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Design-Build Comes to Cannabis Cultivation

■ BY STEVE SPAULDING OF CONTRACTOR'S STAFF

With the spread of marijuana legalization across the country, the cannabis cultivation industry has seen explosive growth. According to industry researcher IBISWorld, the market size of the medical and recreational marijuana growing industry in the US has grown, on average, 34.3% per year between 2017 and 2022.



A typical layout of a cannabis cultivation facility.

For maximum yield, consistency of end product, and reasons of security, most cannabis is

► Turn to Design-Build, page 10

PHCC Legislative Conference: Expertise on Capitol Hill

■ SPECIAL TO CONTRACTOR

FALLS CHURCH, VA — The Plumbing-Heating-Cooling Contractors–National Association (PHCC) welcomed PHCC members, chapter executives, and corporate partners to Washington, DC, May 16-17, to meet with lawmakers and educate them on energy, economic, and workforce policies that are important to the industry and consumers.

Before heading to Capitol Hill as *industry* experts, members first heard from *political* expert **Charlie Cook**, who was the keynote speaker for the event. Cook spoke on the current political landscape,

► Turn to PHCC, page 14



Photo 13935821 © Songquan Deng | Dreamstime.com

OSHA, Trade Groups, Unions Partner to Protect Against Trench Hazards

■ SPECIAL TO CONTRACTOR

WASHINGTON, DC – The US Department of Labor's Occupational Safety and Health Administration today signed an agreement with an alliance of trade organizations, labor unions and industry stakeholders to better protect people who do trenching and excavation work.

The two-year agreement between OSHA and the Partners for

► Turn to OSHA, page 18

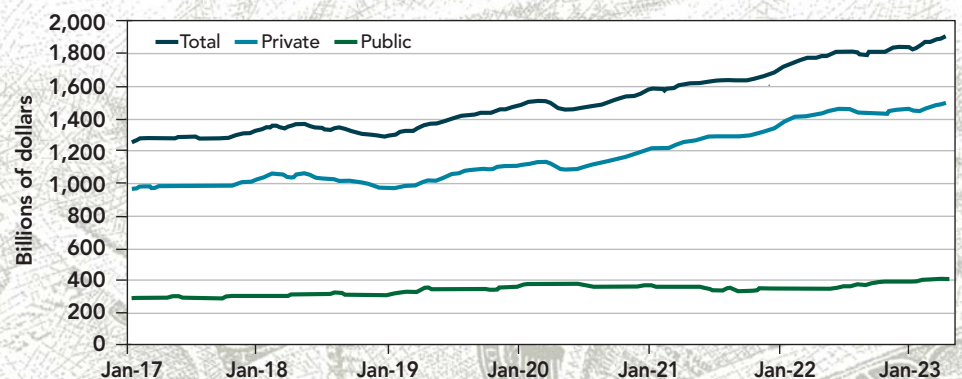


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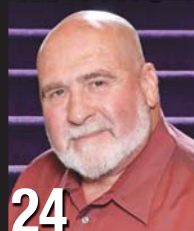
Construction Spending

(Seasonally Adjusted Annual Rate (SAAR))



Source: U.S. Census Bureau, June 1, 2023

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Drain cleaning can open up a world of possibilities.

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Rasmussen Mechanical is Racing Across Iowa For Mental Health

■ SPECIAL TO CONTRACTOR ■

COUNCIL BLUFFS, IA — Rasmussen Mechanical Services boiler technicians are assembling a team to ride across Iowa in the 50th annual RAGBRI race as part of an effort to bring awareness to mental health in the construction industry. This week-long event is a challenging cycling journey across the state of Iowa, spanning 500

➤ Turn to Rasmussen, page 16



Boiler makers replacing the tubes and tube sheet in an industrial boiler.

ABC's Construction Backlog Indicator Holds Steady in May

■ SPECIAL TO CONTRACTOR ■

WASHINGTON, DC — Associated Builders and Contractors reported today that its Construction Backlog Indicator remained unchanged at 8.9 months in May, according to an ABC member survey conducted May 20 to June 7. The reading is 0.1 months lower than in May 2022.

Backlog in the infrastructure category ticked up again and has now returned to May 2022 levels. On a regional basis, backlog increased in every region but the Northeast.

➤ Turn to ABC, page 12



Photo 24231280 © Lubastock | Dreamstime.com

RIDGID® Collabs with Unplugged Brewing Company on 100th Anniversary Brew

■ SPECIAL TO CONTRACTOR ■

ELYRIA, OH — RIDGID®, a part of Emerson's professional tools portfolio, is celebrating its 100th anniversary with RIDGID Wrenched 100 IPA, a limited-edition anniversary beer. The brew, created in collaboration with Unplugged Brewing Company, pays tribute to the expert tradespeople who work hard and know how to unplug.

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The specialty craft beer is available for purchase in select Northeast Ohio stores and online for direct-to-home shipping in 41 states through December.

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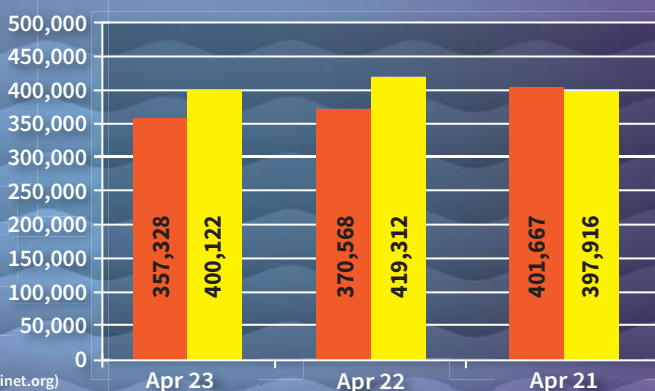
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U.S. SHIPMENTS OF RESIDENTIAL STORAGE WATER HEATERS

Apr 2021 - Apr 2023

■ Residential Electric
■ Residential Gas



SOURCE: AHRI (ahricommunications@ahrinet.org)

In Brief

High 5 Plumbing has been named one of the best plumbing repair companies by ColoradoBiz Magazine. It's their second award from the publication after being named a top family-owned business by the publication earlier this year.

SCB (Systems Certification Body), part of The **IAPMO Group**, has been accredited by the ANSI National Accreditation Board (ANAB) to a new scope, ISO 13485:2016, Medical Devices — Quality Management Systems, a significant milestone for the certification body. ISO 13485 is a stand-alone QMS standard derived from the internationally recognized and accepted ISO 9000 quality management standard series.

Harbor Freight Tools has announced that it will be opening a new store in Watertown, WI. The new store will be located at 701 S Church Street and is expected to open this summer. An official opening date will be announced closer to opening. Construction has already begun at the location.

Chicago Faucets has relaunched the CFNow! quick ship program to help simplify the ordering and shipping process. The process can offer remarkable delivery speeds for the most popular products including make-to-order products. Customers now have the option to choose CFNow! 24-Hour or CFNow! Same Day shipment for commercial plumbing faucets and parts.

ServiceTitan announces the appointment of Dave Sherry as its Chief Financial Officer. Prior to joining ServiceTitan, Dave held CFO positions at QuintoAndar and Lightspeed (vertical software for retail/restaurants). In this new role, Dave will work closely with ServiceTitan's executive team to shape and strengthen business strategies.

UMC welcomes Clarence Clipper to the Facility Services Group as Facility Services Director. Clipper will be responsible for developing and maintaining a scalable service deliverable that will streamline UMC's processes and support our growth within the Facility Services Group. Clipper has been integral to the facilities and industrial space and held leadership positions that have propelled businesses forward for 18 years.

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Top Stories

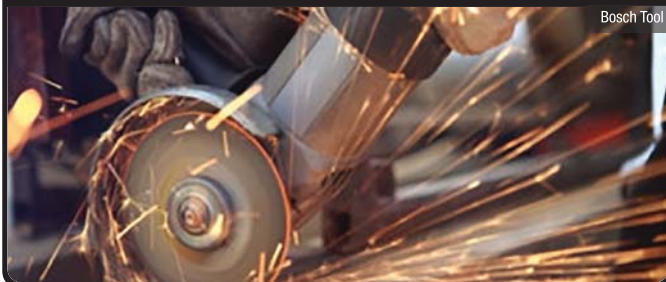
- Built Environment Workforce Report
- 4 Critical Considerations When Scaling a Plumbing Business
- PHCC Educational Foundation Appoints Daniel Quinonez as New Executive Director
- Oatey Co.'s William H. Harvey Location Named One of Nebraska's Safest Companies

Videos & Media Galleries

Burst Frozen Pipes Gallery



Top 10 OSHA Violations



Plumbing Urban Legends



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

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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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Interactive Plumbing Trainer College Project Wins Attention, Accolades

SPECIAL TO CONTRACTOR

Four students at Elizabethtown College in PA recently won accolades for a brilliant idea that materialized in the form of a “plumbing trainer” designed to advance understanding of basic plumbing practices in an educational, classroom setting.

“ETown” College mechatronics engineering student **Steven Klinefelter**, class of '25, said that of all the possible ideas they had to pursue for the college project—a requirement for graduation—they settled on the plumbing trainer.

The earliest ideas for the trainer began at another school—Elizabethtown High School, only a mile from the college campus. Teachers for the high school’s construction curriculum asked if the college could develop a training aid. The project request ended up being a good fit for the college’s community-based program, and for presentation during the “SCAD” event; that is, the college’s Scholarship and Creative Arts Day.

The college’s SCAD day is an annual presentation that celebrates the difference students can make with their ideas and creativity. Each spring, select students demonstrate academic research in their respective disciplines, while others showcase talents through recitals and a juried art exhibit. “It also includes senior projects, and projects from other majors,” explained Klinefelter.

“The students who were involved poured their skills and creativity into [the plumbing trainer] from the beginning,” said **Randy Doxzon**, director of plumbing/pipefitting and apprentice resource development for Associated Builders and Contractors (ABC), Keystone Chapter, based in Manheim, PA. “It was a real pleasure helping them work on it.”

Involved with the project were students **Olivia Kurtz**, engineering, **Paige Parsons**, engineering, architecture and math. **Toma Yasuda** (all three members of the class of '24) and Klinefelter.



(Left to right) Toma Yasuda, Steven Klinefelter, Ryan Kiscaden, Olivia Kurtz (top), and Paige Parsons.

A higher institution, community-outreach project includes backflow preventer, water filtration, drainpipe, utility sink.



With care, the college students designed closely consulting IAPMO’s 2019 Uniform Plumbing Code (UPC) to validate the components and their precise arrangement within the trainer model.

Industry Partners

Klinefelter explained that the trainer was conceived as both a conceptual

and hands-on device for students to learn and practice basic plumbing.

Paige Parsons, who’s worked on her

family’s dairy farm for more than a decade said that, in a way, she went into the project with some “plumbing” experience of a different form—that is, Holstein milk piping, distribution and storage—and she was glad to be involved.

The manufacturer’s representative firm for Watts, Warminster, PA-based Vernon Bitzer Associates (VBA)—already a valued industry partner with the Keystone chapter of ABC—learned about the project and eagerly offered to help. VBA managers and Watts Water Technologies donated a wide variety of plumbing technologies for use in the project’s development.

Truly Unique

“That’s where I learned about the project and was eager to help in any way that I could,” said **Ryan Kiscaden**, manager of sales enablement at Watts and avowed “trade enthusiast.” Kiscaden explained that he is an alumni of both schools, Elizabethtown High, and Elizabethtown College, and that those connections helped to make the project truly unique.

Doxzon, whose experience and intensity are focused on improving trade skills, said that “thousands of students acquire valuable, hands-on experience at ABC chapters each year. In my experience, this project was 100 percent unique. The trainer has the potential of becoming invaluable for basic plumbing training in a broader, national fashion.”

And Doxzon should know. His responsibilities at ABC also include curriculum development. He routinely works with ABC and allied groups who conduct career days and career fairs for students and the construction industry.

