the entire project—carpentry, welding, masonry, MEP, sheet metal, etc.—everything from the foundation to the roof. GCs require subcontractors to have their own insurance for damage issues.

"The GC is best served to ensure that all the various tradespeople have adequate coverage so it isn't overexposed to liability issues," Cardullo notes.

In addition to liability risks, subcontractors risk the theft of tools, equipment or other trade materials. A general liability policy is only third-party coverage, so subcontractors need a separate policy, such as a business owner's policy, to cover their tools, equipment and people.

However, the biggest risk for subcontractors is safety. The construction industry has the highest number of nonfatal falls, slips and trips, notes the US Bureau of Labor Statistics (BLS). It states that 62.2% of construction workers are exposed to heights on the jobsite.

The Occupational Safety and Health Administration's Construction Focus Four hazards are falls (most cited violation), struck-by accidents (one of the biggest causes of jobsite fatalities), Turn to Liability, page 8

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General Liability Insurance: Protecting Subcontractors

Continued from page 6

caught-between (crushing) incidents and electrocutions.

Measures should also be taken to protect workers from heat- or cold-related incidents, ensuring they are properly hydrated or wearing appropriate work apparel for the conditions.

High temperatures are one of the Focus Four for Health studied and compiled by the American Industrial Hygiene Association (*https://bit.ly/3LwhBxq*). It lists other health issues workers face on construction sites, including manual material handling, noise and air contaminants.

The BLS notes that in 2020, 8.9% of all construction workplace deaths were due to exposure to harmful substances or environments (*https://bit. ly/442bdp4*). Construction workers

have high rates stemming from overexertion (lifting and lowering) and bodily reaction, which can relate to nonfatal injuries where they cannot work for a time.

Workers comp insurance will cover employee costs associated with a work-related illness, accident or death. The coverage is mandated in most states, and penalties may be incurred without it. An employee's family could also sue subcontractors for severe injury or death, so a laser focus on health and safety practices is necessary for construction businesses.

Reputation

MEP subcontractors can also have nonmonetary consequences to jobsite liability issues. Whether or not they are in the wrong, being named in a lawsuit can damage their reputations.

"The entire litigation process can take a toll on business owners," Cardullo explains. "In many ways, it can be a distraction; their time and energy are diverted to thinking and dealing with one of those incidents. Business owners invest years building their brand; it's crucial for them to protect that reputation and brand that can be difficult to rebuild."

He adds that general liability coverage includes reputable representation if that worst-case scenario happens.

Cardullo's advice for MEP contractors is to carefully read any contract for subcontractor work to ensure they understand what their responsibilities are.

"It's always important for an MEP business to know what it's signing

up for," he explains. "Whoever the decision maker is should review and understand the contract's terms and conditions; be sure to ask questions. If the subcontractor has legal representation, its counsel should review a contract for any questions they might have and identify anything that is or could be problematic."

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

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ABC Announces the 2023 National Craft Champions

Continued from page 1

plumbers, welders and more, all vying for top honors in 16 competitions with skills on display in 12 crafts. NCC also featured a team competition with journey-level craft professionals from different crafts working to complete a joint project. The competition included a two-hour online exam and a six-hour practical performance test.

"ABC's premier skilled trades competition showcases the best construction craft professionals in the industry," said 2023 National Chair of the ABC Board of Directors Milton Graugnard, executive vice president, Cajun Industries LLC, Baton Rouge, Louisiana. "These individuals brighten the future of the merit shop industry, build America stronger and highlight the countless career opportunities available in construction. From Texas to California and Iowa to Massachusetts and all across this great country, these craft professionals traveled to Florida to demonstrate their superior skills, education and safe work practices."

Established in 1987, the National Craft Championships celebrate and recognize upskilling in construction, draw some of the country's most talented craft professionals and highlight the important role that craft skills training plays in the construction industry.

ABC offers more than 800 education programs across 68 chapters to help



A group shot of all competitors in the 2023 National Craft Championships.

The 34th annual competition showcased the skills and expertise of nearly 200 of the nation's top-performing craft professionals.

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train the next generation of construction workers. Its flexible, earn-whileyou-learn craft and safety training leads to industry-recognized, national credentials for today's most soughtafter construction crafts. ABC is committed to showing the promising career path the industry provides, from apprenticeship to journey-level worker to business owner. Milwaukee Tool has been the official tool sponsor of NCC since 2019. The company provides tools and prizes for NCC competitors. The competition is supported by volunteers, generous sponsors and in-kind contributors who plan and execute this event annually. For more information, visit *abc.org/ncc*.

Winners in the Plumbing portion of the competition were:

- **Safety:** Richard Barnhart, Frey Lutz Corp., ABC Keystone Chapter
- **Bronze:** Bryce Traut, TDIndustries, Construction Education Foundation
- **Silver:** Alek Angster, Z3 Plumbing, ABC Southern California Chapter
- **Gold:** Briar Bessmer, Henry Miller Mechanical, ABC Heart of America Apprenticeship Trust
- Winners in the Pipefitting portion of the competition were:
- **Safety:** Edgar Uresti, Jr., Performance Contractors, Inc., ABC Greater Houston Chapter
- **Bronze:** Maxwell Witt, Manhattan Mechanical Services
- **Silver:** Byron Alford, TDIndustries, Construction Education Foundation
- **Gold:** Tristan Wright, TDIndustries, Construction Education Foundation

View the full list of winners at www.abc.org/Portals/1/News Media/2023%20NCC%20winners %20FINAL.pdf

Department of Labor Announces Launch of 'Beat the Heat' Contest

WASHINGTON, DC – Do you have an idea for helping workers stay safe in the heat? The US Department of Labor's Occupational Safety and Health Administration today announced the launch of a nationwide competition for stakeholders in all industries to share their best tools and other resources for informing workers about the dangers of heat exposure in indoor and outdoor workplaces.

OSHA's "Beat the Heat" contest seeks to educate workers and employers about workplace heat hazards, raise industry and general public awareness of the dangers excessive heat presents to workers, and motivate employers and workers to act to prevent heat illness.

Open to stakeholders in all industries, the competition will be judged by a panel of subject matter experts in OSHA and other federal agencies. The panel will choose winners based on the following factors:

- Innovation
- Best non-English language entry
- Creativity
- Indoor heat emphasis
- Strength of message
- Young worker emphasis
- All submissions must be received

by June 9, 2023. Visit the OSHA Beat the Heat contest webpage for contest rules and submission instructions. Send questions about participation to *heatcampaign* @dol.gov.

Winning submissions will be displayed on OSHA's website and

featured in the agency's QuickTakes and *The Heat Source* newsletters. Winners will also receive a letter of appreciation from Assistant Secretary for Occupational Safety and Health **Doug Parker**, a Beat the Heat Challenge Coin and a congratulatory certificate.



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Peterman Cares Program Provides New Water Heater for Disabled Vet and His Family

INDIANAPOLIS, IN — A disabled veteran and his family have a new, muchneeded home water heater courtesy of Peterman Cares, a program launched by leading Indianapolis-area HVAC and plumbing company Peterman Brothers to ensure deserving area families facing hardship have essential home services.

Corey and Samantha Davidson are the first beneficiaries of the Peterman Cares program. Their family's home remodeling project stalled when

they faced unexpected medical emergencies in January and February, leaving the familv without a reliable water heater.

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"I don't know how to put into words how appreciative I am," Corey Davidson said. "For somebody who's struggling, even if it's just temporary, something like this can pick them up and change their trajectory completely. I've never heard of a company doing this before. It was a huge surprise and changed our lives."

PetermanBros.com 317-252-1112

Peterman Brothers

Peterman **Brothers donated** and installed a new water heater for a family facing unexpected financial challenges.

Every month, the Peterman Cares program donates and installs heating, cooling, plumbing, or electrical equipment for someone experiencing unplanned hardship in the Indianapolis area. Nominations for Peterman Cares recipients can be submitted at https://indianapolis. petermanhvac.com/cares/.

"We believe every family deserves a safe and comfortable home," said Chad Peterman, president of Peterman Brothers. "Unfortunately, many of our neighbors are at risk because they don't have the critical basic services they need. With Peterman Cares, we're taking action to make a safer and more comfortable community for everybody and every family."

Peterman Brothers is available to help with any plumbing or cooling needs. For more information or to find out about the Peterman Brothers Protection Club, call 260/201-3070 or visit https://www.petermanhvac.com/.

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Quality Control - Callbacks



I've ever witnessed personally, but I'm quite sure some of you have other horror stories that would rival it.

The whole point is, rather than address the root cause of the problem, (i.e.- lack of skill and training on the part of his "plumbers") the contractor chose to fund and equip cleanup crews. The reasoning, at the time, was the contractor was doing so many houses that he needed to get the undergrounds in place so he could bill for them and to keep his cash flow going. Needless to say, that contractor went out of business pretty quickly.

Addressing the Problem

When you have recurring issues with work that has to be done more than once, the best thing to do is to isolate the foreman, crew or the man involved. If you are a service shop, evaluating your servicemen is a simple matter. Figure out why the work needed to be redone. It might be supervision. It might be the man or a whole crew. It won't take long to understand what you need to do to correct the problem. It will usually come down to either inattentiveness, lack of skill or simply sloppy work habits, all of which can be addressed and corrected. Simply allowing the problem to continue by turning a blind eye to it is not an option. You are in business to earn a profit. Callbacks rob you of that profit potential and anything you, as an owner, can do to mitigate them will put money back in your pocket. 🕒

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.

limb here and say that if you are in business and reading this publication, you are in it to make a profit. I've never met anyone in this industry (or in most other industries, truth be told) who was working at it for fun or some noble purpose other than the profit motive. After all we are capitalists. We take our money and invest it in a venture that, we sincerely hope, will provide profits and a "return" on our investment.

'm going to go out on a

There are other benefits to the capitalistic model, not the least of which is providing livelihoods to your employees and their families. As well, the purchasing of materials, vehicles, maintenance

on said vehicles, office space, furniture, computers and other consumables all flow from the single adventure we call "business." In other words, at least today, business is what makes America tick. As anemic as things have become lately, that is still the paradigm here.

This fact has not been lost on the various levels of our government. If you want to really get apoplexy, sit down and try to figure out what percentage of your profits go to various taxes. The answer is upwards of 60% of every dollar you make. You read that correctly: roughly \$.60 of every dollar you sweat to earn goes to paying a tax of one kind or another. Almost takes the fun out of being in business, doesn't it?

Get a Handle on Labor Costs

So, when you consider how difficult it has become to make and hold on to a buck, you would naturally look into ways to maximize your profit picture. I have covered several different ways of maximizing your business' profit, on each and every job you do, in past columns. I've talked about controlling overhead (always a good way to save \$\$\$), and covered things like vehicle maintenance, material ordering and control as well as a few other mechanisms that are designed to stop the bleeding of your profits. These methods



Whether you are a large company or a one-man shop, callbacks are one of the largest drains on profitability you can have.

and ideas work not only in this especially nasty economy, but as models of good business in any economy.

When labor for a particular job is estimated, there is always a certain amount of guesswork involved. No matter how good the estimator is, there are variables within each and every project that make pinpoint accurate labor estimating a virtual impossibility. Still, a good estimator can get pretty close to actual labor time. Throw in a small "fudge factor" and you can get a darned good picture of your labor expenses on any given job. With some of the new software packages available, estimating labor has gotten very accurate.

Do it Right...the First Time

Whether you are a large company with many employees or a one-man shop, callbacks are one of the largest drains on profitability you can have. You can call it anything you like, do-overs, oopsies, screw ups, it doesn't matter. Having to re-do work which has already been done is obviously an exercise in flushing profit down the drain. Sometimes a callback cannot be helped, and in fact many estimators and owners will allow for a certain amount of labor for this issue. However, frequent instances of having to revisit portions of a job cannot be tolerated.

Many years ago, during one of our housing booms here in the Phoenix area, there was a company doing tract homes that ran several crews of men who did nothing but drive around with an air hammer and compressor, breaking up slabs on new homes. Their job was to relocate misplaced drainage, waste and vent lines, as well as copper water lines (this is before PEX, but the issue is the same) that were positioned outside of walls or otherwise damaged by the guys who did the original installations. This was the worst instance of waste of profit

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The Evolving Regulation Environment

CONTRACTOR speaks with Eric Truskoski, Vice President of Administration & Government Affairs for Bradford White Corp.

SPECIAL TO CONTRACTOR

ric Truskoski is Vice President of Administration & Government Affairs for Bradford White Corp. While his current focus is government regulation—both studying its impact, anticipating its demands, and lobbying for changes—he comes to the position from the engineering side of the business, having worked in product development as a design engineer, laboratory manager and engineering manager.