Kurtz and Yasuda explained that the plumbing trainer consists of an in-line 10-micron sediment filter housing, backflow preventer and a PVC drainpipe with connections for a p-trap and sink.

➤ **Turn to Interactive, page 58**

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Danforth Awards Memorial Scholarship

BUFFALO, NY – John W. Danforth Company, one of the largest mechanical contractors in the northeast, and the Mechanical Contractors Association of America (MCAA) recently announced the recipient of the 2023 Reilly Family Memorial Scholarship. The national scholarship, worth \$5,000, was established by Danforth and the Mechanical Contracting Education and Research Foundation in tribute to the memory of members of the Reilly family, who have led Danforth for more than 40 years.

The 2023 scholarship recipient is **Brock Schulz**, who graduated from the University of Nebraska in May with a degree in Mechanical Engineering. The announcement was made at the MCAA23 annual conference in Phoenix.

MCAA is a nationwide industry association serving the needs of approximately 2,600 firms involved in heating, air conditioning, refrigeration, plumbing, piping, and mechanical service. The organization provides its members high-quality education programs and materials to help them attain the highest level of managerial and technical expertise. Danforth is a founding member of MCAA.



Brock Schulz accepts his scholarship award at the MCAA ceremony.

The 2023 scholarship recipient is Brock Schulz, who graduated from the University of Nebraska in May with a degree in Mechanical Engineering.

Advancing the Industry

"The scholarship reflects the ongoing commitments of Danforth and the Reilly family to advancing our industry," said **Kevin "Duke" Reilly**, Danforth Chairman. "It's exciting and fulfilling to

support the next generation of industry leaders, like Brock and other young professionals, as they begin their careers."

After graduating, Schulz, a native of Omaha, is beginning his career as a Project Engineer at MMC Contractors,

an MCAA member company, where he served as an intern since 2021. He is a member of the Mechanical Contractors Association of Omaha, a professional organization representing mechanical contractors of all sizes, and served as the chapter's fundraising chair.

The Reilly Family Memorial Scholarship celebrates the family's dedication, passion and contributions to the mechanical contracting industry. Duke Reilly's father, **Wayne**, joined Danforth in 1955 and became President in 1978 and later CEO in 1993. Duke and his brother, **Patrick**, joined the company in 1982, followed by their brother, **Emmett**, the following year. Like their father, Emmett and Patrick went on to serve as company President before their deaths in 2011 and 2015, respectively. Duke Reilly was named the company's CEO in 2002, a position he held until 2018, and he remains the company's Chairman. Together, the members of the Reilly family served a combined 130 years at Danforth.

Eligibility

To be eligible for the scholarship, a student must be a junior in a four-year program or a senior in a five-year program and majoring in construction management, mechanical engineering, architectural engineering or a discipline related to mechanical construction, mechanical service, or plumbing contracting. The student must also have demonstrated exceptional scholastic achievement and leadership skills; interest in developing a career in the mechanical, mechanical service, or plumbing industry by working part time or as an intern for an MCAA member for at least one summer or one term; and characteristics or achievements that distinguish them as a nominee worthy of the scholarship.

Founded in Buffalo in 1884, Danforth has more than 1,000 employees across a geographic footprint that includes operations in Buffalo, Rochester, Syracuse, and Albany, New York, Columbus, Ohio, and Burlington, Vermont.

[Editor's Note: in 2021 the John W. Danforth Co. was named CONTRACTOR's Contractor of the Year.]



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Design-Build Comes to Cannabis Cultivation

► **Continued from page 1**

cultivated via Controlled Environment Agriculture (CEA)—large, sealed buildings that foster a microclimate ideal for growth. The same system is used for most other single cycle, single harvest crops (such as ornamental flowers). Such growing facilities also typically include areas for harvesting, processing, and packaging.

The urban-gro Value Proposition

urban-gro is a design-build construction company founded in 2014 with the goal of making itself into a one-stop shop for any client that walked in the door, but with a focus on serving the (then) new cannabis industry. It developed a growth plan that worked to acquire the expertise and capacity to make that vision come true. As a part of that effort, the company found

Sam Andras.



Part of a pumping station at a cannabis cultivation facility.

Sam Andras comes from a family of builders. He studied to become an architect, eventually starting his own design and construction companies in 2001. In 2021 his two companies were acquired by urban-gro. He now works for the urban-gro as VP of Business Development.

“[My companies] added a level of mechanical, electrical, and plumbing services to the team,” Andras says. Other acquisitions involved architecture, construction and fire protection. “For the CEA sector, we added integrated cultivation design and equipment procurement along with some post occupancy services. That whole turnkey

solution was something that really excited me about the opportunity.”

A Matter of Trust

Any firm doing design-build needs to build a special rapport with their clients. To have design, pre-construction, construction, commissioning all handled by a single firm means having all your eggs in one basket. You need confidence in that firm’s ability to get the work done on time, on budget, and to your specifications. However, contracting to build a cannabis cultivation facility presents an added barrier to developing that trust.

“The [cannabis] industry, especially when I got into it back in 2012, 2013, it was like the wild, wild west,” Andras explains. “Designs were done by

jurisdictions that won’t,” Andras says. “So, if you’re not allowed to dump it, do you want to then purify it and reuse it, or do you want to put it in evaporators and get rid of it? Wastewater can vary from jurisdiction to jurisdiction.”

Southern Sky

Southern Sky Brands is a farm-to-patient focused medical cannabis company located in Canton, MS. Southern Sky Brands trusted urban-gro with the design and installation of the company’s state-of-the-art irrigation system in its 64,000 square foot cultivation and processing facility in Mississippi. It has been up and running since October of 2022.

“The reliability and performance of the system is unparalleled in the industry,” **Stan Martin, P.E., Co-Founder**

From pre-construction through commissioning, urban-gro is offering a turnkey solution to the burgeoning industry.

‘consultants’ who were basically growers who had done garage grow. Now they were laying out entire buildings for people. The processes were not really conducive to ensuring that you’re meeting the needs of a client.”

urban gro now has a proven track record of delivering for their clients, even when having to navigate a patchwork of different rules and regulations spreading across 34 states. The needs of each client are different. By meeting those need and exceeding expectations the company has been able to grow as the industry has grown.

Unparalleled Regulation

That complicated patchwork of regulation across the country adds another layer of complexity to the work urban-gro is doing.

One key regulation concern: what are you going to do with your water? If you dehumidification system can remove 90% of the water from a building, well, where does that water go?

“There are jurisdictions that will let you dump that water, and then there’s

and Director of Southern Sky Brands says. “The precision dosing system compliments our superior genetics to produce consistent, best-in-class yields. If you’re looking for a top-quality irrigation system, I would highly recommend partnering with the team at urban-gro that can turn design into reality.”

Southern Sky Brands’ cultivation facility was designed with eight flower rooms with dual-tier benchings supporting 20,000+ plants, two veg rooms housing 5,400 plants, and one mother room that holds 730 plants.

To ensure optimal growth conditions, a drip irrigation system is employed throughout the facility. This system includes a robust water treatment setup that utilizes a Reverse Osmosis (RO) system. Furthermore, the facility boasts two storage tanks, with a combined capacity of 21,000 gallons, ensuring a sufficient water supply as it uses over 11,460 gallons a day.

The nutrient batch tanks are strategically positioned to support two zones per room, optimizing nutrient distribution and plant health. To maintain



Cultivation facilities require sophisticated water management systems.

precise environmental conditions, an integrated control system is deployed, linking lighting, HVAC/R, and irrigation. This advanced system diligently monitors and regulates temperature and humidity levels within each room, providing an optimal environment for plant growth.

The facility includes airlocks workers come and go through, “air showers” that remove pests before they can infiltrate the crops, as well as drying rooms and processing rooms. And everything is built to be as water- and energy-efficient as possible.

Like any other kind of agricultural facility, these buildings are using fantastic amounts of water. Since growing is done mainly with lamps not sunlight, they also consume huge amounts of electricity. As a result, extracting even the tiniest efficiencies out of the system becomes hugely important over the lifetime of the project.

“In order to survive in this industry, you have to be efficient in everything that you’re doing,” Sam Andras says. Because the market is so highly competitive, “You have to have efficient mechanical systems and electrical systems in order to in turn drive operational cost down as low as possible, and in turn try and maximize your profits.” **C**

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ABC's Construction Backlog Indicator Holds Steady in May

► **Continued from page 3**

ABC's Construction Confidence Index reading for sales and staffing levels moved lower in May while the reading for profit margins increased. All three readings remain above the threshold of 50, indicating expectations of growth over the next six months.

"During a period of ongoing tumult associated with major bank failures, a near-miss debt ceiling crisis and shifting monetary policy, nonresidential construction backlog has remained remarkably stable," said ABC Chief Economist **Anirban Basu**. "At nearly nine months, backlog is essentially unchanged from a year ago and the previous month.

"Moreover, contractor confidence remains elevated despite massive increases in cost of capital and growing concerns over the nation's commer-

Note: The reference months for the Construction Backlog Indicator and Construction Confidence Index data series were revised on May 12, 2020,

to better reflect the survey period. CBI quantifies the previous month's work under contract based on the latest financials available, while CCI measures contractors' outlook for the next six months.

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. **C**

Backlog in the infrastructure category ticked up again and has now returned to May 2022 levels.

cial real estate segment, with firms indicating sufficient demand and associated pricing power that will keep profit margins steady or better," said Basu. "Contractors also expect to bring on additional talent over the next six months, an indication of ongoing industry expansion.

Construction Confidence Index

Response	May 2023	Apr 2023	May 2022
CCI Reading			
Sales	60.1	61.7	60.9
Profit Margins	55.1	53.5	50.0
Staffing	61.7	64.2	62.8
Sales Expectations			
Up Big	6.9%	9.0%	9.3%
Up Small	46.9%	47.0%	47.5%
No Change	29.7%	28.3%	21.9%
Down Small	13.1%	13.3%	20.2%
Down Big	3.4%	2.4%	1.1%
Profit Margin Expectations			
Up Big	6.9%	6.0%	3.3%
Up Small	29.1%	31.9%	33.3%
No Change	45.1%	36.7%	29.0%
Down Small	15.4%	20.5%	29.0%
Down Big	3.4%	4.8%	5.5%
Staffing Level Expectations			
Up Big	4.6%	7.8%	4.4%
Up Small	48.6%	50.0%	53.0%
No Change	37.1%	34.9%	32.8%
Down Small	8.6%	5.4%	9.3%
Down Big	1.1%	1.8%	0.5%

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Construction Backlog Indicator

	May 2023	Apr 2023	May 2022	1-Month Net Change	12-Month Net Change
Total	8.9	8.9	9.0	0.0	-0.1
Industry					
Commercial & Institutional	9.2	9.2	9.1	0.0	0.1
Heavy Industrial	7.2	8.4	8.8	-1.2	-1.6
Infrastructure	9.3	8.0	9.3	1.3	0.0
Region					
Middle States	7.5	7.0	8.1	0.5	-0.6
Northeast	8.0	9.1	9.6	-1.1	-1.6
South	10.9	10.7	9.6	0.2	1.3
West	9.1	8.4	8.2	0.7	0.9
Company Size					
<\$30 Million	8.2	8.1	8.2	0.1	0.0
\$30-\$50 Million	9.1	6.8	11.0	2.3	-1.9
\$50-\$100 Million	9.7	13.0	10.8	-3.3	-1.1
>\$100 Million	14.1	11.9	13.2	2.2	0.9

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PHCC Legislative Conference: Expertise on Capitol Hill

► Continued from page 1

lessons from the 2022 midterms, and predictions for 2024.

After hearing from Cook, the group was briefed by PHCC Legislative Affairs Director **Mark Valentini**, PHCC Vice President of Regulatory Affairs **Chuck White**, and a panel of other industry lobbyists. Panelists included **Jim Colura**, Vice President and Director of Government Affairs for the National Energy & Fuels Institute (NEFI); **Steve Rossi**, Vice President of Advocacy for the American Supply Association (ASA); and **Robert Wolfer**, Manager of Government Relations for Bradford

Gas Association (AGA); and **Christopher Lindsay**, Vice President of Government Relations for the International Association of Plumbing and Mechanical Officials (IAPMO – PHCC Supporting Sponsor).

After a quick stop for a picture on the Capitol steps, they headed to their respective meetings. In total, 71 PHCC members from 27 different states had 111 meetings with elected officials and their staffs. At a closing roof-top reception that evening, members spoke in-depth about how much they valued the in-person meetings on Capitol Hill, in addition to getting to



Association members pause for a photo on the steps of the Capitol during the PHCC Legislative Conference.

The conference was a chance to meet with lawmakers and educate them on energy, economic, and workforce policies.

White Corp (PHCC Strategic Partner).

That evening, the group attended a reception in the historic Caucus Room of the Cannon House Office Building. This reception was held in conjunction with the Heating Air-conditioning and Refrigeration Distributors International (HARDI) and the Air-conditioning, Heating and Refrigeration Institute (AHRI). Members of Congress stopped by to network with members of PHCC and these other industry groups.

The next morning during breakfast, attendees heard insights from a second Washington Insider panel consisting of **Craig Brightup**, Chief Executive Officer of the Brightup Group LLC; **Matt Kiessling**, Senior Director of state affairs for the American

participate in the rest of the sessions as a part of this two-day event.

"The 2023 PHCC Legislative Conference was an extremely valuable event for all who attended," said PHCC—National Association President **Dave Frame**. "Besides the very beneficial one-on-one meetings with legislators, the conference was a great opportunity for PHCC members to connect with each other and with others in the industry supply chain. Together, we are able to accomplish so much more on behalf of our members, the industry, and society."

The conference was sponsored by PHCC Corporate Partner Federated Insurance. Next year's event will be May 21-22, 2024. [C](#)



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Rasmussen Mechanical Racing Across Iowa For Mental Health Awareness

► **Continued from page 3**

hundred miles and over 16,000 feet in elevation changes.

The industrial boiler technicians will be dropping their welding torches and jumping on their bikes to raise money for the Construction Industry Alliance For Suicide Prevention (CIASP). According to the Centers for Disease Prevention, construction occupations have the highest rate of suicide, as well as the highest number of suicides across all occupational groups. The suicide rate in the construction industry is 4 times greater than the national average.


"When you look at the statistics about mental health in our industry



the drive to take on a challenge like this and I think it is a great opportunity to eliminate some of the stigma surrounding mental health in the construction industry," said **Brian Rasmussen**, CEO of Rasmussen Mechanical Services

and suppliers to collect donations for each mile the team rides.

"I am grateful for the opportunity to make a difference and hopeful that each of us will be able to complete the 500 mile race," said **Luke Skutnik**, Boiler Service Supervisor. "It's a good cause and with temperatures expected to be in the high 90's the week of the race, it will definitely test our willpower"

To learn more about how to help support CIASP, visit preventconstructionsuicide.com or reach out to CIASP directly at 815/806-4908. All donations are tax deductible and help spread awareness about suicide prevention and mental health to save lives throughout the industry. 

The race is part of an effort to raise awareness about suicide rates in the construction industry.

it is shocking. I am humbled that we have technicians working here with

Rasmussen Mechanical Services is working with their network of vendors

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OSHA, Trade Groups, Unions Partner to Protect Against Trench Hazards

► **Continued from page 1**

Safe Trenching and Excavation Operations Alliance will unite the North American Excavation Shoring Association, the Association of Equipment Manufacturers, the National Utility Contractors Association, the Associated General Contractors, the Common Ground Alliance, the International Union of Operating Engineers and the Laborers' International Union of North America to address some of the construction industry's most hazardous work.

Deadly 2022

"Sadly in 2022, we saw a dramatic and disturbing increase in the number of workers who died in trench collapses," said Assistant Secretary for Occupational Safety and Health **Doug Parker**. "We know that awareness and vigilance saves lives. Joining with the Partners

for Safe Trenching and Excavation Operations Alliance is an important collaboration to help ensure that industry employers are taking the precautions required to keep every worker who enters or works near a trench safe."

The alliance will help small- and medium-sized employers protect work-

share information on how to improve controls and equipment to reduce worker exposures to hazardous levels of noise and silica.

Plenty of Work to be Done

OSHA will partner with the alliance and its members to develop guidance

will also create and offer podcasts and webinars focused on best practices in trenching and excavation. In addition, the alliance will encourage industry stakeholders to incorporate equity and worker voice into its outreach and activities to help connect as many workers as possible with important worker safety and health information.

Through its Alliance Program, OSHA works with organizations such as trade and professional associations, labor unions, educational institutions, community and faith-based groups, and government agencies to share information about OSHA's initiatives and compliance assistance resources with workers and employers, and educate workers and employers about their rights and responsibilities.

To learn more about OSHA, visit www.osha.gov. 

The new partnership will help small- and medium-sized companies keep their employees safe.

ers from hazards related to trenching, excavation and shoring. The initiative will also focus on the four leading construction industry hazards, namely falls, caught-in or caught-between, struck-by objects and electrocution. In addition, alliance participants will

in multiple languages and deploy resources, such as safety articles and alerts, worksite tours, educational sessions and focused discussions on common hazards in trenching and excavation work and agency priorities and initiatives. Alliance partners

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AIA/Deltek Architecture Billings Index Indicates Rebound in May

WASHINGTON, DC — Architecture firms experienced a rebound in billings in May after a downturn in April, according to the latest Architecture Billings Index (ABI) from the American Institute of Architects (AIA) and Deltek. The index score for May was the highest it has been since September 2022. Inquiries into new projects and design contracts also increased this month, reaching their highest levels since February.

The billings score for April increased from 48.5 in April to 51.0 in May (any score above 50 indicates an increase in firm billings). Firms also reported that inquiries into new projects accelerated to 57.2 from 53.9 the previous month. Further, the value of new design contracts also moved up to 52.3 in May from 49.8 in April.

Modest Improvement

"The modest improvement in overall demand for architectural services that we saw last month is encouraging news", said AIA Chief Economist **Kermit Baker** Hon. AIA, PhD., "However, there continues to be variation in the performance of firms by regional



AIA

location and building specialization."

Billings improved at firms located in the South for the second consecutive month in May, while they were essentially flat at firms located in the Midwest, following six months of growth. However, billings continued to decline at firms located in both the West and Northeast, where scores have been below 50 since last fall.

By firm specialization, business conditions softened further at firms with a multifamily residential specialization in May, falling to the lowest level in two years. Billings also declined for the ninth consecutive month at firms with a commercial/industrial specialization. On the other hand, business conditions improved for the second month in a row at firms with an institutional specialization, as they reported their strongest growth since last year.

Visit AIA's website for detailed information about this, and past billing index reports. 

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RIDGID® Collabs with Unplugged Brewing Company

► Continued from page 3

Unplugged is an Elyria-based craft brewery and worked closely with the RIDGID team to create the bold and steady brew—just like the brand that inspired it. “Our goal was to say thank you to the trade professionals who over the past 100 years have put their trust in our tools every day on jobsites around the world,” said **Becky Brotherton**, director of brand and marketing, RIDGID for Emerson. “Having a small, hardworking brewery in our own backyard allowed us to create something that was truly special.”

The specialty craft beer is available for purchase in select Northeast Ohio stores and online for direct-to-home shipping in 41 states through December. To purchase online, visit: rivalrybrews.com/products/ridgid-wrenched-100. Enjoy responsibly.

The limited-edition craft beer celebrates trade professionals and the RIDGID® legacy.

Unplugged Brewery

“RIDGID is an iconic name, recognized around the world, and we’re proud to help them celebrate this milestone anniversary,” said **Carlos Lopez**, owner of Unplugged Brewery. “As a small business owner, it’s been an honor to create this brew for



A limited edition RIDGID beer tap is also available to purchase for use or display.

a company that celebrates its customers in this special way.”

In addition to the RIDGID Wrenched 100 IPA, a limited edition RIDGID beer tap is also available

to purchase for use or display. The tap is manufactured at RIDGID global headquarters in Elyria, Ohio, on the same production lines used to produce the brand’s legendary wrenches. It fits a 3/8”-16 body thread or can sit upright for display in a home or shop. Commemorative pint glasses, t-shirts, signs, and hats are also available at ridgidgear.com.

100 Years of Innovation and Trust

In 1923, the Ridge Tool Company invented the modern straight pipe wrench, introducing it to the world under their brand, RIDGID. Since then, every step forward has been taken with the tradesperson in mind. Today, RIDGID’s pipe wrench design is the best-selling pipe wrench in the world, and many of the wrenches that were sold back in the 1920s and 30s are still in use today.

This year, RIDGID is celebrating 100 years of designing and building innovative tools trusted on jobsites around the world and handed down from generation to generation. To commemorate the occasion, RIDGID is spending 2023 celebrating the trades, their impact on our world, and the brand’s legacy.

To learn more about the 100th anniversary, individuals are invited to visit RIDGID.com/100 or their social channels—@RIDGIDTools on Facebook, @RIDGIDTools on Instagram, and @RIDGIDTools on TikTok.   

Niagara Opens New Global Headquarters

FLOWER MOUND, TX — Niagara announced it has opened a new state-of-the-art global headquarters located at 300 Old Gerault Road in Flower Mound, Texas. The facility houses an expansive distribution center spanning over 117,000 square feet, geared toward serving Niagara’s US customers in a more efficient and streamlined manner.

Advanced Tools and Tech

The new building also features a testing facility with advanced technology and tools that will measure the performance and features of toilets, showerheads, and other plumbing products. Innovation, design, and research have propelled Niagara’s growth and ability to win more than 20 industry and EPA WaterSense® awards in the last decade.

The new location includes a full product showroom that displays a variety of Niagara’s award-winning products including Niagara’s Pro line and the newly-launched Phantom One Piece. The showroom is an opportunity for wholesalers, architects, builders and plumbing professionals to explore the different features and benefits of products.




“Moving into this new cutting-edge facility and distribution center will ensure Niagara is best positioned



The new HQ in Flower Mound, TX.

to continue delivering on our unwavering commitment to creating innovative products and ensuring prompt lead times,” said **Carl Wehmeyer**, executive vice president at Niagara.

A skilled team of contractors from Cadence McShane worked alongside project architect Meinhardt & Associates to design the building for TIG Real Estate Services, Inc.

In the coming months, Niagara will host an open house for customers. To learn more about Niagara’s products and how to request a tour of the new facility, visit www.niagaracorp.com.   

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PHCCCONNECT2023 to Help Contractors Make Progress

FALLS CHURCH, VA — For plumbing and HVACR contractors who are eager to discover proven, practical ideas to meet their business goals, the Plumbing-Heating-Cooling Contractors—National Association (PHCC) is providing insights, solutions,

and value at its annual Conference and Product & Technology Showcase—PHCCCONNECT2023—to be held this year on Oct. 25-27 in Cleveland, Ohio.

PHCC—National Association President **Dave Frame**, CEO of Bob

Frame Plumbing Services, Inc., in South Bend, Indiana, is excited that attendees will be exploring these opportunities with the people who share their passion and purpose. “Every year, this is your best chance to connect with like-minded professionals

who know your challenges, are eager to share their own solutions, and truly care not only about the future of their business but about the future of this industry.”


The Industry's Best Educational Programming

Attendees can expect more than 20 targeted educational sessions on topics plumbing and HVACR contractors want most, from business management and leadership, to sales and marketing, to soft skills and technology. “These relevant sessions will result in key takeaways contractors can implement to make a significant difference in their business,” says Frame.

Attendees can expect more than 20 targeted educational sessions.