CONTRACTOR had the opportunity to speak with Truskoski about the rapidly evolving regulatory environment, the role of the manufacturer, and opportunities the future might present for specifiers, installers and maintenance professionals.

CONTRACTOR: To what do you attribute the change in the regulatory environment in recent years? Is it more than just a new administration in the White House? Do concerns regarding climate change play a role? Does political polarization play a role?

Eric Truskoski: There are many factors that are contributing to the current regulatory environment from the fundamental change in priorities between the previous and current administrations to the global socio-economic challenges we are facing, such as climate change, supply chain issues, lingering pandemic concerns, war, and so on.

Certainly, since the changeover to the Biden administration, we have seen a significant increase in regulations that affect our industry and ultimately our customers and society at large. Some of the pending regulations are based on the regular DOE regulatory review cycle but other actions at the federal and state levels have been accelerated by climate change concerns.

The topic of climate change (aka "global warming") does play a role and has been the catalyst for a lot of the emotionally charged commentary that has overtaken this critically important issue where we need to have productive conversations on how to

We can make products to meet regs and customer performance demands.

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deal with this challenge. To work to combat climate change, several factors have to be considered, such as, but not limited to: effective infrastructure development and energy management; energy security; and supply chain concerns. The latter is important, as it has great implications when it comes to where the value content will be coming from and the impact it will have on US jobs.

The complexity of the climate change issue and the extreme views regarding how to address the matter have created the significant polarization that we see today across political parties and public interest groups.

CONTRACTOR: What are the challenges for a manufacturer (like Bradford White) trying to negotiate this new environment? Can technology deliver both the efficiencies regulations demand and the performance end users demand, or is there always going to be a trade-off?

Truskoski: There are certainly challenges presented when engineering and manufacturing products to meet current and pending regulation, es-

pecially given that the pace and frequency of these regulations is unprecedented. Not only do manufacturers have to design to the required standards, but they must also do so without disregarding the everyday issues that our plumbing and HVAC customers deal with, such as safety, structural constraints, fuel availability, installation capabilities, costs, and of course the varied needs of their residential and business customers.

Manufacturers must gear up to manufacture for the future while still producing product that is needed to support the current landscape, which is not an easy transition. So, leading into your second question of being able to meet both regulatory and customer demands, unfortunately this is not a simple yes or no answer.

Fundamentally, we can make products to meet regs and customer performance demands. But performance for professional contractors also includes factors, such as cost and ease of service and installation. When you look at what is coming in terms of the next generation of residential and commercial products, there are many in our industry concerned about new space and venting constraints along with fuel limitations that will greatly affect costs (both first and operating) and consumer choice when it comes to their water and space heating options.

CONTRACTOR: How will the new regulatory environment affect equipment specifiers and installers performing new construction and replacement work? Will it require more training? Will there be new costs to be passed on to customers? Will governments or utilities take on some of these costs in the form of rebates?

Truskoski: As I mentioned, all segments of the plumbing community and their residential and commercial customers will be affected to varying degrees by the products and energy options that will emerge because of the current regulatory environment.

Training will certainly be paramount for the plumbing and HVAC community to come up to speed on the newest products as well as the newest regulations and codes that will affect how and where they can install these products.

As the regulatory requirements drive product complexity, the product and installation costs will go up commensurately, and with there being a push towards heat pump technology. It will likely mean multiple trades will need to be involved with installations (i.e. - plumbing and electrical contractors). A portion of the cost burden for consumers can be offset by various tax incentives and rebates, some of which emerged at the beginning of this year as a result of the Inflation Reduction Act (IRA).

At the state and local levels, there are programs that are currently offering rebates, but as higher efficiency products become the minimum requirement, we anticipate rebates will go away and consumers will need to bear the entire costs.

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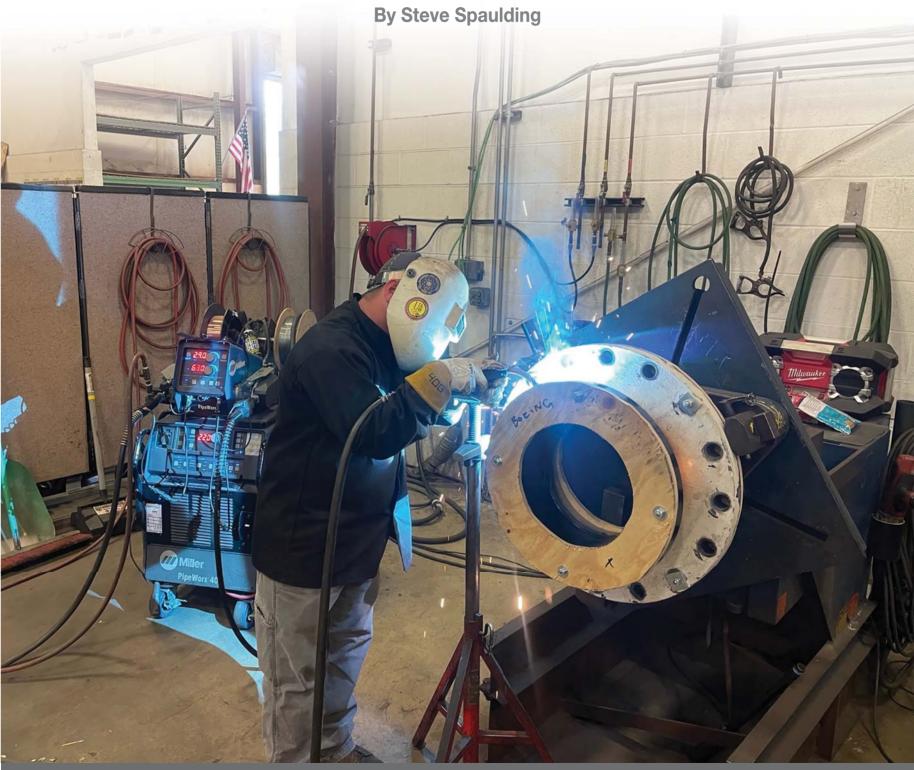
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Bookof Giants 2023 Tale of Two Giants

The two large mechanical contractors profiled for our 2023 Book of Giants have, from similar beginnings, followed different paths to success.



In 2016 Haberberger started a plumbing division, that has since seen rapid growth.

heir origins are very similar. Haberberger, Inc., began in 1948 in St. Louis, MO, with its founder, **Frank Haberberger** as a refrigeration service company. AZCO began just one year later, in Appleton, WI, in 1949, with four individuals who saw a need for quality mechanical contractors in central Wisconsin as the post-war boom was getting under way.

From its refrigeration shop beginnings, Haberberger transitioned to commercial refrigeration and, by 1961, began offering air conditioning services and commercial piping construction. Today it is consistently ranked among the top 10 mechanical contractors in the St. Louis area—with 200 employees and \$71.4 million in revenue in 2022 alone. And it is still, four generations later, owned and run by the Haberberger family.

AZCO, while still headquartered in Appleton, is today a nationwide provider of heavy industrial construction and prefabrication services. As a wholly-owned subsidiary of Burns & McDonnell, the company is 100% employee-owned with over 1,000 experienced union craft workers across the country and an annual revenue of \$167.9 million.

Both companies paved the road to success with a commitment to quality, a focus on workplace safety, and a relentless drive to innovate and diversify their service offerings. Yet their stories are as different as the industry they exemplify—and as diverse as the customers they serve.

Haberberger, Inc.

aberberger, Inc., is commemorating a major milestone this year, the 75th anniversary of its founding. Frank Haberberger passed on the company to his son **Joe F. Haberberger**, who took over as President in 1970. Under Joe's leadership, Haberberger added industrial piping work. The company's original fabrication shop was added in 1993, with prefabrication work soon becoming a vital part of the company. Joe retired in 1997, with his three sons, **Mark, Neil** and **Steve Haberberger, Sr.** taking the helm.

Today, **Steve Haberberger**, **Jr**., is the current President CEO of Haberberger, and he looks with great pride on all his family and the Haberberger team has been able to accomplish. "We're in the infant stages of planning a 75th anniversary party," Haberberger said. "We'll have retirees, clients, probably some suppliers and current employees all gathered up."

The company has seen great success in recent years, mainly due to the growth of the St. Louis area and the high demand for the company's expertise. "We've been very fortunate the last couple of years as more of the industrial work has come to us here in St. Louis, and we'll be riding the wave for as long as it lasts," Haberberger said. "Do we think it's going to stay for another 5 to 10 years? Aside from water/wastewater? Only time will tell. We'll try to make the most of it while we have it."

Next Generation Workforce

With the new infrastructure bill, Haberberger sees even more work coming its way. In an effort to make sure the company has enough skilled hands to take the work on, it has been reaching out to its trade partners.

"We are signatories to UA local 562 and Sheet Metal Workers Local 36, and we've been doing a lot of work with them trying to get more people into the manpower pipeline," Haberberger said. "There's been a couple special projects, specifically, Local 562 UA has its Champions program to work towards a more diverse workplace that includes more women in the trades. That's been an untapped market."

Haberberger notes that, with the way construction projects are handled now, Project Managers have a lot more on their plates than they did a decade ago. Some of the company's most experienced PMs, however, are approaching the age of retirement, and when they leave a huge amount of institutional knowledge leaves with them.

Haberberger's solution has been to have more junior Project Engineers work under the guidance of more senior Project Managers performing some daily tasks such as submittals, RFIs and plan updates. Part of this is to help PMs make better us of their time, but also they hope those engineers benefit from those decades of experience while they still can.

"We're hoping that, through osmosis, there's that transfer of knowledge and experience," Haberberger said, "about some of the difficult conversations you sometimes have to have on a project—with an owner, with people in the field, with fellow contractors, with coordination. Just to learn the ropes with someone who has been doing it for 30 years, see how they react in certain situations. It really



From left to right are Sam Haberberger, Treasurer and Project Estimator; Steve Haberberger, Jr., President and CEO; Joe Haberberger, Service Manager; Ben Haberberger, Vice President and Project Manager, and Jeff Haberberger, Vice President and Project Manager.

helps to build the confidence of that younger generation."

The Prefab Puzzle

Haberberger, Inc., has been a leader in prefabrication since the 2000s. The company's 28,000 sq. ft. fabrication facility has different section for ferrous and non-ferrous materials, allowing it to perform stainless steel piping work for use in food, beverage and pharma projects.

"We keep a steady crew of 10 to 15 pipefitters in that fabrication shop," Haberberger said, "so that one is a well-oiled machine. About two years ago we opened up a new sheet metal fabrication facility. We have two coil lines, one for straight duct, one for fittings, and that's really helped us to be more competitive in the market."

And the work the shop does is not exclusively for Haberberger's own construction work. The company has been able to sell its prefabrication services to clients around the country. "That's really helped us out," Haberberger said. "That helps them, where they might not have, 10 guys, say, to install all this duct work, we can do long runs for them and maybe then they only need five or six."

Looking to the Future

Since recently completing its sheet metal shop, Haberberger is content with its current facilities. Now the company is turning to invest in new technologies, particularly VDC (Virtual Design and Construction). The company has been using STRATUS, an MEP construction solution that centralizes and streamlines all the data on a project. There has even been discussion of bringing a programmer in-house to help the company's various systems better communicate with each other. The company's other big project is to reinforce its plumbing division, which was started back in 2016. "We've seen rapid growth within that division," Haberberger said. "Plumbing is something that's always going to be there. Any kind of building you're building. So we're trying to build up a great workforce there and make sure we're staying on the leading edge. Making

sure that when people need plumbing we're the ones that they come to."

And, if a recession does hit, to have built the company to the point where it can weather the storm. "We'll try to build in our efficiencies, so that if there is a downturn we can fill in other gaps," Haberberger said.

AZCO

he name "AZCO" came from a company goal to supply all the needs of its customers "A to Z." That led the organization to adopt an integrated approach to every project it encountered. Self-performing most of its work means AZCO minimizes the number of subcontractors, which in turn allows it to enforce its own high safety and quality standards, at the same time avoiding scheduling conflicts that can interfere with a client's project timing and budget.

Made for Infrastructure

AZCO sees itself as uniquely well-positioned to benefit from the historic levels of infrastructure investment that are in the offing.

"We made our name building infrastructure in the power, pulp and paper, oil and gas and industrial spaces to the point where we've built up a solid reputation in those spaces," **Al King**, AZCO's Senior Vice President of Project Development said.

In more recent times, AZCO's parent company Burns & McDonnell has moved it into new markets like renewable energy, battery storage, and transmission and distribution. "Our solid performance in those newer markets has solidified our reputation and positioning that we can perform in all industrial markets," King said.

The Entire Critical Path

Back in the 1940s and '50s, "A to Z" in construction meant everything from concrete to plumbing to electrical. But in 2023, A to Z means offering a panoply of services from design to prefabrication to construction. Again, AZCO works hard to make good on the promise of its name.