One of PHCC's highly anticipated keynote speakers, Coach **Ken Carter**, is ready to push attendees to their full potential during his address, “Growth Begins at the End of Your Comfort Zone.” This successful author, business owner and educator—and the inspiration behind the popular movie *Coach Carter*—will share his hard-hitting advice about accountability, integrity, and leadership ... and his firm belief that “greatness is defined by the service you give to others.”

And, back by popular demand, Economist **Connor Lokar** of ITR Economics will offer an accurate, proven, analytical approach on “Piercing Through the Noise” concerning the status of today's economy and will provide attendees with clear direction on how to maximize revenue and profit growth.

For more information—including the conference schedule, session descriptions, registration, sponsors, and hotel rates and reservations—visit phccweb.org/connect. Register by July 31 to take advantage of the Early Bird Rates. 

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by Al Schwartz
PLUMBING CONTRACTOR



Skilled Trades Centers – Up and Running

In last November's column, I told you about Douglas Greene and his idea of getting a brick-and-mortar facility for teaching the skilled trades to high school and college students. As I said in that column, Douglas is not one to be put off when confronted with the intractable "powers that be" as regards trade training and education. So it was that Douglas invited me to attend the ribbon cutting ceremony for the first "Skilled Trades Center" at Evergreen High School in Vancouver, Washington.

An Idea Whose Time has Come

On May 17 I, among many others, stood inside the first of what will be many Skilled Trades Center buildings. The ceremony was brief and had the usual speakers when such a facility is inaugurated, but the one man who started it all spoke eloquently of the vision and need for such a facility. You can listen to his comments (12 minutes) here: <https://youtu.be/ZnIaC-bziCT8>.

The project has come to fruit because of the dedication of Douglas Greene, and others, whom he motivated to



Opening ceremonies with Douglas Green doing the ribbon cutting. He is flanked on his right by his wife, Heather and on his left by Daniel Orrantia, Principle of the Evergreen School.

On May 17 I, among many others, stood inside the first of what will be many Skilled Trades Center buildings.



An interior view of the new Skilled Trades Center. The program is open to anyone, and every student who wants to can apply to join the program.

help bring the idea of trade education back to high schools and junior colleges. All this coming to fruition with not a little effort and a lot of money on his part. It was with a great deal of pride and satisfaction on my part to see the facility was fully functional and stocked with tools and materials, much of which had been donated by various manufacturers such as Home Depot, Harbor Freight, DeWalt and other big-name companies, to provide a true working environment for the students.

David and Goliath

Recently, there was an article in this magazine touting the UA training program. [*Rebuilding American Infrastructure—and its Skilled Construction Workforce*, May, pg. 35 – Ed.] As far as it went, there can be no doubt that the United Association has the best plumbing and pipe-fitting training program in the industry... full stop. However, the article didn't stop with the quality of the training. The author went on to imply (paraphrasing here) that any plumbers who were non-union were grossly underpaid to the point of living in poverty and were not educated enough to be fully trained journeyman. Nonsense, I know, but that is what the article stated, in almost those words.

What was not mentioned was the politics involved with joining the union. The fact that once you join, politics becomes a fact of life. Not kissing the right ring can mean even an excellently skilled and trained journeyman will sit on the bench if he crosses the local business agent. If playing politics is your thing, and you are good at it, by all means consider the UA. As stated above, their training is first rate—the butt kissing isn't.

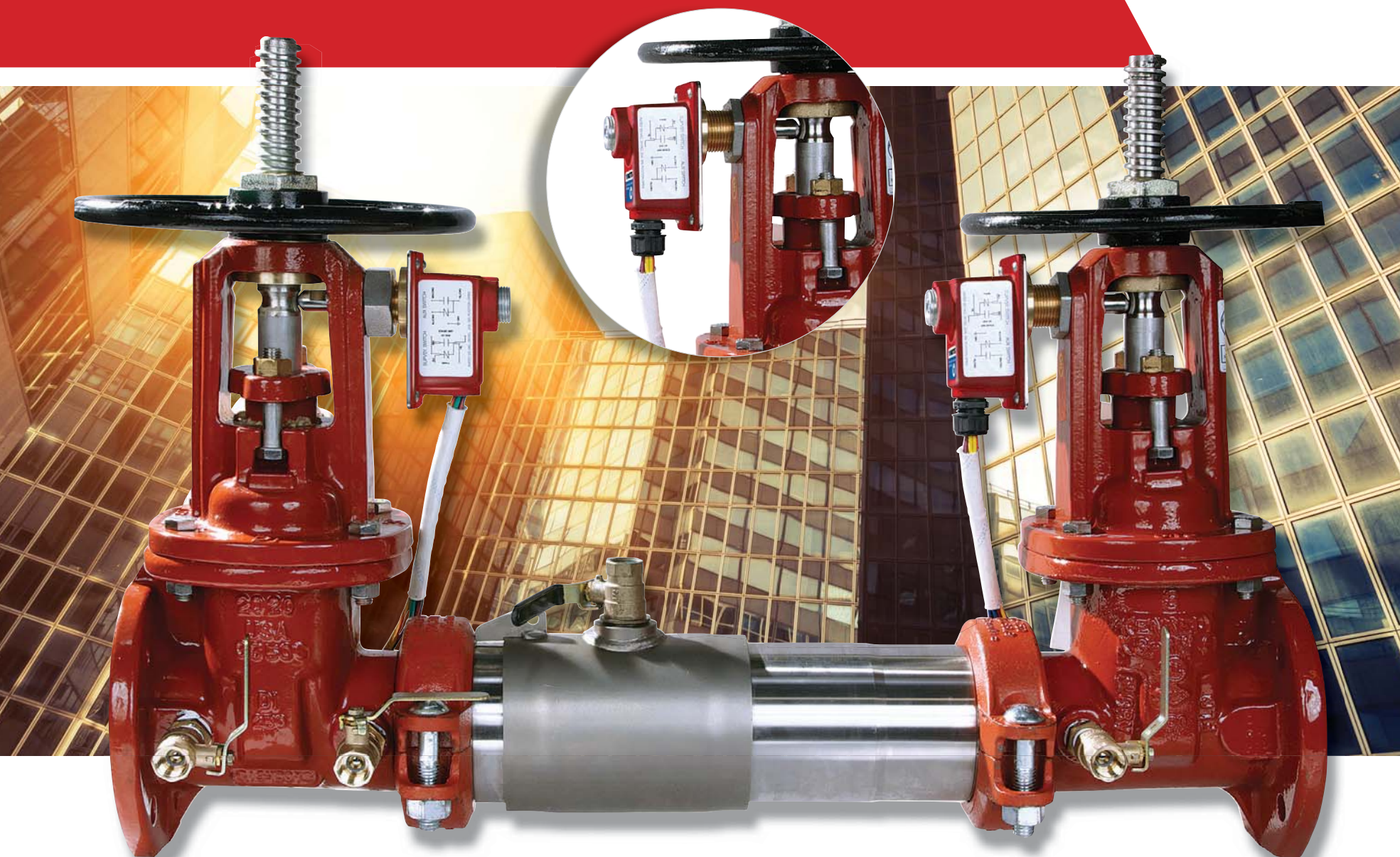
Trade Education for Everyone

The beauty of the Skilled Trades Center idea is that it is egalitarian. The program is open to anyone, and every student who has the desire and has, or thinks they have, the skills can apply to join the program. Remember shop class in High School? Think bigger! I spoke with a couple of the

► **Turn to Skilled, page 53**

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The Lucrative Side of Drain Cleaning

BY JOHN MESENBRINK OF CONTRACTOR'S STAFF

In this “post-Covid time,” contractors are now more than ever looking to diversify their portfolio in a competitive plumbing market. Plumbers are continually receiving requests to clean drains, and they know how many jobs they are referring to other contractors. That’s why turning to drain cleaning could be a good revenue generator. But what are some things contractors need to know and/or can do to head in that direction?

Now is the time to look into adding drain cleaning to your plumbing services.

Most plumbers that do any service work at all have closet augers and a small machine of some sort. So, it depends on how much business and what range of services they want to incorporate. “We recommend that drain cleaners have five items in their truck. A closet auger, a small drain machine, a medium drain cleaning machine, a large drain cleaning machine, a high-pressure water jetter and a camera system,” says Dave Dunbar, National Sales Manager, General Pipe Cleaners.

In addition, the basic rule of thumb is that contractors should have more options as opposed to less, because



A service technician cleans a drain.



Compact size and portability can be important concerns when selecting a piece of drain cleaning equipment.

in the drain cleaning world one size does not fit all. A cable designed for 1½- to 2- inch lines will either

break or cause damage in a larger line. For any specific job, the proper cable size will be necessary in order to enjoy

the functional limits of the machine. Also, until the contractor surveys the scene, they can’t be sure what machine or combination of machines will be necessary to correct the problem. For all these reasons, contractors need to err on the side of more machines as opposed to less.

Although this additional equipment will take up more space in their truck, it will enable contractors to handle most emergencies, and charge whatever the going rate for drain cleaning is in their area.

However, these advertised fees are not the main source of income from adding this equipment to their truck, says Dunbar. When you begin taking service calls for drain cleaning, you open up a world of possibilities for additional business. “One example would be pipe replacement of re-lining jobs, which can be so lucrative that I’ve met plumbers who have put multiple drain cleaning trucks on the road just to gather leads for replacing pipes,” says Dunbar. “The fact is that most professional drain cleaning companies don’t make the bulk of their money from the locally advertised drain cleaning fees, but rather from pipe replacement and re-lining. It can be a compelling reason for getting into the business,” says Dunbar.

Buyer Need to Know

Contractors should take the same precautions when purchasing drain cleaning equipment as they would with any other kind of capital investments. “This equipment will make them a lot of money if it is effective and durable,” says Dunbar.

According to Dunbar, when it comes to snake-style drain cleaning machines, for example, contractors should keep in mind that it is the cable that does all of the work. The machine itself is just a delivery system for the cable. Buying the highest quality cable, or snake, will pay off in safety, effectiveness and durability. The same concept holds true when purchasing high pressure water jetter hose, and

➤ **Turn to Lucrative, page 36**

Safer, Stronger

General Pipe Cleaners’ Flexicore Cable is the strongest, safest, and because its cables are safer, stronger, and more durable than the competition, this will save the contractor time and money. Also, the Gel-Rod push rod for the Gen-Eye pipe inspection system is designed to be more durable than any other on the market. Contractors can push it further down the pipe, and it is less likely to kink or break, which can cause loss of income and missed opportunities.

Because drain cleaning equipment is being inserted down a septic sewer,

it needs to be cleaned and maintained after every use. If a contractor commits five minutes per machine for preventative maintenance after every job, his/her equipment will last significantly longer. “For example, we know a contractor in Indianapolis who has had our large snake-style machines since 2003, and by consistently putting five minutes of preventive maintenance into each machine after every use, he is still using the original cables,” says Dunbar.

Lastly, most rental companies offer drain cleaning equipment for the hour, day or week. “If contractors only have

and occasional drain cleaning job to perform, it may be more cost effective to rent,” says Dunbar. “However, if the problems are chronic, it probably pays to buy your own equipment. If you own your own drain cleaning machines, you can integrate them into your preventative maintenance program, which is always superior to emergency management.”

General has independent sales reps that offer training and service after the sale, in addition to the dozens of training videos available free on www.drainbrain.com.

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By Steve Spaulding of CONTRACTOR's staff

Meet some great companies manufacturing the quality tools and materials contractors need, and doing it right here in the USA.

Imagine being a manufacturer in the United States these past few years. When the pandemic hits most of your employees can't work remotely because so much of the work is hands-on. Staff and supply chain problems grind production to a crawl. As things start getting back to normal, inflation starts to bite. Then, just when it looks like inflation is getting under control, recession fears start to loom. How the heck are you supposed to make plans more than even one quarter out?

While the economic environment may be uncertain, it's not like business is bad. According to the Industrial Production Index, manufacturing activity increased by 10.5% in April 2023, compared to April 2022. New orders for manufactured durable goods in April were up by \$3.1 billion or 1.1 percent from March 2023, according to the US Census Bureau.

Also, it looks like there are good things on the horizon. The federal CHIPS and Science Act means that anyone manufacturing anything to do with the production of semiconductors is in for a windfall. Likewise, the Inflation Reduction Act—also passed last year—means money in the pipeline for anyone manufacturing for infrastructure or clean energy projects.

Both those pieces of legislation are reinforcing an economic trend that's been going on for several years: reshoring. Instead of moving production overseas, more and more US companies are deciding to return to US-based facilities. The war in Ukraine and macroeconomic trends in China (a rising middle class alongside a cooling overall economy) are acting to make reshoring more attractive.

So let's take a look at a few American manufacturers. Every one of them has their own story of challenges overcome, of innovation, adaptation, and delivering quality to their customers.

★ AB&I Foundry



AB&I Foundry is a US manufacturer of cast iron soil pipe and fittings used in commercial construction for drain, waste, and vent (DWV) plumbing systems. When you work with AB&I, we make you part of the family. Our team cares about every customer at every level, finding solutions to help you succeed. AB&I products are Made in America and set the standard for quality and durability. When buying from AB&I, contractors can be confident they are receiving quality products from people who care. AB& Foundry: Your True Industry Partner.

www.ABIFounry.com

★ Anaco-Husky



The Husky High-Performance Heavy Duty Coupling by Anaco is specified by more engineers than all other brands combined. Manufactured at their state-of-the-art facilities in Corona, California, no other coupling is more dependable, durable, or built to a higher standard of quality. From the specially-designed gasket made from Neoprene to the Series 300 stainless steel shields, bands and screws — only the finest, most corrosion-resistant materials are good enough for the Husky. Available in 1½"–15" sizes, there's a Husky for virtually every application.

www.Anaco-Husky.com

★ A. O. Smith



A. O. Smith's Cyclone Mxi is designed, engineered and assembled in Mccombe, SC. The Mxi design is the latest advancement for the industry leading Cyclone family of condensing gas water heaters. The Cyclone Mxi models are all Energy Star qualified products, delivering efficiencies of up to 98 percent. Additionally, the Cyclone Mxi's exclusive advanced electronic control with built-in diagnostics, is iCOMM compatible and network ready for remote monitoring. Other features of the Mxi model include maneuverability and ease of installation due to

its lightweight design, a helical coil heat exchanger that maximizes heat transfer for optimal service life and the PermaGlas glass-lining process that provides superior tank protection against corrosion.

www.aosmith.com

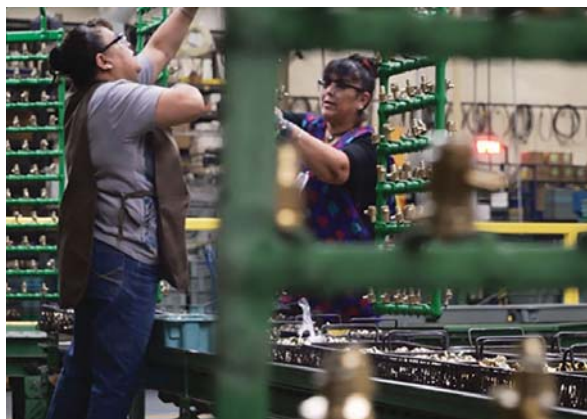
★ Bradford White Water Heaters



From its start more than 140 years ago Bradford White's goal has been to deliver high-quality, superior products made by American craftspeople. The company remains committed to that goal in 2022 and proudly employs over 1,800 people at their American facilities to manufacture Built to be the Best™ commercial and residential water heaters that lead the industry in performance, reliability, efficiency, safety and innovation.

www.bradfordwhite.com

★ Brass Craft



Since its founding in 1946, Brasscraft Manufacturing Co. has been proud to be a high quality and innovative American manufacturer where products are engineered in the USA and assembled by skilled professionals that provides the quality assurance the professional plumber looks for. Look for the DMA flag logo (Designed, Machined and Assembled in the USA) on BrassCraft brand water connectors, water stops, gas connector and appliance connectors - they are designed in the USA, machined at one of our plants - Lancaster, Texas; Corona, California or Thomasville, North Carolina, and assembled by our American work force. When you buy product manufactured in America, you help to keep American businesses strong and support domestic job growth at the same time. BrassCraft, This is Our Craft.

www.brasscraft.com

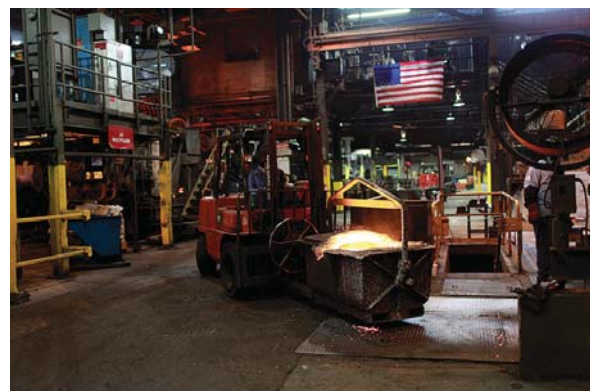
★ Channellock, Inc.



Channellock, Inc., is investing in a 35,000 square foot expansion of its finished goods warehouse and distribution facilities. The project will bring the company's total presence in Meadville to more than 260,000 square feet of production and distribution space. With more than 370 full-time associates, Channellock, Inc., is among the largest employers in Crawford County, PA.

www.channellock.com

★ Charlotte Pipe and Foundry



Charlotte Pipe and Foundry Company is the nation's top manufacturer of cast iron and plastic pipe and fittings. As a leader in innovation and quality, they offer the industry's broadest range of standard and specialty DWV products. They are the only manufacturer that offers a system of ABS, PVC, CPVC, cast iron, FlowGuard Gold, ChemDrain, ReUze and RePVC pipe and fittings. All Charlotte Pipe products are proudly made in the USA. Charlotte Pipe is headquartered in Charlotte, NC, has seven plant locations across the United States, and employs 1,350 associates. Combining modern technology with 115 years of craftsmanship and experience, Charlotte Pipe and Foundry has a proud legacy of commitment to the industry and its customers.

www.charlottepipe.com

★ Cherne Industries



Part of the Oatey Co. family of companies, Cherne Industries, is the industry-leading manufacturer of test plugs and testing equipment for residential, commercial,

industrial and municipal piping systems. In 1953, Cherne Industries created an innovative inflatable device for stack testing. Cherne's pneumatic product offering expanded to include testing, maintenance and repair equipment for residential, commercial, industrial and municipal systems. Acquired by Oatey Co. in 1990, Cherne Industries maintained its focus on system testing, maintenance and repair with an unrelenting commitment to quality.
www.oatey.com/brands/cherne

★ Chicago Faucets



Chicago Faucets has been America's leading manufacturer of commercial faucets for over 110 years. With manufacturing, research, and development facilities located solely in the United States, the company produces products that are made with an unwavering commitment to quality. The Chicago Faucets' foundry, manufacturing, assembly, and distribution facilities are located within a 350 mile radius of their corporate office. This provides a high degree of control of product quality and an ability to deliver quickly to any location in the United States. On July 12, 1901 Chicago Faucets founder, Albert C. Brown, took his savings and opened a small shop in the near West Side of Chicago. Today his spirit lives on in the hundreds of Chicago Faucets employees who every day seek to meet customer needs with innovative, high quality products. Whatever your requirements may be, Chicago Faucets offers standard and made-to-order products that are designed to meet any commercial application.
www.chicagofaucets.com

★ Daikin



The Daikin Texas Technology Park (DTTP) is a new state-of-the-art business campus that consolidates many of Daikin's HVAC manufacturing and logistics facilities across North America. Daikin invested over \$400 million to construct the facility on a 500 acre site just outside of Houston, TX. With over four-million operational square feet available, which is equivalent to 74 football fields with end zones, the DTTP supports the design, engineering and assembly of a wide array of energy-efficient heating and cooling products.
www.daikincomfort.com

★ Elkay Manufacturing

The Elkay Manufacturing Company began as a vision of Leopold Katz and his son Louis on the North side of Chicago back in 1920. Founded with the goals of manufacturing the highest quality sinks and providing the best service possible, the company began to thrive. Today, Elkay's products, designs and innovations continue to lead the industry, such as the Perfect Drain (pictured), where they eliminated the flange to create a seamless surface that's more attractive and hygienic. With more than 3,500 employees worldwide, they are proud to be America's number-one selling stainless steel sink company. Over the years the company has expanded to include the manufacture of faucets, water coolers, drinking fountains and bottle fillers. A cabinetry division achieved Elkay's goal of being a more complete supplier of kitchen and bath products for both residential and commercial installations.
www.elkay.com



★ General Pipe Cleaners



Clogged drains demand "The toughest tools down the line." And General Pipe Cleaners - a fourth-generation, family-owned business, based proudly in the USA - has remained a leading manufacturer of high quality drain-cleaning and pipe inspection equipment for nearly 90 years! Company breakthroughs began with Flexicore cable, a radical design introduced in the 1940's. With its patented process of wrapping spring wire tightly around a wire rope core, General's innovation surpassed all competitive products - remaining the standard for drain cleaning snakes ever since. Trusted industry standards - like the long lasting Super-Vee, best selling Speedroooter 92, and unique Kinetic Water Ram drain cleaners - followed. Jet-Set water jets slash through grease, sand and ice, and the Gen-Eye video pipe inspection systems and Hot Spot digital pipe locator feature everything to trouble-shoot 1-1.2" through 10" lines - including Wi-Fi capability. Surveys confirm: multiple generations of plumbers and drain cleaning professionals call General their preferred brand.
www.drainbrain.com

★ Goulds Water Technology



For the 43 million Americans who rely on water wells for their drinking water, Goulds Water Technology, a Xylem brand, is committed to helping communities in need gain access to safe, clean water. At the Goulds Water Technology facility in Auburn, New York, 200 dedicated workers build nearly 2,500 residential and wastewater pumps every day with pride and a pledge to quality. Our employees and partners also make a positive impact one project at a time through Xylem Watermark, our corporate citizenship program.
www.goulds.com

★ Greenlee®

For over 150 years, Greenlee® has been designing, making, assembling and packaging many products here in the U.S. The American-born and owned company is based in Rockford, Illinois where we proudly support our local manufacturing workforce as well as at our facilities in Genoa, Illinois, Louisville, Kentucky, Elyria, Ohio, and South Haven, Mississippi. Greenlee utilizes a combination of traditional hand craftsmanship and state-of-the-art equipment to produce high quality tools. Elyria, Ohio is our home for manufacturing Step Bits and Knockout punches and dies among other tools for professionals in the electrical trades.
www.Greenlee.com



★ Harris Products Group



A leader in serving brazing and soldering needs for HVAC/R and plumbing professionals, the Harris Products Group has manufactured quality products for more than 110 years. A Lincoln Electric company, Harris operates plants in Mason, Ohio, Gainesville, Ga. and Winston-Salem, N.C., where it produces brazing and soldering

alloys (including Sterling and Bridgit) that are available in rods, solid wire and rings; air-fuel gas equipment; oxy/fuel equipment; and MAP gas. Its products are available through a network of wholesalers.

www.harrisproductsgroup.com

★ InSinkErator



Based in Racine, Wis., InSinkErator, a business unit of Emerson Electric Co., is the world's leading provider of food waste disposers. InSinkErator also produces instant hot water dispensers and organics recycling systems, which divert food waste from landfills to anaerobic digesters for recycling into renewable energy. Racine architect John W. Hammes invented the disposer in 1927 and founded InSinkErator in 1938. Eighty years later, the company still calls the USA home, has operations in over 80 countries with 1,300 employees, and offers a high-performance line of disposers called Evolution Series®, with advanced sound, grind and anti-jam technologies. Worldwide, InSinkErator advocates for disposers as an environmentally responsible alternative to landfilling of food waste.

www.insinkerator.com

★ Kohler



Kohler enameled cast iron kitchen sinks are hand-crafted in the global plumbing company's Kohler, Wisconsin, headquarters. Enameled cast iron is a premium material that offers exceptional durability and strength, and lasting beauty. Available in many shapes and sizes, along with various installation styles, Kohler enameled cast iron provides a functional and stylish option for any kitchen. Sterling's exclusive Vikrell material is manufactured in the plumbing brand's Alabama plant. Vikrell offers consumers a durable, beautiful product and for trade professionals, it is a great solution as it is lightweight and easy to install. Many Sterling Vikrell baths and showers are multi-piece units, allowing easy maneuvering around the jobsite and some models offer caulk-free installation. With many sizes

and styles available, Sterling Vikrell baths and showers provide a solution for any bathroom layout and decor.

www.kohler.com

★ Laars® Heating Systems



Laars® Heating Systems is based in Rochester, N.H., where a team of 168 dedicated American tradespeople manufacture and distribute top-rated products used in residential and commercial space heating, radiant floor heating, volume water heating and the industrial process markets. The company's innovative solutions for heating applications are powered by advanced design and technology and offer durability, performance and efficiency.

www.laars

★ Lochinvar

Lochinvar's heritage of excellence dates back to 1939, when Walter Vallett, Sr. founded the Walter Vallett Company. For generations, employees and customers have enjoyed growth and energy-saving innovations from Lochinvar. Today, Lochinvar continues its leadership position in the industry and is proud to offer products designed, engineered, and assembled in the USA.