"We have bolstered our preconstruction teams—which work closely with our Burns & McDonnell engineering partners—to provide constructability input into the design on all of our projects," King said. "In addition, we have nearly 100,000 square feet of prefabrication shop space for pipe and metal prefabrication, and we are investing in electrical prefabrication to provide a dedicated space to assemble electrical components for our customers, taking that work out of the field and into our shops in a controlled location."

To further enhance their prefabrication services, AZCO has invested in advanced tools, including a plasma beam metal cutter that is able to perform cutting and coping operations that used to take hours in only minutes.

"Our customers' needs are for more efficient, streamlined construction that is seamless across the entire critical path," King said. "With our parent company, Burns & McDonnell, we now bring the entire critical path to construction that includes design, prefabrication and installation for major industrial construction projects."

Partnerships for Growth

Like Haberberger, AZCO has strong relationships with the trade unions and construction and builders associations in communities where the company works.

In addition, the company invests resources in several secondary education institutions that focus on STEM and trades careers in construction. These partnerships include school



An AZCO technician out on a solar installation job.

grant opportunities, workshops, shop tours, student sponsorships for various construction-related competitions, and youth apprenticeships that provide students paid on-the-job training while they earn school credit.

"We believe investing in our communities creates awareness around the possibilities of all construction careers for the purpose of educating and training the next generation of skilled craft and industrial construction professionals," King said.

Taking the Next Steps

Because of the growth of its construction business, AZCO will be building a new tool center and a new equipment and equipment maintenance facility.

Due to the rapid development of new construction technology, and because of the scope of work AZCO performs, the company will continue to invest in technology that is used in all phases of the construction process from design to final product, including best-in-class schedule management and progress data collection software.

"We are continuing to further integrate the entire lifecycle of a project—including engineering, estimating, construction and final turnover to the owner," King said. "Improvements to our digital workflow and how we track and share data ultimately lead to increased productivity, reduced delays, and can increase job site safety and quality through improved data communication."

AZCO will also invest in its prefabrication facilities. The hope is to create a dedicated space for electrical prefabrication that will compliment the company's existing metal and pipe prefabrication facilities as AZCO continues to design for constructability.



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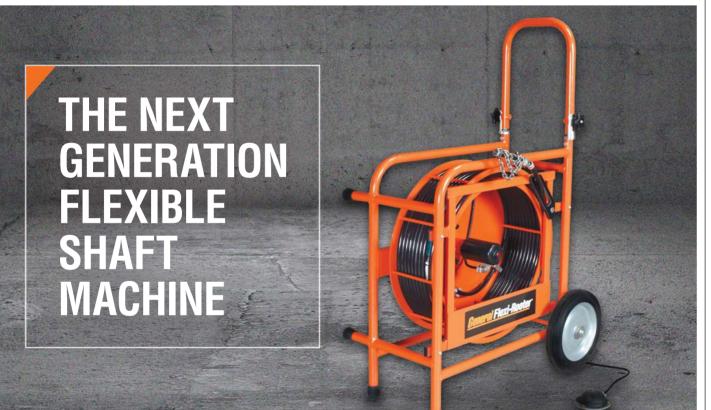
Giants in the News 2023

The latest news and happenings from some of the largest mechanical contractors in the nation.

What have some of the nation's largest mechanical contractors been up to since our last Book of Giants? **Here's a brief run-down.**

Ahern Ahern Participates in Project G.R.I.L.L.

Project G.R.I.L.L. partners from Laconia High School recently visited Ahern's Industrial Services Shop in Appleton, WI, to learn about different types of welding. Project G.R.I.L.L. (Growing Readiness in Learning and Leading) is a project-based learning experience for high school students that strives to develop a strong future workforce by positive highlighting



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Baker Group Baker Group Celebrates 60 Years

From humble roots planted in its founding as a small plumbing contractor in 1963, Baker Group has grown to become one of the Midwest's largest full-service specialty contractors. In January, the company marked the 60th anniversary of its founding by **Bernard "Bernie" Baker Jr.**

"The strongest indicator of future performance is always past accomplishment," says Board Chair **BJ Baker III**, who is the son of founder BJ Baker, Jr. and served as CEO from 1984 until transitioning into his current position in 2021.

Emcor Group Scalise Industries Wins Safety Excellence Award

At this year's Mechanical Contractors Association of America (MCAA) Convention, EMCOR Services Scalise Industries was presented with an MCAA/CNA Safety Excellence Award. The award is one of the industry's most prestigious recognitions of safety and health programs, safety innovations, and achievements in safety.

E. M. Duggan E.M. Duggan Wins New England Specialty Contractor of the Year

E. M. Duggan was named New England's 2022 Specialty Contractor of the Year by ENR Magazine. E.M. Duggan ranked No. 3 on the 2021 ENR New England Top Specialty Contractor rankings with \$185 million in regional revenue. On the 2020 survey, the firm ranked No. 3 with \$233.5 million. In 2019, the firm ranked No. 2 with \$212 million in revenue.

Harris Harris Honored as Top Workplace

Harris announced that it has earned the Top Workplaces USA 2023 award. The honor is based solely on employee feedback and celebrates companies that prioritize creating a people-centered culture and giving employees a voice.

Over 42,000 organizations were invited to participate in the Top Workplaces USA survey, issued by Energage, a third-party research firm. Winners are selected based on results from the anonymous employment engagement survey which uniquely



measures 15 drivers related to an engaged work environment, company culture, leadership and overall job satisfaction.

J.C. Cannistraro, LLC J. C. Cannistraro Celebrates Women in Construction Week

J. C. Cannistraro celebrated Women in Construction Week 2023 with a special luncheon out at The FID. The event was hosted by Cannistraro Women United and guests included leaders from Locals 12, 537 and 17, company leaders from the field and office, and many more. The even was an afternoon of celebration and connection.

John W. Danforth Co. CEO Robert Beck Inducted as President of MCAA

Danforth's CEO **Robert Beck** was recently inducted as the new President of the Mechanical Contractors Association of America (MCAA) at the conclusion of the MCAA23 Conference. Beck was given the MCAA Presidential gavel to signify his term starting by outgoing MCAA President **Robert Bolton.** [You can read our interview with Robert Beck, Staying Ahead of the Curve, at contractormag.com -- Ed.]

Manhattan Mechanical

Max Witt Earns Bronze at the National Craft Championships

Maxwell "Max" Witt, a 24-year-old apprentice pipefitter at Manhattan Mechanical Services, earned a bronze award in the "Pipefitting" category as part of the annual National Craft Championships in Kissimmee, FL. Presented by the Associated Builders and Contractors during its mid-March convention, the 34th annual competition showcased the skills and expertise of nearly 200 of the nation's top-performing craft professionals.

"We are extremely proud of Max and his amazing accomplishment," says **Mike Uremovich**, founder and CEO of Manhattan Mechanical Services, the premier merit shop mechanical services contractor in the Greater Chicago and Northwest Indiana Area.

McKinstry McKinstry Signs the Carbon Leadership Forum MEP 2040 Challenge

McKinstry has deepened its commitment to innovating waste and climate harm out of the built environment by becoming a signatory to the Carbon Leadership Forum's (CLF) MEP 2040 Challenge. McKinstry joins a growing list of over 50 MEP (mechanical, electrical and plumbing) firms across the country pledging a commitment to sustainability.

Southland Industries Southland Wins GSA Design Award

In March, the US General Services Ad-ministration awarded Southland Industries with the Design Award for their work on the FBI Central Records Complex in Winchester, VA. The GSA is the largest public real estate organization in the United States. Mandated to set the highest standards of excellence in design and construction, GSA is also regarded for its principled leadership in the built environment. The GSA Design Awards recognize the most outstanding demonstrations of its mission, as well as projects that represent the next generation of achievement.

TDIndustries EVP Matt Terry Named ABC's 2023 Young Professional of the Year

In March, TDIndustries announced that **Matt Terry**, Executive Vice President of Construction and Special Projects, received the Associated Builders and Contractor's 2023 Young Professional of the Year Award. Terry was honored at the ABC Convention 2023 in Orlando. The award is given to an industry professional under the age of 40 employed by an ABC member company and is chosen based on leadership qualities, career achievement and vision for the future.

"Matt is a dynamic yet humble leader. He has always focused on building trusting relationships with customers and fellow TD employee-owners. He plays a vital role leading our engineering-led construction businesses, particularly in North Texas," says TDIndustries' CEO **Harold MacDowell**. "He embraces Servant Leadership and is dedicated to nurturing the next generation of construction industry professionals and tradespeople."

UMC

UMC Wins Safety Excellence Award

UMC accepted the Mechanical Contractors Association of America's 2022 National Safety Excellence Award at the 2023 MCAA Annual Convention in Phoenix, Ariz. on March 29th. UMC has now won the award three times in the last five years. UMC's "pride-based" safety culture consists of simple, yet powerful, strategies that always keep safety top of mind.

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by Patrick Linhardt Hydronics manager at corken steel products co.

Lowest Possible Pressure

S team systems can be very quiet, gently heating cast iron radiators on a cold winter night. Steam systems can also be very loud, waking you up from a deep sleep on a cold winter night. This job was the latter. I had been offering advice on the phone to a contractor trying to help a homeowner. Banging pipes—what we call water hammer—was disturbing a family's rest.

The contractor was passing the advice along to the homeowner and his brother-in-law, who lived in the basement of the house and consequently was front and center for the racket the system was making. There are many causes of water hammer in a residential steam heating system. Most are explained in my Field Guide in the chapter on returning water back to the boiler.

Banging pipes what we call water hammer was disturbing a family's rest.

You can download a copy for free at the website *steamupairoutwaterback.com*. During most of my conversations with the contractor, I was driving down the road without access to the book and its troubleshooting charts.

How Clean is the Water?

The contractor would throw out a theory and we would discuss how it might apply to this project. The first thing that needs to be checked on any residential steam system is how clean is the water in the boiler. I am not talking about the color of the water, but whether it is free of "impurities." What we are looking for is anything that ends up floating to the waterline to disrupt the release of steam bubbles.

The most common culprit is oil, which naturally floats to the surface and generally doesn't mix with the water. (For more details, I covered this topic back in October 2020.) Oil contaminating the boiler water will cause a lot of different problems, so it is always smart to start with oil-free water in a steam boiler.

The homeowner's brother-in-law is a handyman and the contractor didn't want to send his guys for some reason, so he got the job of putting the cleaner in the boiler. The one we sell is color coded, green for good and red/pink for still dirty. You just add more cleaner until the color is right. Now we had a clean boiler making nice dry steam, but the same water hammer.

Check the Traps

The next thing I remember talking about was radiator traps. It is a two pipe system with radiator traps on each cast iron radiator. They were original to the house's construction in the late 1920s. We agreed that a radiator trap that has failed open could allow steam into the dry return and cause problems.

The handy brother-in-law took on the job of replacing all of the elements in all of the radiator traps, since they were original and the homeowner was planning on staying in the house. If nothing else, it would improve efficiency and comfort. Unfortunately, that is all that replacing the elements did. Pow! The water hammer was still there.

Pipes out of Pitch?

Again, I was in the car driving when I got the news. Our conversation drifted to the pitch of the pipes and the condition of the wet return. Old houses sometimes settle, which can cause the pipes to come out of pitch. A steam system is based on the return of the condensate by pitch water running downhill—or by vacuum. This system, like most residential systems, did not have a vacuum pump.

I told him it was time to throw a level on the pipes and get a look at the wet return. That's the portion of the return piping that is below the waterline of the boiler and collects all the rust from the inside of the pipes and radiators. Over the years (and most residential steam systems are averaging over 100 years old) this accumulation builds up to block



Pat Linhardt's favorite steam gauge from his personal collection. Ounces to the right of zero, inches of water column of vacuum to the left of zero.

the return of water to the boiler. Besides causing water hammer, this slowing/ blockage can also cause flooding.

The whole time we're talking, I'm asking when the water hammer occurs. Does it happen at the beginning, middle or end of the steam cycle? Knowing this helps troubleshoot the problem. If it happens at the beginning, it could indicate that water is hung up by a sagging pipe. If it happens at the middle, it could indicate that water is stacking up into the steam main because of a clogged wet return. If it happens at the end of the cycle, it could indicate that the horizontal portion of the Hartford Loop is too long.

The answer was the beginning. But answers aren't always correct. When we finally got to the point of a site visit, the system was as quiet as a church mouse. Just a gentle hiss from the multiple air vents. Air was passing freely from the system as the steam was moving through the pipes and up to the radiators. We double checked the pitch, observed the level in the gauge glass moving normally, and confirmed that the wet return was replaced with the last boiler replacement.