The company is a leading producer of energy-efficient boilers, water heaters, pool heaters, commercial package systems and other sustainable options. Lochinvar focus solely on serving their customers and offers them a product portfolio that delivers unmatched quality, performance and application flexibility. Lochinvar has a solution for every water heating need.

The image represents Lochinvar's most recent product launch, CREST with Hellcat™ Combustion Technology.

www.lochinvar.com

★ Nexus Valve



Established in 1994 in Indianapolis, Indiana, Nexus Valve was one of the earliest innovators of specialized hydronic components and packaging. Currently, Nexus Valve is the largest domestic manufacturer of balancing valves and hydronic specialty products thanks to American workers taking pride in assembling American made products. Nexus Valve offers millions of valve and valve kit configurations, all designed, assembled, and tested at our world headquarters in Fishers, Indiana. We take great pride in providing value to our customer's projects in the U.S., and are excited to expand our remarkable American made products to overseas markets. To Nexus Valve "Made in America" means accountability of quality made products for customers we care about. Our extensive family of flow control and related products for the commercial and residential hydronic HVAC industry stands alone for quality, selection, and value. So, we don't just take pride in our innovative designs, we build them too.

www.nexusvalve.com

★ Nibco



Headquartered in Elkhart, Indiana, NIBCO operates manufacturing plants throughout the United States in Arkansas, Texas, Wisconsin, Virginia, Massachusetts, Georgia and Indiana, and offers more than 56,000 SKUs. Since 1904, NIBCO has been a leading provider of valves, fittings and flow control products for commercial, industrial and institutional construction, marine markets, as well as residential and irrigation markets. NIBCO-branded products are manufactured using high-quality materials and innovative processes and technologies to improve product performance and quality. For every high-quality valve or fitting made at NIBCO, each is made with pride by the hundreds of NIBCO associates who work there.

www.nibco.com

★ Niles Steel Tank



For 122 years, Niles Steel Tank has provided industries around the world with the highest quality water storage and heating equipment. As the premier manufacturer and supplier of custom pressure vessels, process tanks, glass-lined water storage tanks and OEM vessels for major manufacturing operations in automotive, the compressor and press industries, air conditioning, water filtration, chemical and pharmaceutical companies and a host of other industries. In 2020, the company launched a fully integrated facility to expand their production of American-made stainless steel products for the hydronics, chemical and petrochemical, dairy and food processing, brewing and winery, pharmaceutical and air products industries.

www.nilesst.com

★ Oatey Co.



Oatey Co. was founded in 1916 in Cleveland, Ohio by L.R. Oatey. In 1947, Oatey established its first manufacturing plant and corporate headquarters on Berea Road. After a century of incredible progress and many company acquisitions, Oatey has changed with the times, meeting the needs of its customers and manufacturing products designed to deliver quality, build trust and improve lives. More than 100 years and counting, Oatey is still over-delivering on that promise. Because of this evolution, Oatey is recognized today as a leading manufacturer of high-quality plumbing products.

www.oatey.com

★ ProVent



ProVent Single Stack DWV Sovent type PVC Fittings are completely made in America along with other PVC fittings that form the PVC DWV single stack system. It's called the new "System of Choice" over conventional waste, vent and revent methods for multi-story hotel- and apartment-type construction. The system helps contractors save precious time and money when plumbing these types of buildings. ProVent and ProSet products have been creating unique time and labor saving product solutions for over 36 years. All ProVent, ProSet and Trap Guard products are American-made for plumbing and heating contractors.

proventsystems.com

★ REHAU



REHAU's multifaceted production center located in Cullman, Alabama creates products for several industries including plumbing, automotive and refrigeration. In 2021, REHAU employees celebrated the 25th anniversary of the plant's opening. Since its establishment in 1996, the facility has expanded numerous times to its current footprint of about a million square feet with nearly 800 employees. Cullman operates as two separate plants – one specializes in automotive painted exterior components, the other built in 2006 focuses on PEXa piping for plumbing and radiant heating systems and gaskets for household appliances.

www.rehau.com

★ Rheem



Founded in 1925, Rheem is the only North American company that produces heating, cooling, water heating, pool/spa heating and commercial refrigeration products. Today the company's portfolio of premium brands includes Rheem®, Raypak®, Ruud®, Eemax®, Richmond®, as well as commercial refrigeration brands Russell®, Witt®, ColdZone® and Kramer®, which are part of the Heat Transfer Products Group (HTPG®) division. Rheem is headquartered in Atlanta, Georgia and has five manufacturing facilities across the United States. As part of the company's "Greater Degree of Good" initiative, Rheem has committed to reducing greenhouse gas emissions by 50 percent and achieving zero waste to landfill in the company's global manufacturing operations by 2025. Rheem is dedicated to developing innovative solutions to deliver just the right temperature while saving energy, water and supporting a more sustainable future.

www.rheem.com

★ Ridgid



Introduced in 1923, the Ridgid pipe wrench has been proudly made in America since day one. The iconic tool is trusted for its strength and dependability by professionals who use it for some of the most demanding commercial, industrial and energy jobs. The wrench casting is made in Erie, Pennsylvania, shipped to company headquarters in Elyria, Ohio, for assembly; and then sent to the Cambridge, Ohio, distribution center for customer delivery. To date, millions of wrenches have been shipped from the factory to more than 140 countries, and is just one of many Ridgid tools passed down from generation to generation.

www.ridgid.com



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The Statewide Midstream Water Heating Program is funded by California utility customers and administered by Southern California Gas Company (SoCalGas®) and supported by the state's other investor-owned utilities, Pacific Gas and Electric Company (PG&E®), Southern California Edison Company (SCE®), and San Diego Gas & Electric Company (SDG&E®), under the auspices of the California Public Utilities Commission through a contract awarded to DNV Energy Services USA Inc. Program funds, including any funds utilized for rebates or incentives, will be allocated on a first-come, first-served basis until such funds are no longer available. This program may be modified or terminated without prior notice. Customers who choose to participate in this program are not obligated to purchase any additional goods or services offered by DNV Energy Services USA Inc. or any other third party. The selection, purchase, and ownership of goods and/or services are the sole responsibility of the customer. **None of the above-mentioned investor-owned utilities (IOUs) make any warranty, whether express or implied, including the warranty of merchantability or fitness for a particular purpose, of goods or services selected by customer. None of the IOUs endorse, qualify, or guarantee the work of DNV Energy Services USA Inc. or any other third party.** DNV Energy Services USA, Inc. is the authorized contractor responsible for implementing the program through 4/30/24. Eligibility requirements apply; see the program conditions for details.

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★ Rinnai



Rinnai's new 300,000 square foot state-of-the-art manufacturing facility in Griffin, Georgia is now open and ready for production. The company will start by producing inventory for the RE Series tankless water heater which will be available for purchase in August 2022. After production ramps up for the RE Series, the plant will begin to expand into the production of other Rinnai branded products. The facility establishes Rinnai America as the only tankless water heater company to manufacture units in North America and is the full realization of a dream of Rinnai's Japan-based ownership, to have such a facility in North America, first expressed in 2014.

www.rinnai.us

★ RWC



As an RWC brand, SharkBite manufactures its EvoPEX push-to-connect fittings and PEX-B pipe in Cullman, Alabama, as it provides hundreds of manufacturing jobs to the Cullman community. The majority of its new SharkBite Max fittings are either made or assembled in Cullman, too. From start to finish, SharkBite is able to control the quality of its products, offering professionals a more efficient method for rough-in plumbing compared to traditional methods.

www.rwc.com

★ Sloan Valve



Sloan's AER-DEC® is an integrated sink system with a soap dispenser, faucet, hand dryer, and sink basin all designed to work together as one touch-free and highly efficient system. The sink helps maximize space and allows for a cleaner design by moving the soap dispenser and hand dryer to the deck. The all-in-one sink system is made at a Sloan facility in Mesa, AZ.

www.sloan.com

★ Stellar



Founded in 1990 in Garner, Iowa, Stellar has grown into a prominent manufacturer of top-quality work trucks, trailers and service truck and van accessories. With operations spanning across multiple U.S. locations, Stellar takes pride in being a 100% employee-owned and -operated company. Today, Stellar has achieved international recognition and is the No. 1 choice for productivity solutions in numerous markets. With a reputation for quality and reliability, Stellar continues to meet the diverse needs of customers worldwide.

www.stellarindustries.com

★ Tyler Pipe



Tyler Pipe and Coupling is an American Manufacturer of cast iron soil pipe and fittings used primarily in commercial construction DWV plumbing systems.

This sustainable and environmentally safe product is made from nearly 95% post-consumer scrap metal and is recycled at the end of its long service life. That's Tyler Tough.

www.TylerPipe.com

★ Uponor



An award-winning manufacturer of PEX-a pipe, Uponor operations in Apple Valley, Hutchinson, and Lakeville, Minn., provide nationwide distribution for the industry's most trusted PEX pipe for residential and commercial domestic water, hydronic distribution, and radiant heating and cooling systems. As the pioneer in crosslinked polyethylene production, Uponor was the first to bring PEX-a to North America nearly 40 years ago, and the company has been proudly innovating ever since with products, systems, services, and solutions that bring greater installation efficiencies, job-site safety, and profitability potential for contractors along with superior longevity and performance for building owners and end users.

uponorpro.com

★ Viega



Viega LLC, a leading manufacturer of pipefitting installation technology, employs more than 600 people in the United States. Its headquarters are in Broomfield, Colo., and its manufacturing plant is in McPherson, Kan. It has distribution centers in Kansas, Nevada, Georgia and Pennsylvania, as well as seminar centers in Colorado and Nashua, N.H. Viega manufactures a variety of products in the U.S., including ProPress® and ProPress G couplings and elbows, MegaPress® and MegaPressG elbows and PureFlow® PEX pipe and fittings.

www.viega.us

★ Woodford Manufacturing



The Woodford Model 19 freezeless, anti-burst residential wall faucet prevents burst pipes — even if the hose is attached in freezing temperatures. The Woodford Model 19 outdoor faucet, with its easily identifiable oval handle, features a patented pressure relief valve that prevents pressure build-up and burst tubes. For just a few dollars more than a freezeless faucet, the homeowner can rest easy knowing their faucet won't burst in freezing weather, even if they forget to remove the hose. This product is made in the USA and is backed by a 5 year Limited Warranty.

woodfordmfg.com

★ Wright



Since 1927, Wright has been manufacturing professional-grade wrenches, sockets, drives and other hand tools by hardworking Americans for the industrial, contractor and MRO markets. Located in Barberton, Ohio, Wright innovates, engineers and forges tools that exceed industry expectations for working professionals. With the latest technology, all-American ingenuity, and a commitment to professional grade tools, Wright is ready to take on the future.

www.wrighttool.com 



The Lucrative Side of Drain Cleaning

► **Continued from page 26**

pushrod for video inspection systems. Buy quality merchandise for the parts of the equipment that suffer the most wear and tear.