My Favorite Gauge

Fortunately, the boiler had a steam gauge that read between zero to fifteen pounds. That gauge is not the gauge in the picture, however. That is my favorite steam gauge in my collection because it states very clearly what steam pressure the system should be operating at. Unfortunately, the gauge scale assumes the reader knows it is indicating in *ounces* of pressure, not pounds, to the right of zero.

Also, it assumes the reader knows that it is indicating inches of water column of vacuum to the left of zero. Vacuum was important in the early days of coal fired equipment, but that is a topic for another column. The point is to keep your operating pressure very low. Many residential steam systems were designed as vapor, with an operating pressure of only eight ounces.

With a lower operating steam pressure, the vertical distance between the water line and the horizontal steam main and dry return could be reduced. No more digging a pit to set the boiler in to increase that distance. In this house, the boiler is set on the basement floor and the ceiling was normal height.

Vaporstat to the Rescue

When the boiler got up to two pounds of pressure, the noise began. For every pound of steam pressure, there has to be 28" of vertical distance to create the pressure necessary to push the water back in the boiler by gravity. At two pounds the distance has to be at least 56". We measured the vertical distance between the water line and the horizontal pipes at less than the necessary 56".

Once the problem was identified, the solution became clear. Replace the conventional pressure control that is scaled in pounds to a pressure control that is scaled in ounces, generally referred to as a vaporstat. Adjust the new control to 12 ounces or so, and the system will stay quiet, like it's supposed to.

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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WATERTOWN, MA — Bosch Thermotechnology, a leading global source of high-quality heating, cooling, and hot water systems, has been renamed to Bosch Home Comfort Group.

The move reflects the company's innovative product portfolio, commitment to electrification.

Effective as of April 1, the decision to rebrand the business group was seen as the next logical step in its evolution to combine a sustainable lifestyle with a high level of comfort through an innovative product portfolio, which includes heat pump and air conditioning systems, water heaters, gas furnaces, boilers connected thermostats and other accessories

"Bosch has always been an innovator since our founding and for many years now, we have led the way in developing green technology. We invent



It's time for a change. **Bosch Home Comfort Group**

energy efficient solutions that not only make the home more comfortable, but

more sustainable for our climate as well," said Dr. Alexander Wuthnow,

Bradford White Earns 2023 ENERGY STAR[®] Partner of the Year Award

AMBLER, PA — Bradford White Corporation, an industry-leading American manufacturer of residential. commercial, and industrial water heating and storage products, has announced that it has received the 2023 ENERGY STAR[®] Partner of the Year Award for Sustained Excellence from the US Environmental Protection Agency and the US Department of Energy.

"ENERGY STAR is a vital supporter of our industry's efforts to help commercial and residential consumers throughout North America make a meaningful difference in their communities while enjoying the benefits of efficient, high-performing products," said Carl Pinto, Jr., senior director of marketing communications for Bradford White. "We're proud to be honored as an ENERGY STAR Partner of the

Year for the fourth consecutive year. reflects our com-

mitment to energy efficiency and continuing efforts to educate professionals and invest in disadvantaged communities."

"As we accelerate historic efforts to address climate change, public-private partnerships will be essential to realizing the scale of our ambition," said EPA Administrator Michael S. Regan. "I applaud this year's ENERGY STAR award winners for working with EPA to deliver a clean energy future that saves American consumers and businesses money and creates jobs."

Each year, the ENERGY STAR program honors a select group of businesses and organizations that have made outstand-

consecutive year. This recognition **BRADFORD WHITE**®

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ing contributions in the transition to a clean energy economy. ENERGY STAR award winners lead their industries in the production, sale, and adoption of energy-efficient products, homes, buildings, services, and strategies. These efforts are essential to fighting the climate crisis, protecting public health, and creating a clean energy future for everyone.

Winners are selected from a network of thousands of ENERGY STAR partners. For a complete list of 2023 winners and more information about ENERGY STAR's awards program, visit www. energystar.gov/awardwinners.

President and CEO of Bosch Home Comfort North America. "Now, we are excited to evolve our company through the Bosch Home Comfort brand and collaborate with our partners and industry leaders to advance toward a greener future—both for the home and our planet."

Home Comfort Group

The new name also embraces the global megatrend toward electrification, with Bosch announcing last month an investment of \$737.6 million in electrification to further accelerate heat pump ramp up, specifically as high demand for climate-friendly solutions continues globally.

In the US, Bosch was also one of the first manufacturers ready to market with a SEER2/HSPF2 product line that meets the 2023 federal minimum energy efficiency standards. Bosch Home Comfort saw a 68 percent increase in business growth in the US last year, where Bosch has a highly competitive product portfolio of continuously variable, and thus very energy-efficient, inverter devices. Total global investments in research and development also increased by 13 percent to \$227.6 million.

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Scale Prevention Technology Stars in Former NFL Quarterback's Home

SPECIAL TO CONTRACTOR

LOUISVILLE, KY — Louisville native and former Baltimore Ravens quarterback, **Chris Redman** needed a new water heater that would provide the convenience of instant hot water without sacrificing valuable space in his basement. That's why he knew it was time to replace his current water heaters with a new solution.



Golden Arm Award winner Chris Redman on the porch of his home in Lousville, KY.

To save space and get endless hot water in an instant, Redman decided to remove his home's four 50-gallon tank water heaters and replace them with two tankless units, A. O. Smith's ProLine® XE Gas Tankless Water Heaters. One unit was installed to provide hot water to four bathrooms and the kitchen, while the other primarily covered the master bathroom with a tub, shower and multiple sinks.

The ProLine XE tankless water heaters Redman selected come equipped with X3 Technology, which helps solve the biggest challenge facing tankless water heaters—scale buildup. This first-of-its-kind innovation from A. O. Smith prevents scale at a microscopic level and assists scale particles in passing through the piping instead of sticking and building up over time.

An Easy Choice

"I'm excited to have A. O. Smith water heaters in my home," Redman says. "It was an easy choice to make—they're the best in the business and that's what I like to hang my hat on."



(Right) Carl Lebo, project manager for W.L. Staton, (left) Jerry Winslet, A. O. Smith senior technical trainer.

Chris Redman, Super Bowl-winning quarterback, replaces four 50-gallon tank water heaters in his home's basement.



Sanders Plumbing technicians unload to start work.

For homeowners like Redman, solving the issue of scale buildup offers significant benefits. Tankless water heaters with X3 Scale Prevention Technology retain their like-new efficiency, extending a unit's lifespan by three times and eliminating the need for scale-related maintenance. In testing, A. O. Smith found that tankless water heaters with X3 Technology retained like-new efficiency over 15 simulated years and 450,000 gallons of water—and they were still going strong when the testing ended.

Each unit features a clear control screen displaying the set temperature for the respective unit. For these types of water heaters, a recirculation pump can be used with an approved crossover valve at the furthest fixture. The team at Louisville-based Sanders Plumbing, led by **Ronnie Sanders**, was able to install the new tankless units easily and quickly by adapting the setup in Redman's basement. Redman can rest assured his home's hot



The addition of a recirculation pump (from Wilo) means instant hot water delivered to the end use point.

water will run efficiently for years thanks to A. O. Smith's 15-year limited warranty covering scale-related maintenance—the only warranty of its kind in the industry.

An Absolute Breeze

"Installing A. O. Smith's tankless water heaters with X3 Technology was an absolute breeze," said Sanders. "The new units will not only save space in Redman's house, but they'll far exceed his hot water needs as well. Plus, thanks to X3 Scale Prevention Technology, we never have to worry about servicing scale-related maintenance on the units."

Growing up in Louisville, Ky., Redman started his football career at Louisville Male High School and went on to play for The University of Louisville. In 1999, while at U of L, Redman was awarded the Johnny Unitas Golden Arm Award, a prestigious honor that recognizes the top upper-classmen quarterback in college football. A. O. Smith is the presenting sponsor and supporter of the Golden Arm Award.

"To win that award was one of my greatest honors," Redman reflected. "I associate Johnny Unitas with the best, and I look at A. O. Smith as the best. It's a great partnership."

The new innovations from A. O. Smith will allow more homeowners like Redman to appreciate the peace of mind that comes with a high-performing tankless water heater without the worry, time and costs associated with scale-related maintenance.

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by Patti Feldman computer Authority

Messaging, AI and Proposals

ServiceCall.ai[®] VoIP Phone software by Service Fusion (*www.servicefusion.com*, 888/902-0304 is call tracking and messaging software, built for service contractors, that combines VoIP, artificial intelligence, and field service experience. Users can instantly view all call activities and get a screen pop-up with customers' work history and account details. Users can also convert website visitors into leads by letting them initiate a text message conversation on your website, using the integrated text-me-back Service-Chat.ai widget.

The solution, which requires subscription to and which integrates with Service Fusion field service management software (covered in my November 2016 tech column), lets vou track where your business is coming from with local and toll-free numbers that connect instantly to referral services in Service Fusion and allows you to guide your agent through phone calls with custom scripts. (The Ring-a-Tech feature routes customers directly to technicians without exposing their phone numbers.) Visibility into your agents' daily performance statistic includes statistics such as call reasons, call outcomes, average number of calls each agent handles per day, average talk time, and lead- to-win ratio.

Pricing: fee per user/monthly.

lt's 2023 – What's on Your Website?

Time for a chatbot? A chatbot is automated computer programming technology that, when used by a field service company (among others), utilizes artificial intelligence (AI) to "understand" incoming questions and other communications from customers and other website visitors to gather data and provide answers or facilitate further communication. If programmed to act as a virtual assistant 24/7/365, a chatbot can be used to identify sales opportunities, schedule appointments based on a variety of factors, or otherwise expedite meaningful interactions designed to boost and expedite customer service both during regular business hours and beyond.



Reviews of ServiceCall.ai messaging software, the Mobile Monkey and Chatfuel chatbot platforms, and QuoteWerks quote and proposal software.

You can utilize a platform that already exists—and may include templates—or you can build your own chatbot that features your own dialog trees and workflows. Below are a couple of options:

Mobile Monkey (*www.mobile-monkey.com*) is a sales outreach and customer support platform enabling automated and live chat from various business messaging channels: via Website Chat on a business website, SMS, Facebook, and Instagram. It includes drag & drop widgets for you to build the "menu options" of a chatbot (that generates leads and answers questions) and features an inbox for viewing and responding to messages and assigning leads.

How it works: Create "Chat Starters"—various widgets to trigger conversations based on certain conditions—for example, if a user comments on a Facebook or Instagram post or interacts with a web site chat window—you can then create an automated dialogue asking key lead qualifying questions for your sales funnel. You then use the inbox to view conversations that come into your messaging channels. Mobile

Monkey has a mobile app for iOS and Android that enables replying in all channels from your phone.

Pricing: monthly subscription plan, scaled by number of users and inclusion of additional features, such as advanced analytics and reporting, additional integrations, and other features.

Chatfuel (*www.chatfuel.com*) is a no-code chatbot platform for building bots on your website, Facebook Messenger, Instagram, and Whatsapp to help automate communication with potential and existing contacts (customers) for purposes of lead generation, customer support, and other communications.

The platform, which offers three different plans at a monthly fee plus per-conversation fee, offers free customizable templates, including six designed to drive sales by automatically qualifying leads, booking a sales call, collecting, and exporting data, and sharing promo codes.

Pricing: monthly plan, based on the number of conversations you automate per month (a conversation is one written exchange between a user and your bot) with Chatfuel's analytics



suggesting which plan to select, based on the number of followers on your Facebook or Instagram page.

Quotes and Proposals

QuoteWerks (*www.quotewerks.com*) is software for creating, delivering, and tracking professionally laid out branded customer quotes and proposals. The solution captures electronic signatures and enables collection of deposits, progress payments, balances, or full amount.

You can create lists, templates, and bundles standardizing your product and service offerings. Documents are searchable by customer, date, sales representative, or other filters.

The platform integrates with several CRM and accounting platforms, including Microsoft Outlook, Salesforce, QuickBooks Desktop, QuickBooks Online, Sage 50, Google Contacts, and other CRMs and accounting systems.

The (optional) QuoteValet feature creates a dedicated branded delivery webpage that alerts you every time your customer views a quote, selects or changes options, has questions, and electronically signs and makes payments.

QuoteWerks supports nine different pricing methods, including markup, discount, grow margin, volume based, list, customer price levels, and customer/product price matrix. It can also track commissions for each quote/order.

The QuoteWerks Dashboard provides a high-level overview of the total dollar amount and number of quotes and orders from the current month, last month, and two months ago and visibility on quotes expiring within a week. The Opportunities Dashboard, displayed in real-time, enables sales reps to track their progress with quotes in current month and historically and allows managers to see all of their sales reps metrics in one place.

Pricing: per month/per user. Free trial available.

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 Why Plumbing is a Noble Profession

here are lots of noble professions in the world. Medical professions, first responders, teachers, mothers, and the ministry immediately come to mind for most people. The profession that may not be top-ofmind, but should be is plumbing. Here are six reasons why.

1. Plumbers Really Do Protect the Health of the Nation

Over a century ago, the plumbing profession adopted the slogan, "The Plumber Protects the Health of the Nation." This was not idle marketing, but a statement of fact. In the United States, life expectancy was age 47 in 1900. By the year 2000, it had increased to age 77. While there are many factors contributing to the rise in longevity, plumbing can certainly take a share of the credit.

The reduction in cholera exposure is an example. Before the advent of modern plumbing, cholera devastated public health. Even today, cholera is believed to account for up to 7.5% of deaths in India according to the president of the Indian Plumbing Association. Fortunately, cholera is rare in first world nations thanks to the plumbing profession.

Despite the strides that have been made, work remains. According to the Centers for Disease Control and Prevention, "About 7.2 million Americans get sick every year from diseases spread through water." Plumbers represent the front line in efforts to reduce waterborne disease.

2. Plumbers Make Hot Showers Possible

Without the plumbing industry, showers would be cold and baths would only be hot if the water was heated on a stove and added to a bathtub. This is another way that plumbers protect the health of the nation. Without hot water, it is certain that people would shower and bathe less frequently.

Health aside, anyone who has performed a hard day's work know the



Take pride in your profession. Take pride in plumbing.

pleasure of a relaxing bath or refreshing shower. Life is better when hot water flows from a tap. This would not be possible without plumbing professionals.

3. Plumbers Make People Happy

When a plumber is called for service, there is usually a problem. People are unhappy, distressed, or downright miserable. There is a problem that the customer cannot solve. Enter the plumber. There is relief on his arrival and happiness when he completes his work. Plumbers leave people in better shape than they find them. They make people happy.

4. Plumbers Make Positive Contributions to Society

The plumber adds tangible value in the work he performs. Every dollar of revenue the plumber receives is a reflection of how much society values his contributions to the world. Every dollar of profit he keeps is a reflection of how efficiently he delivers that value.

The plumber not only adds value and not only makes buildings better he makes the economy better. Plumbers create jobs and not merely jobs, but good paying ones. Plumbers are part of the engine of free enterprise that drives economic growth and improved standards of living.

5. Plumbers are Independent

In 1954, Albert Einstein, bemoaning the way politics was affecting science, wrote that if he had it to do over again he would not choose science as a profession. He would choose plumbing. Why? He envied the independence of the plumber. Einstein wrote, "I would rather choose to be a plumber or a peddler in the hope to find that modest degree of independence still available under present circumstances."

What Einstein meant was that plumbers are largely in control of their own lives. Plumbers can control their circumstances. They can work for wages or start a business. Plumbing company owners can operate lifestyle businesses or build salable enterprises that allow them to walk away wealthy.

6. Plumbers Sacrifice for Others

The plumber who starts a company, takes on risk that most people will never know or understand. The entrepreneurial plumber puts his sweat



The Plumber Protects the Health of the Nation



and fortune into a business with no guarantee of a return and little support from government. He lives under constant threat from the elements of society that preys on business owners. Plumbers choose risk over a safe, secure occupation.

Moreover, plumbers operate businesses where they are on-call for emergencies. When a pipe is broken or sewage is backing up, the situation is urgent and the plumber drops whatever he is doing to save the day. Being on call after hours is a sacrifice that most people will never know.

Plumbing is a Noble Profession

Yes, plumbing is a noble profession. This is why mothers want their daughters to marry plumbers or doctors. Plumbers are noble, good providers, and competent people. Take pride in your profession. Take pride in plumbing.

Could you use help growing your plumbing company? Join the Service Roundtable and gain assess to thousands of fully downloadable sales, marketing, management, coaching, and other tools. Membership is free for most plumbers who utilize the Roundtable Rewards buying group, which is included with membership. Learn more at www.ServiceRoundtable.com or call 877/262-3341.



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by Katy Bartlett and Nora Gardner KATY BARTLETT IS AN ASSOCIATE PARTNER IN MCKINSEY & COMPANY'S DENVER OFFICE. NORA GARDNER IS A SENIOR PARTNER IN WASHINGTON, DC.

What the US Construction Industry Needs: More Rosie the Riveters

ndustries such as semiconductors, defense, aerospace, machinery and automotive are planning \$400 billion in new US projects through 2027. To complete them, they need 200,000 to 300,000 additional skilled workers including electricians, machinists, welders, and pipefitters. US construction spending is expected to rise to about \$1 trillion over the next five to ten years. Add in the \$1.2 trillion Congress approved for infrastructure in 2021, and the construction industry will obviously need many more workers. But it is having difficulty finding them—construction-related job postings were unfilled for an average of 33 days in 2022, compared to 24 days in 2019.

Women can help fill construction labor shortages, while moving into well-paid jobs with a future.

There is an answer to filling this gap: women. And there is precedent: Rosie the Riveter. She was the centerpiece of an iconic 1943 poster that celebrated the women who kept US industry humming when millions of American men were called to war. After the war, though, most of these skilled workers either left or were pushed out of these jobs. Now, however, it is clear that women can help fill labor shortages—and there are good reasons for them to do so.

A Fulfilling Alternative

Specifically, women dominate a number of occupations such as administrative assistants, customer service, and food service, that are vulnerable to automation. Construction trades offer a fulfilling alternative that pays well: an average of \$29 an hour for construction electricians and pipe fitters, for example. But women only account for one in nine construction jobs—and that includes positions spanning from administration to management. For the construction trades specifically, the figure is only 4.5%—up from 3.5% a decade ago, but still very low. Women can help fill construction labor shortages, while moving into well-paid jobs with a future.

It is certainly possible for women to make inroads in male-dominated industries. For instance, the number of women at a global oil and gas company increased from 24.3% to 30.3% in 2019, after a conscious effort to develop and recruit more women. In the United States, almost a quarter of oil industry workers are female.

Exposure, Training, Recruitment

So, how can women be encouraged to enter the construction trades?

To start, the industry can help increase girls' and women's exposure. There are some programs that do this. For example, Massachusetts Girls in Trades, a partnership of unions, schools, local governments, and contractors, offers workshops for school counselors so they can help girls become aware of the opportunities in the building trades. The National Association for Women in Construction provides mentors and scholarships. There are other examples, too, but there are simply not enough of them, on a big enough scale.

The next step is for women to obtain the skills to succeed. Competition to enter apprenticeship programs, particularly union-sponsored ones, is fierce, and men have a head start because they are more likely to see these as a future. Because there are so few women in the industry, girls and women have



Rosie the Riveter, an American media icon associated with female defense workers during World War II.

less access to mentors or role models.

Pre-apprenticeship programs can help recruit women and keep them on course. Examples include nonprofits such as Oregon Tradeswomen, Chicago Women in Trades, and New York's Nontraditional Employment for Women. Girls and women who participate in these programs go on field trips, listen to guest speakers, and learn basic skills. There is evidence that such efforts can work: the percentage of women in registered construction trade apprenticeships in Massachusetts has doubled since 2012, to 10.3%. While these examples are heartening, a much broader industry-wide collaboration is needed to bring in women in large numbers.

Once on the job, women need to be retained and promoted, and this is not happening as much as it should. More than half (57%) of women in construction surveyed in 2022 said they were seeking a new job, much higher than the national average (37%).

One reason is that too often women are not treated with dignity and fairness. In the 2021 IWPR Tradeswomen's Retention and Advancement Survey of more than 2,600 US tradeswomen, the most common reason they gave for considering leaving was harassment and discrimination: three-quarters said this was somewhat or very important. In terms of hiring, promotion, work assignments, and being treated with respect, less than half of respondents said they were frequently or always treated equally. Two-thirds faced sexual harassment on occasion.

Finally, women in construction have a particularly difficult time with childcare; they are much more likely than those in other industries to say it is a factor that affects their work perfor-

mance. Only half say they have employment-based access to childcare of any kind (backup support, subsidies, or on-site provision).

Pressing Need

And yet, despite everything, women in trades love the work—particularly the camaraderie (78 %) and the pay (88 %).

Given the pressing need for skilled workers, the case to bring in more women is overwhelming—and to everyone's benefit. This brings us back to Rosie the Riveter. Women were not only riveters, but welders, electricians, machinists, and, yes, construction workers. They were needed during the war, and they succeeded. And they can do so again—to their benefit and that of the construction industry.

Katy Bartlett is an associate partner in McKinsey & Company's Denver office. Nora Gardner is a senior partner in Washington, DC.

by Frank Manzo IV, MPP EXECUTIVE DIRECTOR OF THE NON-PARTISAN ILLINOIS ECONOMIC POLICY INSTITUTE



Rebuilding American Infrastructure —and its Skilled Construction Workforce

s the United States invests trillions of dollars to rebuild and modernize our infrastructure, we need solutions that enable construction companies to access more of the skilled workers these projects demand.

We already have one. It's called apprenticeship.

Registered apprenticeship programs enable participants to "earn while they learn," with tuition costs covered by sponsors who gain access to pools of workers that meet minimum skill, productivity and safety standards.

Within the construction industry, there are two types of apprenticeship programs. Joint labor-management programs—or union programs are administered by contractors and unions and funded based on a "cents per hour" formula the two sides negotiate during collective bargaining. On the other side are nonunion programs, which rely on voluntary contributions from sponsoring employers.

The Difference Matters

This distinction in program financing matters. In the union model, workforce training investments are literally part of every project bid. In the nonunion model, voluntary training investments are often jettisoned in short-term efforts to lower project estimates and win bids. Over time, this only invites the kind of workforce shortagesbeing reported across the industry today.

Recent research by economists at the University of Utah, University of Michigan, and Rutgers University shines new light on the scope of the problem.

Specifically, the report finds that while unions represent just 12% of our national construction workforce, union programs train 73% of all construction apprentices across the United States including 8-in-10 apprentices who are women and people of color. Enrollees in union programs are also substantially more likely to complete their programs, regardless of race or gender. The study concludes that union programs are not only the best vehicle for getting workers prepared for the jobsite, but



The surest way to meet the industry's workforce supply need is to scale up the union model of training.

they are also the most effective tool for improving industry diversity.

This research makes clear that the surest way to meet the industry's workforce supply need is to scale up the union model of training. In other words, by getting more contractors to become signatory to collective bargaining agreements, we can increase the enrollment and capacity of the joint apprenticeship programs that already deliver the majority of skilled workers to the industry.

Better Jobs—Better Performance

The United States is experiencing a historically tight labor market, with more job openings than unemployed people. Construction industry surveys have shown that nonunion contractors are disproportionately struggling to find workers to fill job vacancies, and are more likely to experience project delays or turn down work altogether as a result. Union contractors are better able to attract and retain skilled construction workers because they invest in both apprenticeship training and higher job quality.

On average, those who complete union apprenticeship programs earn competitive incomes that rival other types of workers with four-year college degrees—free of student loan debt. By contrast, studies have shown nonunion construction workers are more likely to live in poverty and rely on government assistance programs like food stamps.

Beyond increasing their access to sufficiently skilled labor, many contractors are finding that "going union" is ultimately just better for business. Research has shown no overall cost difference on projects completed by union or nonunion shops. Another recent analysis revealed that union construction workers are 4% more cost effective because they deliver superior productivity and safety outcomes to the jobsite, and are less likely to impose turnover or retention costs on their employers. This study also concluded that union contractors face a 40% lower risk of project delays and cost overruns that are often a function of workforce instability.

That said, the choices that will determine our ability to meet this moment of high demand for construction workers are not just up to contractors. Policymakers can help by promoting construction workforce development. Prevailing wage laws, for example, establish minimum wages and training contributions for different types of skilled construction workers on publicly funded projects, and have been found to increase apprenticeship training. Project labor agreements can achieve similar outcomes.

Proven to Deliver

More can also be done to remove other barriers that too often inhibit participation in the trades. We need to stop teaching our kids that college is the only pathway into the American middle class, because generations of ironworkers, carpenters, electricians, and operating engineers prove otherwise. Pre-apprenticeships can help fill the void left by decades of cuts to shop classes and vocational education. Affordable childcare can make it possible for more people to rejoin the labor force and train for these careers. The list goes on.

We are not powerless in the face of today's construction workforce reckoning, nor do we need to reinvent the wheel. To ensure near-term shortages don't become longer-term realities, we need to compete for new workers, provide them with the requisite skills to succeed at the worksite, and the job quality that will attach them to careers in this critical industry. The union construction model is scalable and proven to deliver on each of these metrics.

Frank Manzo IV, MPP, is the Executive Director of the Non-Partisan Illinois Economic Policy Institute.

PHCC Releases Q1 2023 Contractor Confidence Index Report

Continued from page 3

survey of PHCC members designed to take the pulse of the plumbing, heating, and cooling market.