Also, when it comes to jetter technology, for example, a little “Did You Know?” couldn’t hurt. “After a minimum level of psi has been achieved by the high-pressure water jetter, we find that gallon per minute flow is more important than additional pressure. There have been several manufacturers marketing 4000 PSI machines to the drain cleaning industry lately, but our opinion is that this is a marketing initiative that does not actually improve effectiveness,” says Dunbar.

New Tech

Flexible Shaft technology has entered the drain cleaning industry over the past five years, and is becoming more and more accepted. These devices utilize a high-speed wire rope spinning within a plastic sheath, with a chain knocker or cutting tool at the front end. These machines were initially used to prepare and mill pipe in preparation for a re-lining process, but contractors quickly found that their high-speed cutters could



Flexicore cable from General Pipe Cleaners.

effectively remove roots, paper, grease and scale. Because they are lighter and safer than snake style machines, they have gained popularity, especially with contractors who already do pipe re-lining.

This is another example of the synergy that is building between drain cleaning services and pipe repair. “Because there is a tremendous amount of fresh water leaking into the sewage treatment system, the Environmental Protection Agency has recommended that plumbers repair or replace all leaky pipes. This will lead to a trillion-dollar opportunity for the industry over the next 20 years,” says Dunbar.

And speaking of COVID. Remember the great toilet paper shortage? “During the COVID-19 crisis, toilet paper was



If the problems you are facing are chronic, it probably pays to buy your own equipment.

often unavailable for long stretches. During that time, people used whatever was available. These substitutes

contributed to an increased number of drains being clogged,” says Dunbar.

And yes, flushable wipes will continue to generate business for professional drain cleaners and plumbers. Couple that with the fact that over the past several years municipal codes have been enacted that require the use of low volume flush toilets, we have our perfect storm, so to speak. Since most of the infrastructure in this country was designed and built on the assumption that every flush would deliver more than three gallons of water to the system, every decrease in the amount of volume per flush sands particulates a shorter and shorter distance down the pipe. In addition, the country’s sewage treatment infrastructure is getting older, leading to more subsidence and corrosion, which is disrupting the flow of sewage and resulting in more drain cleaning opportunities.

So yes, for both environmental and economic reasons, now is the lucrative time to add drain cleaning to your plumbing services. **C**

“We Love STEM Day” Teaches Students about STEM’s Role in Manufacturing

ELYRIA, OH — RIDGID hosted its third annual “We Love STEM Day” in June for local students in grades three through eight. The event is designed to expose young learners to the real-world roles science, technology, engineering, and mathematics (STEM) play in their everyday lives and potential future careers.

“It was exciting to see the curiosity and interest students had in learning about how STEM integrates into what we do in manufacturing,” said **Rose Hitchens**, event chair and chapter lead, RIDGID Women’s Impact Network for Emerson. “We were inspired by the creativity each student brought to the day’s activities and look forward to the mark they will leave on the world.”



Young participants in RIDGID’s We Love STEM Day.

Students participated in a variety of hands-on activities, including making balloon cars, robotic hands, pinwheels, water filtration systems and solar-powered cars. Each activity allowed students to learn about the importance of mechanical engineering, electrical engineering, renewable energy and natural resources in manufacturing.

RIDGID is a proud supporter of local programs and education-based initiatives throughout Lorain County, including the Elyria school makerspaces that reinforce STEM learning. The company also partners with current and future trade professionals.

Visit emerson.com/professionaltools for more information. **C**

Legacy Service Partners Expands Network

TAMPA, FL — Legacy Service Partners, an industry leading group of residential HVAC, plumbing, and electrical services businesses in 16 states, has partnered with two Pittsburgh area home service companies and a third in Cape Coral, Florida to grow its presence in both states.



Legacy has added McVay Plumbing, Heating & Cooling, owned by Michael Arendosh, and Mister Sewer and Gator Drain and Plumbing, owned by Jason Daugherty, to its platform of residential service companies.

As part of the acquisitions, McVay and Mister Sewer will combine operations along with McVay's previously acquired Arendosh Services business to create a new, rebranded, singular platform in the Pittsburgh area. The combined business will be a market leader in sewer and drain installations, maintenance and repair and intends to offer additional home services through a combination of organic and inorganic growth initiatives.

Trusted Service

"It's an honor to work with Michael, Jason and each of their respective leadership teams" said Legacy CEO and Co-Founder Rob Millock. "Mike and Jason care deeply about their employees and the communities they serve, and their passion for our industry is infectious. We look forward to our role in helping them continue to provide a trusted service to the Pittsburgh and Cape Coral areas through our collaborative efforts."

Mister Sewer was created with the goal of providing specialized sewer and drain repair and installation on demand and in a fair and honest manner. Daugherty's other home service business, Gator Drain and Plumbing, was started in 2016 and provides plumbing maintenance and repair services to areas across southwest Florida.


"Legacy's back-end financial, human resources and marketing support is a boon for Mister Sewer and Gator," Daugherty said. "We're certain that this partnership spells out great things

for the future of our companies."

McVay has provided plumbing services in the greater Pittsburgh area for more than 30 years and has worked to provide residents with cutting edge plumbing technology and reliable customer service.

"McVay is thankful to have a partner like Legacy Service Partners on its side," Arendosh said. "We know they have our best interests in mind and we're sure to benefit from their general business support. Legacy's strong business development resources and

processes will help McVay continue to scale our growth trajectory and make this a great place for our employees to work."

For more information about Legacy Service Partners, please visit <https://legacyservicepartners.com/>. 



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See How It Works.

by Patrick Linhardt

HYDRONICS MANAGER AT CORKEN STEEL PRODUCTS CO.



Do You Suffer from PTET?

It occurred to me again this morning. I was on my morning commute at about the same place I first self-diagnosed myself with PTET. That morning was my first day back on the job after a two week vacation, the first two weeks in a row off since I can't remember. The Kid did a great job while I was gone, so there weren't going to be any pressing problems when I got back to the office.

Jetlagged from the flight home, I was vaguely thinking of the trip as I was making my way to work. It felt like something wasn't right. Nothing as conscious as a toothache, but bad just the same, more like a nagging feeling of anxiety. It definitely seemed related to my vacation experience.

My wife and I flew over to Geneva, Switzerland and flew back from Milan, Italy. The photo was taken at the duty-free Gucci shop in the Milan Airport. As we passed the shop, she had noticed the bag I'm modeling. My wife is hard to shop for, so I took the opportunity buy her a gift. The modeling was for a running joke of a committee that I am on.

Questioning Oneself

On the nine-hour flight back home, I was reading a self-help book, *12 Rules for Life, an Antidote to Chaos* by psychologist **Jordan B. Peterson**. I think the word chaos in the title got me to buy it at the airport, where my wife and I combined our remaining euros and spent them on the book and Peanut M&M's, our favorite travel treat.

Through the book, Peterson gives advice on life, but more importantly also gets the reader to ask questions of themselves. On that first commute after vacation, I was questioning why I was feeling anxious after a wonderful European adventure. Instead of paying attention to traffic, I was re-living my recent experiences to see if any could be affecting my mood.

I had a great time with my Swiss cousin and her English husband exploring the Lake Geneva area in Switzerland. We stayed at their apartment and went where he suggested. It was



Photo 57352201 © Sergey Kohl | Dreamstime.com

It didn't take me too long to work out my self-diagnosis with changing a few initials.



The author models the latest fashions from Milan.

four days of not making any decisions, which at the time seemed perfect. The four of us then took the train to Florence, Italy where we met my sister and brother-in-law.

A Pattern Emerges

The six of us spent the weekend eating local foods, drinking wine, and viewing the ancient art, which consists mostly of naked sculptures. Again, I wasn't making any of the plans, just going along with the crowd. Are you starting to see a pattern?

After Florence, my cousin and her husband took a train north to Bologna for a week's stay before heading back to Switzerland. My brother-in-law rented a car for the four of us to travel south to Montepulciano, a small hilltop town in the middle of Tuscany. He had an international driver's license, so he would drive while I would navigate.

My dear sweet sister insisted that we first go to the Mediterranean coast for lunch. She remembered that was the one place I really wanted to go. Thinking back on the whole trip, it was the only place that we actually went to that I was the only on my list. The rest of the week in Tuscany was spent going to wherever somebody else wanted to go. Are you noticing a common theme?

Green Issues

We stayed at a wonderful Bed & Breakfast in Montepulciano. At B&B's you meet the other guests in the morning. One morning it was three industrialists from Zurich, Switzerland. They were driving their off-road vehicles in Italy, because they aren't allowed to drive them off-road at home. They blamed the "Greens", which are the environ-

mentalists, for having too much control over their lives.

Another morning we met a couple from Hamburg, Germany. He spoke very proper English, with a distinct German accent, while sitting with the most erect posture. We commented on the cooler and wetter than normal weather. He explained that the weather was being influenced by a disruption of the pressure zones, high pressure shifting north of the Alps while low pressure sunk south, or something like that. I was too busy watching my conservative brother-in-law's blood pressure rise, thinking the guy is a socialist or worse.

Then, the Hamburg man surprisingly said they were on a three month sabbatical after he sold a major part of his real estate business because of the "Greens" in the European Union. Regulations regarding a home's energy rating were changing too quickly. Some homes were facing major renovations or complete tear downs, completely disrupting home values.

My brother-in-law, a practicing architect now with lower blood pressure, commiserated with him about zoning and permit approvals. I found it interesting that the EU, like the US is giving our industry mixed signals. Like, move to electricity to heat our homes, but don't move to save any energy in the production and distribution of the electricity. One of our government's agencies, the EIA, estimates the distribution loss at 65%.

From reading Peterson's book on the plane I realized that the Hamburg man's whole posture and demeanor were to establish a dominance hierarchy, like a lobster. You have to read the book to understand. Nothing wrong with that if you are the dominant one. But, is there a problem when you're the one being dominated?

Diagnosis and Recovery

When I started answering some of these questions that morning, I drifted to PTSD, since it's in the news a lot. PT

➤ Turn to PTET, page 54

Ready for the Windy City & Towns All Across the USA



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HTS Acquires Texas-Based Oslin Nation

HOUSTON, TX — HTS Eng. Ltd (www.hts.com) has announced it has entered into an agreement with the owners of Arlington, Texas-based Oslin Nation (www.onco-tx.com) to acquire the 80-year-old hydronics company. The strategic move enhances HTS' HVAC and Building Automation Controls offerings and strengthens the fast-growing independent manufacturers rep firm's Texas footprint with sought-after pump and plumbing capabilities. Financial details of the transaction are not disclosed.

HTS is the largest independent commercial HVAC distributor in North America, and represents more than 100 HVAC supplier. The company has approximately 1500 employees in 24 cities across Canada and the United States. HTS Texas employs 255 people with offices and service centers in Houston, Dallas, Austin and San Antonio.

Oslin Nation Company, "ONCO," is a Texas-based Manufacturers Representative that has been providing



Mike Donovan

Hydronic and Plumbing Solutions since 1943.

In the Canadian province of Ontario, HTS already enjoys a strong working relationship with Xylem (www.xylem.com), one of Oslin Nation's cornerstone suppliers.

A Natural Fit

"HTS is already entrenched in the hydronic marketplace in the province of



Mike Barnett

Ontario, so the addition of the Oslin Nation family naturally fits into our Texas business and overall strategy and vision," said **Mike Donovan**, President of Houston-based HTS Texas. "This is an opportunity to significantly grow our business with leading suppliers of hydronic products and systems to the commercial and industrial building space."