The PHCC First Quarter 2023 CCI summary report revealed a CCI of 52.2, meaning contractors believe industry conditions are better than the previous six months, but are trending lower because of ongoing challenges. The first quarter CCI dropped from 56.0 in the Fourth Quarter of 2022, with an increasing number of respondents citing economic uncertainty and fear of a coming recession.

Any rating over 50 indicates a higher share of PHCC contractors reporting industry conditions are *better* than they were in the previous quarter, while any rating under 50 indicates a higher share of respondents reporting conditions are *worse* than they were in the previous quarter.

Plumbing contractors reported a lower future confidence index of 42.2 percent, versus 48.9 percent in the fourth quarter 2022, indicating that contractors who own plumbing businesses believe industry conditions were worse than the previous six months. HVAC contractors reported a higher future confidence index of 56 percent, versus 60.6 percent in the fourth quarter, suggesting industry conditions still feel better than the previous six months, though sentiment is trending lower.

Challenges

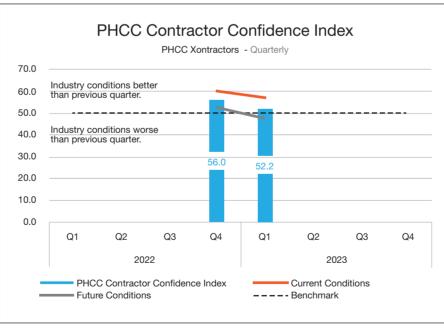
The top contractor challenges reported were:

- Operating short-staffed
- Customers holding off on projects
- Low call volumes
- Too much work
- New construction slowdown

While roughly 70 percent of PHCC Contractor respondents anticipated normal to better sales in the future, 30 percent of respondents are not operating with a full staff, employees, and technicians. Double the number of respondents reported that customers are holding off on projects and replacements due to economic



Survey results cite cautious optimism, although challenges lie ahead.



concerns—a significant increase when compared to fourth quarter results. 72 percent cited rising costs, and half of the respondents noted delays in shipping materials. The results were flat at 25 percent for those who indicated concerns about lower construction

starts when compared to the last quarter.

Outlook

Looking ahead, 73 percent of PHCC respondents are anticipating increased cost of doing business (parts, materials, labor), and most of those respondents are worried about an impeding recession, as well as continued challenges finding qualified employees and technicians.

The top three concerns for contractors over the next six months include the cost of health insurance, fear of recession, and increased (additional) insurance costs. Additional concerns were increased regulations, decreased construction starts, and cash flow.

"We are very pleased to unveil this first quarter 2023 Contractor Confidence Index that will help us determine the current sentiment of PHCC members," said PHCC—National Association President **Dave Frame**. "With access to this valuable information, our members will be able to track challenges and trends that affect their business, as well as maximize any business opportunities that are identified. And from an organization perspective, PHCC will be well-positioned to identify and develop programs and services that will meet our members' needs."

The PHCC Business Intelligence Department works to favorably position PHCC members and affiliates to achieve the highest level of market awareness, professionalism, leadership, and business profitability in the emerging and ever-changing built environment. Relevant resources are updated on a regular basis on the new PHCC Business Intelligence website: www. phccweb.org/business-intelligence.

Disclaimer: The PHCC Contractor Confidence Index (CCI) is based on a quarterly survey of PHCC members designed to take the pulse of the plumbing heating and cooling market. The survey asks respondents to rate market conditions for the present time and for the next six months. Survey results and the PHCC CCI were developed as a general sense of contractor sentiment and should not be used as a guaranteed indication of future performance of economic and industry performance. Many PHCC Contractors provide both plumbing and HVAC installation and service.

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Market Report: Subcontractors Bear the Brunt of Rising Materials, Labor Costs

Continued from page 1

Billd surveyed nearly 900 commercial construction professionals across the country, largely consisting of business owners and executives, most of whom have been in business for 10 years or longer. The report indicates that subcontractors continued to bear the brunt of rising input costs for materials and labor in 2022 to the tune of \$97 billion in unplanned expenses.

Growing Revenues, Decreasing Profitability

Rising material costs and price volatility are not new issues for subcontractors, with 81% of those surveyed reporting a negative effect on their businesses in 2022; 80% expect that trend to continue. It is no surprise given material costs jumped a staggering 26%, according to respondents. Similarly, competition for labor due to the longtime labor shortage was validated by a 15% average increase in labor cost. Together, those increases amounted to \$97 billion in additional expenses for the subcontractor.

While some subcontractors increased their bids to offset these rapidly all material and labor to complete a project," said **Chris Doyle**, CEO of Billd. "They purchase that material and pay for that labor upfront, not being paid for their work for 74 days, a result of the dysfunctional payment cycle.

Survey of nearly 900 commercial construction professionals reveals \$97 billion in unplanned expenses.

rising costs, one third of respondents were unable to raise those bids commensurate with their expenses. This resulted in 57% of businesses reporting a decrease in profitability, despite 61% reporting revenue growth.

Optimistic, Despite Challenges "Subcontractors are the foundation of the construction industry, providing If you add unplanned expenses due to rising costs in material and labor, it puts an unrealistic burden on subcontractors to provide that foundation."

"Despite these compounding challenges, subcontractors remain optimistic about their businesses. This report highlights the entrepreneurial spirit subcontractors continue to exhibit each and every year," Doyle says. The report examines how macroeconomic conditions from this and prior years impacted subcontractors in 2022, as well as their outlook for 2023. It also creates hope by providing perspective on new financing options subcontractors can leverage as mainstays–like supplier terms–become less reliable. 72% of respondents report having supplier terms of 30 days or less. Compared to a 74-day average wait time for payment, it is no surprise that 51% deem the length of their terms insufficient.

Supplier terms also have an unforeseen cost; most suppliers (also surveyed) state that they offer discounts for upfront payment. Despite those disadvantages, 87% of respondents still rely on supplier terms as their predominant means of buying materials. When it comes to funding their increasing labor costs, traditional financing options are even less accessible, leaving 87% of respondents coming out of pocket for labor before getting paid themselves. Luckily, the report highlights financial relief for labor as well as materials.

Cash Flow Solutions

"Subcontractors are resilient and optimistic but need more tools to navigate this increasingly challenging environment," said Doyle. "The payments supply chain in construction is terribly broken, leaving subcontractors to finance a \$1.8 trillion dollar industry with very few cash flow solutions offered to them. Billd stands as the one company truly championing the subcontractor, helping them get the financial support they need to do the best work of their lives. This report highlights the persistent subcontractor challenges that Billd was created to address; providing subcontractors better financing options to weather rising costs, meet project requirements, and lay the foundation for further growth."

To download the 2023 National Subcontractor Market Report: \$97 Billion in Extra Weight on the Shoulders of America's Subcontractors, go to https://billd. com/2023-national-construction-financing-market-report-for-subcontractors.

Vancouver Makes Use of IAPMO's Water Demand Calculator™ Optional for Potable Water Systems

VANCOUVER, BC, CAN — Contractors and builders in the province of British Columbia's most populous city now have the option to use IAPMO's Water Demand Calculator[™] (WDC) for potable water systems, a money-saving alternative to conventional pipe sizing that will also reduce the amount of stagnant water in pipes.

Vancouver had already made inroads in the use of the WDC, as starting in 2019 all rainwater harvesting and reuse systems in the city must utilize the WDC for pipe sizing regardless of the treatment train being used.

A revolutionary tool, the WDC predicts peak water demand in single-family homes and apartment buildings, reducing the carbon footprint of the structure and saving consumers on both their water and water heating-related energy utility bills for the life of the plumbing system. At the same time, proper sizing greatly minimizes the potential threat of bacterial growth within the system.

International Partnership

"We are very excited to see the city of Vancouver adopt IAPMO's Water Demand Calculator," IAPMO Vice President of Technical Services and Research Christoph Lohr said. "IAPMO prides itself on being an international organization, and working toward improving plumbing systems around the globe, for all people. With Vancouver formally adopting the Water Demand Calculator, this is another step in showing the ability of IAPMO's technical expertise to improve plumbing resiliency across borders. It also showcases IAPMO's aptitude in supporting international partners on getting their goals accomplished, with IAPMO having provided educational content of the Water Demand Calculator in support of adoption. It was energizing to work with Building Policy Engineer **Christopher Radziminski**, Manager of Plumbing and Mechanical Inspections **Phillip White**, and other stakeholders in Canada to get the Water Demand Calculator adopted."

Welcome Addition

"The WDC is a welcome addition to the Vancouver Plumbing By-law," White said. "The development, engineering and mechanical industry will benefit from the 'real-world' probability of use, of which it has been designed, and with today's changing climate, the calculator reduces material and energy costs for the owners."

For questions, please contact Christoph Lohr at 909/731-0219 or *christoph.lohr@iapmo.org*, or Hugo Aguilar at *hugo.aguilar@iapmo.org*.

Version 2.1 of the WDC—with new and enhanced features—may be down-loaded at *https://www.uniformcodes.org/ water-demand-calculator.*

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PMI's Inspiring Leaders Program to Take Off at Seattle's Museum of Flight

SEATTLE, WA – Amelia Earhart, an American aviator who set many flying records, said, "Everyone has oceans to fly, if they have the heart to do it. Is it reckless? Maybe. But what do dreams know of boundaries?"

Like Earhart, those who participate in this year's Plumbing Manufacturers International Inspiring Leaders Program at Seattle's Museum of Flight will break through boundaries and, perhaps, find their way toward



fulfilling career dreams and aspirations. The museum will provide an exciting backdrop for the program, which

takes place on the first day of the Oct. 23-26 PMI23 Manufacturing Success Conference in Seattle. The PMI Inspiring Leaders Program fosters leadership, teamwork, creativity and innovation within an inspiring and supportive environment, with an emphasis on small-group dynamics.

Now in its fourth year, this program draws from art, sports and other fields of endeavor to inspire participants to cultivate the creative skills we all have to become better leaders, innovators and teammates. This event previously occurred at the Dali Museum in St. Petersburg, USS Midway Museum in San Diego, and Muhammad Ali Center in Louisville.

Inspiring Backdrop

The museum features special aircraft and spacecraft exhibits, stories of courage, and beautiful views of Mt. Rainier. PMI Inspiring Leaders Program participants can enjoy the museum's collection of more than 175 aircraft and spacecraft, tens of thousands of artifacts, millions of rare photographs, dozens of exhibits and experiences, and a world-class library. Attendees will have access to an outside pavilion that features 20 rare and unique commercial and military aircraft from the 1930s to the present.

As the largest independent, nonprofit air and space museum in the world, the Museum of Flight provides stories of courage and dedication of the men and women who engaged in WWI and WWII air combat. It also houses a 1935 Lockheed Electra, one of only two in the world and the same type as Earhart's famous plane.

Other museum features include interactive and immersive experiences using flight simulators that allow visitors to feel like an Apollo 11 astronaut on a trip to the Moon. Another exhibit invites visitors to climb into the cockpit of an actual SR-71A Blackbird reconnaissance plane or a fullscale mock-up of an F/A-18L Hornet fighter, notes the museum website.

PMI will provide more details and open registration as the event draws near.

March Construction Input Prices Down Year-Over-Year

► Continued from page 3

nonresidential construction input prices have fallen 0.6% over the past year. Construction input prices are now up 39.0% since February 2020, the month before the COVID-19 pandemic began.

ABC's analysis of Bureau of Labor Statistics data shows that prices still remain 39% higher than February of 2020.

"Construction input costs are down on a year-over-year basis for the first time since August 2020," said ABC Chief Economist **Anirban Basu**. "The good news is that the latest PPI data, which show broad-based declines in both goods and services prices, suggest that the expected 25 basis point interest rate hike at the Federal Reserve's May meeting will be the last of the cycle.

"The bad news is that this data indicates greatly diminished pricing power among wholesalers and others," said Basu. "While some will cheer the notion that rate increases are set to end soon, the Federal Reserve may want to maintain higher interest rates for longer to ensure that inflation has been suppressed. This, along with other signs of slowing economic activity, suggests that the possibility of recession remains elevated, though the economic outlook is increasingly uncertain."

Visit *abc.org/economics* for the Construction Backlog Indicator and Construction Confidence Index, plus analysis of spending, employment, job openings and the Producer Price Index.

	1-Month % Change	12-Month % Change	Change Sind Feb 2020
Inputs to Indus	tries		
Inputs to Construction	0.2%	-0.9%	39.0%
Inputs to Multifamily Construction	0.3%	0.4%	36.5%
Inputs to Nonresidential Construction	0.4%	-0.6%	39.5%
Inputs to Commercial Construction	0.4%	0.7%	39.8%
Inputs to Healthcare Construction	0.4%	0.2%	39.2%
Inputs to Industrial Construction	0.4%	2.0%	34.3%
Inputs to Other Nonresidential Construction	0.4%	-1.0%	39.6%
Inputs to Maintenance and Repair Construction	0.0%	-0.9%	37.6%
Commoditie	s		
Adhesives and Sealants	0.2%	11.2%	32.8%
Brick and Structural Clay Tile	0.8%	9.2%	24.9%
Concrete Products	0.7%	14.5%	29.7%
Construction Machinery and Equipment	0.2%	11.8%	24.6%
Copper Wire and Cable	-1.4%	-2.7%	37.6%
Crude Petroleum	-10.2%	-31.2%	42.6%
Fabricated Structural Metal Products	0.8%	2.0%	53.9%
Gypsum Products	-0.3%	9.9%	44.1%
Hot Rolled Steel Bars, Plates, and Structural Shapes	-1.7%	-8.9%	52.7%
Insulation Materials	0.2%	10.5%	37.7%
Iron and Steel	2.9%	-13.8%	63.9%
Lumber and Wood Products	-0.5%	-18.3%	28.1%
Natural Gas	-21.4%	-48.0%	57.4%
Plumbing Fixtures and Fittings	0.4%	4.6%	16.7%
Prepared Asphalt, Tar Roofing and Siding Products	0.1%	3.1%	33.3%
Softwood Lumber	-0.9%	-49.3%	19.3%
Steel Mill Products	1.2%	-15.1%	70.6%
Switchgear, Switchboard, Industrial Controls Equipment	0.2%	11.5%	34.1%
Unprocessed Energy Materials	-11.9%	-27.9%	58.5%

Goulds Factory School Introduces First Female-Only Class

SENECA FALLS, NY — For the first are excited to offer this female-only time in its history, Goulds Water Technology Factory School is introducing a female-only course with the addition of a female- only option of its Residential Water System Product Application & Troubleshooting course. While the curriculum will remain the same, the focus of this female-only offering will be to empower women and their unique experiences in the field, all in a supportive setting offering in-depth training, hands-on experience and opportunities to advance trade skills.

The Goulds Water Technology Factory School courses, held at their training facility in Seneca Falls, New York, cover an extensive range of product lines and related systems. These courses provide attendees with valuable hands-on training and troubleshooting skills that are necessary for success in the field. In addition to the female-only class, courses on variable speed drive and residential water system applications will be available in quarter two.

course to women making valuable contributions to our industry," said Tom Stephan, training manager, Goulds Water Technology. "With this new course, women will receive the same comprehensive training, with the added benefit of a more tailored approach that appreciates the unique experiences and challenges women have faced among historically male dominated industries."

Goulds Water Technology Factory School has provided instruction on the latest advancements in commercial, residential and agricultural applications to thousands of water industry professionals for more than 30 years. In-person sessions held at the Campbell Education Center are led by Xylem's experienced trainers and designed to provide attendees with an immersive and engaging learning experience. State-of-the-art technology includes modernized classrooms, laboratories with touch boards and movable configurations for various demonstrations, as well as digital-forward training activities that sync with mobile devices.

The Goulds Water Technology Factory School is open to distributors, dealers and Original Equipment Manufacturers with at least one year of industry experience. Three unique classes will be offered in the second quarter of 2023.

02 2023 Goulds Water **Technology Factory** School Schedule

- Variable Speed Drive Product & **Application School:** May 8-11
- (FEMALE ONLY) Residential Water System Product Application & Troubleshooting School: June 5-8
- Residential Water System



a xylem brand

Product Application & Troubleshooting School: June 26-29 Detailed class descriptions for Factory School courses are available online.

To learn more about Goulds Water Technology learning opportunities or register for an in- person course, visit http://goulds.com/factory-school or download the registration form. For e- learning courses and other virtual training resources, visit http://goulds. com/e-learning.

Kevs to Success

"We know that education and training are key to success in the field, and we

Q&A: The Evolving **Regulation Environment**

Continued from page 16

Looking at the installation and cost challenges from a commercial perspective, building and facility managers regulated into heat pump only options are looking at commercial products as much as 20 to 30 times the size of the equipment they are using now and at much higher procurement and installation costs.

CONTRACTOR: What opportunities are there for specifiers/ installers in this "new normal"?

Truskoski: Understanding and being on the forefront of the new product and regulatory environment will allow them to learn as demand is low. incentives are available, and there are still a broad set of options to use. That is a key opportunity. For those who have a head start on these changes and the new equipment, it will be a much easier transition as certain

technologies like heat pump water heaters become more of the norm in residential and business applications.

If you are taking the position of dealing with it all when it gets here, you may be putting your business at risk. It is not a matter of if these products will be required, but rather, when they will be required. Additionally, we recommend that all specifiers and installers, not just Bradford White customers, use their voice. If you see something coming down the pike that you believe is not in the best interest of your ability to effectively serve your customers and their needs, then it is imperative for you to voice those concerns to national, state, and local lawmakers, either on your own as a concerned citizen or through the professional and industry organizations to which you belong.



EGIA Contractor University Announces Major Expansion Plans

Continued from page 3

comprehensive on-demand learning management system (LMS) course on sales management during the month of May. This new course will feature 34 individual video segments that together equate to over 10 hours of deep-dive training instruction on how to build, manage and maintain a high-performing sales department within modern home services businesses.

Seizing the Summer

Following the release of the sales management online course in May, Contractor University will launch its Seizing the Summer 2023 series on June 5th. Seizing the Summer 2023, the third annual summertime training series from Contractor University, will run for 14 consecutive weeks and deliver weekly 20- to 30-minute training video segments from Contractor University's acclaimed trainers and business coaches. Each weekly segment will focus on specific topics related to overcoming the most common challenges of the summer busy season and/or how contracting businesses can fully capitalize on all of the opportunities the summer brings. For full details on Seizing the Summer 2023, visit *MyContractor University.com/STS2023*.

New Courses

To wrap-up the on-demand training additions for 2023, three additional online LMS courses will be



added to the Contractor University platform during the fall after Seizing the Summer concludes in September. The three additional courses include:

- **In-Home Sales 2.0 Execution:** An Evidence-Based Process to Educate Homeowners for Optimum Experiences and Maximum Results (releasing September 2023)
- **In-Home Sales 3.0 Elevation:** Skills and Strategies to Elevate the Consumer Buying Experience and Accelerate Sales Performance (releasing October 2023)
- Design Principles for Residential Comfort Advisors (releasing November 2023)

Association plans to significantly expand training resources as well as in-person training events.

Each of these three courses, along with the new Sales Management course releasing in May and the existing In-Home Sales 1.0 course currently on the Contractor University platform, will fully round out the planned on-demand sales training curriculum for Contractor University members at *MyContractor University.com*.

"With the addition of these new online courses and Seizing the Summer, Contractor University members will continue to receive a steady flow of cutting-edge instruction on how to optimize their business practices within today's evolving marketplace" said EGIA CEO **Bruce Matulich**. "We are delighted to have the opportunity to partner with some of the industry's top experts and educators to deliver this fresh new content that will help our member businesses thrive."

On-Site Training

Last but not least, in addition to adding substantial new on-demand training content, Contractor University will be offering five major on-site training events this fall, providing contractors with the opportunity to interact with Contractor University's faculty members and trainers in person, as well as network and share ideas with other fellow contractors in attendance. The five in-person events include: **October 3-5 in Cincinnati, OH**

How to Become the Best Salesperson: 3-Day

Sales Boot Camp Instructors: Weldon Long, Drew Cameron & Russ Horrocks

October 11-13 in Dallas, TX

Marketing Branding & Lead Generation Bootcamp Instructors: Gary Elekes & Drew Cameron

October 24-26 in San Antonio, TX

Company Planning & Budgeting Bootcamp Instructor: James Leichter

November 7-9 in San Diego, CA

Success Week Bootcamp: Financial &

Company Planning Instructor: Gary Elekes December 5-7 in Orlando, FL

Success Week Bootcamp: Financial &

Company Planning Instructor: Gary Elekes

For more information about available Contractor University training resources and events, visit *My*-*ContractorUniversity.com*.

Wrench Group Expands in TN

MEMPHIS, TN — (BUSINESS WIRE) — Wrench Group, LLC ("Wrench"), a national leader in home services, announced that it has expanded to Memphis, Tennessee with the relaunch of Comfort Dynamics, a full-service HVAC company serving Shelby and Tipton counties.

Memphis is Wrench Group's second market in Tennessee after adding Nashville in late 2022, and its 26th market nationwide. This is the sixth new market added through the company's successful "greenfield" growth strategy, where they build a new business from the ground up in a new city.

"Memphis is a market that has great growth potential and with room for another competitor in the home services market," said **Ken Haines**, CEO of Wrench Group. "They fit in well with our other greenfield markets, and we're excited to show the area our excellence in customer service."

Comfort Dynamics aims to add roughly 100 employees in the region over the next year and expects to serve tens of thousands of homeowners in the Memphis metropolitan area. The company offers air conditioning, heating, plumbing and electrical all backed by full satisfaction guarantees, and a long history of serving customers in the Memphis market.

Located at 1210 Midas Cove, Suite #101, Cordova, homeowners can learn more about Comfort Dynamics or schedule service at *https://comfortdynamicstn. com* or by calling 901/688-2665.

NEW EBOOK FROM CONTRACTOR

Download the Best 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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Class With the Kid The System Syzer is a slide rule turned into a circle by an icon of the industry named Gil Carlson by Patrick Linhardt

BEST OF PAT LINHARDT

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

I am honored and

Been There -

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Pat Linhardt A collection of articles from CONTRACTOR

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DOE Announces 21st Annual Solar Decathlon Winners

WASHINGTON, DC — The US Department of Energy (DOE) has announced the winners of the 21st annual Solar Decathlon, DOE's longest-running student competition.

The annual collegiate contest challenges the next generation of building professionals to design and construct high-performance, low-carbon buildings powered by renewable energy, while promoting student innovation, STEM education, and workforce development opportunities in the buildings industry. Ball State University, University of Minnesota Twin Cities, and The Cooper Union for the Advancement of Science and Art won the top honors at this year's competition and were announced at the Solar Decathlon Competition Event at DOE's National Renewable Energy Laboratory in Golden, Colorado yesterday.

"As we work to build America's clean energy future and implement President Biden's ambitious climate agenda, we need dedicated leaders who are ready to undertake any challenge before them with pride and passion," said US Deputy Secretary of Energy **David Turk**, who met with competitors on Friday, April 21. "I was proud to meet so many inspiring students and faculty this past weekend at the Solar Decathlon, each of whom demonstrated the ingenuity and enthusiasm critical to ensuring the benefits of clean energy will be spread far and wide."

Visit the Virtual Village for an interactive tour of this year's cutting-edge buildings.

Since 2002, more than 40,000 students worldwide





The near-complete solar-powered home from the Ball State team.

have participated in the Solar Decathlon, many of whom have gone on to become architects, engineers, and researchers. The Design Challenge is a oneto two-semester, design-only competition, while the Build Challenge is a two-year design-build competition.

Build Challenge Winners

Ball State University took home first place in the 2023 Build Challenge after dedicating nearly two years to designing and constructing their zero-energy home. The "Alley House" team engaged their community to reimagine a zero-energy future for historically under-utilized urban lots through construction of a high-performance, beautiful, functional family home.

Indian Institute of Technology Bombay and The University of British Columbia came in second and third place, respectively, in this year's Build Challenge.

Teams also receive awards for excellence in specific aspects of building construction and design, including architecture, engineering, market analysis, durability and resilience, embodied environmental impact, integrated performance, occupant experience, comfort and environmental quality, energy performance, and presentation.

Design Challenge Winners

Design Challenge teams compete in the same 10 contests as the Build Challenge teams. But whereas Build Challenge teams develop residential solutions, Design Challenge teams compete in one of six commercial and residential divisions including new housing, retrofit housing, attached housing, multifamily housing, office buildings, and educational buildings. A winning team is named

in each division, and from these teams, Residential and Commercial Grand Winners are selected.

University of Minnesota Twin Cities and The Cooper Union for the Advancement of Science and Art earned the Residential Grand Winner and Commercial Grand Winner titles, respectively, in the 2023 Design Challenge, rising to the top of a talented group of 55 competing teams from around the world. University of Minnesota Twin Cities created a deep-energy retrofit for a three-story housing structure that aims to preserve the building's historical character while meeting the local need for affordable, durable, and resilient housing. The Cooper Union created an educational building design for the renovation and

extension of the New York Harbor School that promotes zero energy retrofit principles and workforce development opportunities for the community.

See the full list of Design Challenge Division Winners at *www.solardecathlon.gov/event/*.

Richard King Awardees

Finally, the Solar Decathlon selects two alumni for the Richard King award who have made outstanding contributions to Solar Decathlon competitions, competitors, or the wider clean energy transition in honor of the man who founded the Solar Decathlon in 2002. The 2023 Richard King award winners are:

- Sarah Klinetob Lowe, Solar Program Manager at the Clean Energy Center at Penn College, won the 2023 Outstanding Alumni award. After participating in two Build Challenges, Sarah has served as a team advisor for nine total Solar Decathlon competition cycles, partnering with housing providers to enhance the lasting community impact of the students' work. She has also developed impactful clean energy programs for students and professionals focused on passive house strategies and solar photovoltaic systems for developing communities.
- Edoarda Corradi Dell'Acqua, senior lecturer at the Illinois Institute of Technology, won the 2023 Outstanding Faculty Advisor award. Edoarda has served as a lead advisor to students participating in the Solar Decathlon Design Challenge for nearly a decade, combining her expertise in both engineering and architecture to mentor students as they learn to design better buildings in several masters-level courses dedicated to the competition.

Additional details about the competition may be found on the Solar Decathlon website.



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from LG combines heat pump compressors with a backup electric resistance heater. The Energy Starcertified unit delivers hot water with a 3.75 UEF, and minimizes the need for supplemental electric resistance heat due to its wide operating range (23° F to 120° F ambient temperatures). Features LG ThinO technology. Wi-Fi capability, and smartphone control for ease of scheduling and monitoring. The dual inverter compressor maximizes power in Turbo Mode for a 30% faster heating time than in standard operating mode. The one-direction inlet and outlet piping paired with easy-to-connect wires inside the junction box allow for a quick and simple installation process.



LG Electronics USA

WWW.LGHVAC.COM/RESIDENTIAL-LIGHT-COMMERCIAL



HONEYWELL HOME T10+ SMART THERMOSTAT KITS from Resideo offer additional control over three types of indoor air quality equipment simultaneouslyhumidification, dehumidification and ventilation-in addition to heating and cooling. RedLINK 3.0 technology enables simple set-up. **Resideo Technologies** WWW.RESIDEO.COM



THE WATERGATER VALVE

compresses the air in the water line, making water meter readings much more accurate and ensuring businesses are only paying for the water they use. Certified for NSF/ANSI 61-G & 372 requirements. EnerSavings WWW.ENERSAVINGS.COM

88 WATER SERIES COMMERCIAL **CAST-IRON BOILER** offers a range of 960 to 5,845 MBH. Offered in

steam or water configurations with gas, oil and gas-



gauge. Weil-McLain

WWW.WEIL-MCLAIN.COM

KITTING SERVICES speeds

installs, lowers labor and material costs, reduces job-site waste, and enables better management of construction schedules for commercial projects. The service is targeted for buildings with high repeatable room types such as apartments, hotels and dormitories. Uponor

GO.UPONOR.INFO/KITTING



LEGIONATOR DISINFECTION **TANKLESS WATER HEATER**

reduces the potential for Legionella at the point-of-use using technology developed by the manufacturer, including a built-in ozone generator and quartz

scale-free heating. A set of high-quality quartz tubes heats water to a comfortable temperature when there is water demand. As the water is exiting the unit, ozone gas is injected into the water, which kills the bacteria in water.

The ozone is also carried in the water to the faucets and kills the bacteria present within the faucet valve seats and aerators.

Intellihot WWW.INTELLIHOT.COM

MAXIMUS RESIDENTIAL HIGH-**EFFICIENCY GAS WATER HEATER**

reduces energy use and carbon emissions by up to 36%, NOx emissions by up to 75% and features 100% recyclable packaging. It replenishes hot water up to two times faster than a standard gas tank to provide continuous hot water when demand is high. MaxMode helps deliver an extra

boost of up to 15% more hot water. The unit fits into small spaces such as a closet with flexible venting options and top and side water connections. Models feature built-in EcoNet smart monitoring technology. Built-in 360-degree LeakSense Leak Detection System provides maximum protection; service alerts can be received immediately through the EcoNet app. Rheem Mfg. Co. WWW.RHEEM.COM/MAXIMUS



THE ELECTRIFLEX SERIES **COMMERCIAL ELECTRIC WATER**

HEATERS from Bradford White come in light-duty, medium-duty and heavyduty models. Voltage, phase and kW are field-convertible. Features include Vitraglas tank lining with Microban technology, Hydrojet performance system, fully automatic controls, non-CFC foam insulation and direct heat transfer with immersed elements. Bradford White Corp. WWW.BRADFORDWHITE.COM

EVERLOC+ POLYMER MULTI-**PORT TEES**

include nine closed-end, flow-through and opposing port configurations that function as reducing tees in home-run piping layouts, while minimizing con-



nection points. Designed for use with RAUPEX PEXa pipe and EVERLOC+ PEXa compression sleeves. **REHAU** WWW.REHAU.COM

THE NOBLE FIRE-TUBE COMBI **BOILER** includes

models ranging from 110,000 to 199,000 Btu/ hr. The water connection, venting and gas connection are strategically placed on the top of the unit. It has a smaller footprint than most floormount boilers. Lochinvar



WWW.LOCHINVAR.COM

editor's choice

PERFORMANCE SHOWER LINE from in2aqua features advanced multi-port ceramic disc valve diverters combined with

high-performance thermostatic valves. The in2itiv mounting system saves installation costs and reduces sound transfer to the back wall. The PS- Retro is a complete system with a showerhead and multifunction hand shower. The PS Techno S shower system includes a super-slim slide bar. With a 60° angle, it ensures full body coverage for an enhanced shower experience. Performance shower systems are compatible with any in2aqua CALGreen or max 2.5 gal. per min. showerhead and head spray. The dropless showerhead releases residual water after each use, diminishes deposit buildup and eliminates bacterial contamination. in2aqua

WWW.IN2AQUA.COM



▲ JET-SET ELECTRIC, GAS AND TRAILER WATER JETS from

General Pipe Cleaners slice through grease, sludge, sand, ice, and other "soft" stoppages that many cable drain cleaners can't clear. General's rugged, reliable water jets are excellent for blockages in restaurants, hotels, hospitals, factories, schools, sports arenas, care facilities, shopping centers, waste treatment plants, septic systems,

General Pipe Cleaners
WWW.DRAINBRAIN.COM

WEBSTONE PRO-PAL ADD-

A-DRAIN is a step-saving, lead-free dezincification brass valve used to install a capped hose connection to an appliance or the end

of any line in your choice of MIP, FIP, sweat or press connections. An alternative



to traditional boiler drains, it features a straight design and a compact, quarter-turn handle for more convenient service access.

Nibco/Webstone WWW.NIBCO.COM

PARKWOOD SINGLE-HANDLE PULL-DOWN KITCHEN FAUCET from

Peerless features a curved spout design, lending transitional styling to the kitchen. The three-



function, pull-down sprayer includes POWERinse technology for an extra blast of cleaning power. The high-arc, gooseneck design swivels 360°.

Peerless
WWW.PEERLESSFAUCET.COM

72" WHIRLPOOL RECTANGULAR

BATHTUB from Empava features a 1.2 HP water pump that powers 10 water jets; a spacious 177-gal. capacity (comfortably seats two adults); a double-ended design offers comfort with an arched backrest; and a durable, high-gloss finish that is stain-resistant. *Empava*

WWW.IBATHTUB.COM





▲ SEESNAKE MINI PRO INSPECTION CAMERA from Ridgid features TruSense technology, best in-pipe image, navigation flexibility and digital zoom/pan for enhanced traceability. It is designed to inspect up to 200' of 1½- to 8" pipe with its midflex push cable that can navigate hard 90° bends. The 25 mm digital camera is self-leveling.

Ridgid WWW.RIDGID.COM



▲ ULTONIUM GLASS TANK LINING WITH MICROBAN from Niles Steel Tank provides additional protection against the growth of bacteria, mold and mildew on the surface of the interior tank lining. The lining prolongs the life of water storage tanks by keeping corrosive elements from reaching the steel of the tank and other components. *Niles Steel Tank* WWW.NILESST.COM

ABS UNIVERSAL CLAMPING

RING offers greater flexibility when using decorative drains with bonded waterproofing methods. For use with 4" x 4" center drains (Pro-Series and Premium Series). Allows clamping to standard drain bodies. Works with 2" threaded nipple TNAS or S50 in S Series + FX 65 Series + FCB Series products. *Infinity Drain* WWW.INFINITYDRAIN.COM



PRECIOUS METALS FINISHES

LINE now offers a gunmetal finish—a proprietary blend of genuine gold, silver and platinum—for its kitchen and bathroom sinks. The collection is made up of five designs: Rendezvous and Dreamer kitchen sinks, Reveler bar and prep sink, as well as Bliss and Amara bathroom sinks. *Native Trails*

WWW.NATIVETRAILSHOME.COM

SMARTCUT BKCR2403 CUT-RESISTANT GLOVES offer

GLOVES offer ANSI Level A2 cut protection balanced with extreme dexterity for tasks calling for very fine motor skills. The 18-gauge glove features a lightweight HPPE and glassfiber shell. A polyurethane palm coating delivers reliable abrasion protection and enhanced grip. *Brass Knuckle Safety Products* WWW.BRASSKNUCKLEPROTECTION.COM

▼ PROPRESS VALVES are for use with copper and stainless CTS pipe. They can be used for potable water, hydronic water, and many other applications. Available in a variety of configurations, including ball, check, butterfly, thermostatic balancing and manual balancing, they are offered in two- and three-piece configurations.

Viega WWW.VIEGA.US







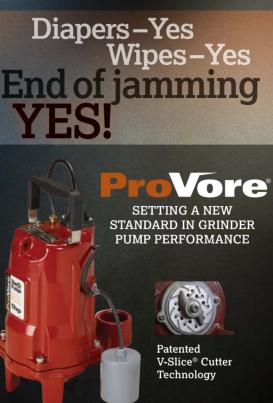
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Strange Days

t seems to me that we are right now at one of the strangest moments the mechanical contracting industry has ever encountered.

For months experts have been predicting a recession that never quite seems to show up. The economy contracted in Q1 and Q2 of 2022, but GDP was positive for Q3 (+3.2%) and Q4 (+2.6%), with slight growth predicted for Q1 of 2023.

This tracks with contractor confidence data from the most recent PHCC survey (see the full story on pg. 3). Plumbing contractors reported a lower future confidence index of 44.2 for Q1 2023 (versus 48.9 in Q4 of 2022). So slower business, but still optimistic.

And why not feel optimistic when you have so much work lined up? Associated Builders and Contractors reported that its Construction Backlog Indicator stood at 8.7 months in March. That reading is 0.4 months higher than in March 2022.

It follows that most contractors in new construction feel they can weather

a recession. Most in service and maintenance feel the type of work they do makes them reasonably recession-proof. More immediate concerns include: finding skilled workers, supply chain worries, high prices and tighter financing. (There's a new report that indicates subcontractors are the ones bearing the brunt of rising prices—you can read highlights starting on the cover.) pushed the housing market into recession, with residential investment contracting for seven straight quarters—the longest streak since the collapse of the housing bubble in the Great Recession. There are, however, signs the housing market is stabilizing.

Want more good news/bad news? Good: thanks to government initiatives like the Inflation Reduction Act

The more you think about the current economic climate the weirder it gets.

The skilled worker shortage isn't going away anytime soon. Higher materials costs are due mainly to inflation, and, ironically, higher borrowing costs are linked to the Fed's effort to fight inflation via rising interest rates. The good news is that the Fed's efforts seem to be working. The annual inflation rate for the United States was 5.0% for the 12 months ended March 2023. A year ago, that rate was 8.5%.

The bad news is that rate hikes have

and the CHIPs Act there's plenty of federal money in the pipeline for infrastructure projects. Bad: all that money is bound to push labor and material prices even higher.

I have two takeaways from the current strangeness. First, demand for housing remains high. Single family construction is falling, but multifamily construction is seeing a steep rise. Repeating layouts (for condos, apartments, etc.) means contractors doing prefabrication and modular work stand to clean up.

Second, some contractors have the combination of expertise, reputation and capacity to take advantage of the new infrastructure work. (You can read about two such contractors in our Book of Giants feature that starts on pg. 18). And some do not. Whenever you have an industry where some companies are making big money while others are treading water it means one thing: consolidation. Given how desperate everyone is for skilled workers, larger companies buying up smaller ones seems like the natural course of things.

But our best guesses are just that: guesses. There's a war in Europe the likes of which hasn't been seen since 1945. There are politicians playing chicken with the National Debt Ceiling. Someone somewhere right now could be eating a bat or a monkey or who knows what that could trigger another pandemic. Man makes plans and the gods, they laugh. All the economic data in the world isn't as important as knowing your work and knowing your customers.

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