Oslin Nation's 80 employees will join



Steven Poles


255 HTS Texas employees on the payroll, though no staffing, branding or operational changes are planned.

"We weren't looking to be acquired, but we are extremely excited to join the HTS team," said **Mike Barnett**, co-owner of Oslin Nation, who along with co-owner Steven Lipe, will continue to run the Oslin Nation business and join as Directors on the HTS Texas board. "The HTS local leadership team has the same strong shared values and principles we prioritize to build a great work environment, great culture, and strong and loyal teams."

"We've contemplated this acquisition for over a year, and we believe this acquisition will catapult our presence and unique offerings within the Texas marketplace and allow Oslin Nation's employees and our main supplier partners to continue to flourish in the Texas marketplace," added HTS Texas Principal **Stephen Poles**, who heads the commercial HVAC distributor's Dallas-Fort Worth operation.

A New Standard

With the acquisition, HTS Texas and Oslin Nation are poised to set a new standard for comprehensive HVAC, hydronics and controls offerings, full-scope project management capabilities, and client services.

"HTS Texas has a proven history of Delivering Real Success to its HVAC and Controls clients, suppliers and employees," Donovan added. "This acquisition allows us to continue to deliver an even more comprehensive bundle of equipment and controls to each project, stakeholder and client." 

A. O. Smith Launches New Website

ASHLAND CITY, TN – A. O. Smith announces the launch of its newly updated website, hotwater.com. The fully redesigned website offers an immersive and user-friendly experience with a focus on meeting the diverse needs of today's trade professionals and homeowners.

Key improvements to the website include a mobile-friendly design, a reorganized navigation system and enhanced search functionality. These upgrades, made possible by the new Salesforce Commerce Cloud platform, provide users with a seamless browsing experience and quick and easy access to the information that's important to them. As consumers are researching new water heaters they can quickly navigate to the Contractor Locator Tool, which will connect them to an A. O. Smith installer who can help them select the best-fit water heater for their installation needs.

The new Hotwater.com features

a range of additional enhancements designed to benefit trade professionals:

Trade Partner Support: A dedicated Professionals experience has been created to better serve the needs of trade partners, with unique content specifically tailored to each of the following fields of professionals:

- Plumbing Contractors
- Wholesalers



The new hotwater.com site.

- Specifying Engineers
- Builders
- Utilities

Robust Product Literature & Videos Search: A. O. Smith has made

it easier than ever to find spec sheets, manuals, videos and more with a comprehensive search function.

All users will also benefit from:

Rebates Center: The improved Rebates Center makes it easier for customers to find rebates and incentives for installing A. O. Smith high efficiency products.

Educational Content: The enhanced Info Center educates customers on frequently asked topics like Water Heater Sizing, Water Heater Venting and more.

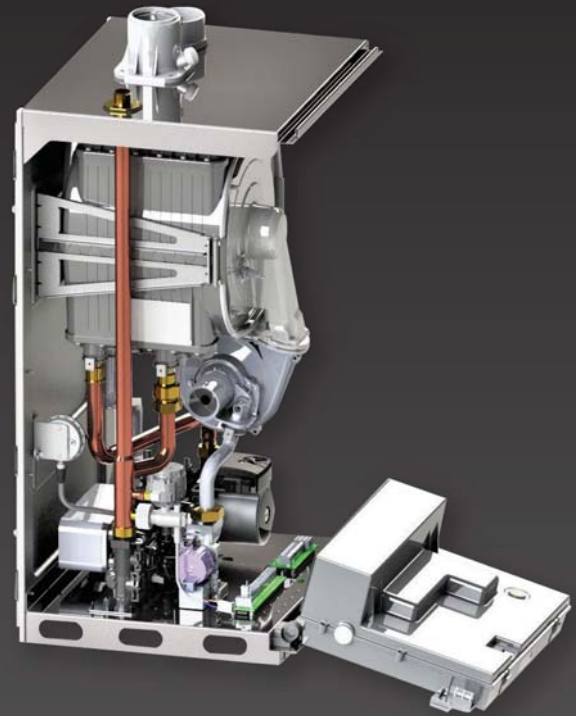
Accessibility: The website is now equipped with an ADA-compliant tool, ensuring a more inclusive experience for all users.

"Our team surveyed customers to find out what resources were most important to them. We then used this feedback to guide our efforts to diligently craft a digital experience that seamlessly aligns with their evolving needs," said **Jeff Storie**, A. O. Smith marketing director.

View the site at www.hotwater.com. 

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New Fire Stations Get High-End Hydronic and Radiant Systems

By JOHN VASTYAN FOR CONTRACTOR

LANCASTER, PA — Here, in the heart of Pennsylvania's Amish region, is one of the oldest cities in the country. But, just like every other town and city in the nation, risks of fire and other emergencies are very real.

Back in the 60s and 70s, several fire stations were built in Lancaster. They served the region well, though as you might guess, the 50+ year-old facilities were gradually compromised by wear n' tear and their inability to meet contemporary needs, including accommodations for larger equipment. The need for greater energy efficiency also became a detriment. Fuel for heating doesn't cost what it used to!

Construction of two new fire stations near the city's center were recently completed on the sites of the old ones. Station 1, on West King Street, was first demolished and replaced. Station 3 on East King Street was completed in 2022.



In the enclosed, radiantly-heated equipment bays, the spit-shined red and gold trucks are kept in mint condition. If garage doors are opened for a quick exit during the winter months, the radiant heat assures fast set-temp recovery.



Each station was budgeted at about \$5 million.

To save money, the same design was used for both stations. Each was budgeted at about \$5 million. According to **Ryan Hunter**, Manager of Parks and Public Property, Lancaster Department of Public Works, the "double-duty" facility design also served to improve economies of scale with the general contractor, architecture, engineering, mechanical and electrical contracting, fire protection and plumbing systems.

"Fire bureau members waited years for this opportunity," said Hunter. "The living quarters at both stations were substantially upgraded."

Futureproofing

"The mechanical systems design for both buildings played a key role," added Hunter. "**Ken Kauffman** [PE, LEED AP] and his firm helped us achieve much-improved thermal

commercial buildings, schools and senior care facilities runs deep.

According to Kauffman, "The commercial building industry's push for greater energy efficiency is more forceful than ever." Much earlier, as a newly-minted engineer and fresh out of PSU in 1985, he began building professional experiences at Moore during the decade following the oil embargo era when they *thought* they were designing for energy conservation.

"Today's technologies, building and system designs are far more advanced and capable," he added. "This facility is sensibly constructed, yet marvelously suited to its need. It's comfortable and energy efficient, thanks much to the use of hydronics here at the fire station."

The mechanical systems design for the twin structures were price-sensitive, said Kauffman. There were very real constraints as to what was feasible. "But the team brought together through a common goal of making this possible for the community exceeded expectations at every turn," he added. "The buildings provide an exceptionally good long-term value for Lancaster."

An example of this was the eager involvement of Thermal Solutions, LLC/ Thermal Solutions—the local firm that

comfort, energy efficiency and future-proofing to the best extent possible," added Hunter.

Kauffman is president of Lancaster, PA-based Moore Engineering Co.; this is his 38th year with them. Moore wasn't chosen by accident. The company's experience with municipal and



The stations feature a common area with large, flat screen TV. Ample sunlight bathed the area through big glass doors leading to an expansive outer deck with seating and barbeque grill.



The Apex line offers 399, 500, 625, 725 and 800 MBH sizes—all stackable two-high without additional framing.

donated super-efficient condensing boilers for space and domestic water heating (Thermal Solutions is a subsidiary of Burnham Holdings, Inc./BHI). **Chris Drew**, BHI's CEO, pledged to donate boilers for both facilities. He said, "This is our community, so how could we *not* help in a substantial way?"

Ann Swartzbaugh, Northeast Regional Sales Manager for BHI's HSSC (Heating Solutions Sales Company) said that she worked closely with the design committee, including Kauffman. "We've had many good experiences with Moore Engineering, so this became a new and exciting opportunity to specify the right [heating] technology, to collaborate on a system that would deliver many years of efficient operation, and to give back to the community we live and work in," she added.

No Brass Pole

Chief **Todd Hutchinson**, Fire Chief, City of Lancaster, led a group of visitors to the building's upper level where several firefighters were enjoying the new living quarters. While one was preparing burgers for the grill, others readied for a workout before going on duty.

In its upper floor, the newest King Street fire station sports a well-equipped fitness room. There's also a shiny new, commercial kitchen and comfortable dining area, complete with a giant, custom dining room table—unquestionably the alter of a firefighter's lair—a labor-of-passion built by **Dave Benson** and several other firefighters. "It gives us solidarity and a sense of home," said Benson.

There's also a common area with large, flat screen TV. Ample sunlight



Five Taco 00e circs of varying size govern the zones and a larger Taco 1915e serves the primary loop.

Moore Engineering installs Thermal Solutions Apex boilers, Taco circulators, for two new fire stations in Lancaster, PA.

bathed the area through big glass doors leading to an expansive outer deck with seating and barbeque grill. According to Chief Hutchinson, there's also a private dorm for female firefighters, captains and battalion chiefs.

But, should the alarm sound, there's no brass pole for firefighters to make a quick drop to the lower floor. Instead, firefighters use a bright red three-story spiral slide to reach the ground floor. "That's where they jump into protective clothing and other gear before climbing into the trucks. We train frequently to be sure that all facets of our operations are familiar, fast, and well-rehearsed," said Hutchinson.

The transition from traditional pole

to modern slide is an example of the emphasis placed on workplace safety. For instance, the station was designed to control dangerous contaminants. According to the fire bureau, firefighter cancer rates are about 40% to 50% higher than the general population. Research has shown that exposure to carcinogens at fire scenes intensifies these health concerns.

Green Construction

Each of the new fire stations is topped with a green roof that includes vegetation to absorb rain—rather than sending it into the city's stormwater drainage system.

intuitive touch-screen control, are direct vent, sealed-combustion systems with negative cabinet pressure. The lower portion of each boiler's cabinet operates under negative pressure to create an added layer of safety. Each low NOx Apex offers 5:1 turndown, stainless steel combustion chamber, and multiple venting options up to 200 equivalent feet. The Apex line offers 399, 500, 625, 725 and 800 MBH sizes—all stackable two-high without additional framing.

"For the primary-secondary piping, we chose Taco ECM circs for their efficiency, reliability, and smaller footprint which really helps when working with minimal space in a mechanical room," said **Nikki Brossman**, HVAC project manager for Myerstown, PA-based Shannon A Smith, Inc., a full-service commercial mechanical and electrical contracting firm.

"This was my first experience with Apex boilers," she added. "What really stood out to me was the fact the boilers could be stacked. This really helped us with coordinating the install, due to L&I requirements."

According to Kauffman, the stacked boilers (rather than a single unit) were chosen to provide redundancy. The primary-secondary piping serves four high-mass, in-floor radiant heat zones for the large equipment bay, and also several terminal units (convectors and cabinet heaters) for common area space heat.


In the enclosed, radiantly-heated equipment bays, the spit-shined red and gold trucks are kept in mint condition. If garage doors are opened for a quick exit during the winter months, the radiant heat assures fast set-temp recovery.

Ready to Serve

Hunter said that the new fire stations have already reduced emergency response times throughout the community.

The 18,000-square-foot, West King Street station houses both of the city's two specialized fire units. The new facility is home to EMS personnel and equipment on one side, and large fire equipment bays on the other.

At a minimum, 15 firefighters are on duty and ready to respond to emergencies at any time. The station is expected to respond to about 4,000 service calls each year.

Now, more than ever—Lancaster's Fire Department is ready to serve. 

But, inside is where greater evidence is seen of the facility's purposeful sustainability and energy efficiency. Daylight is maximized and LED lights are used. Low-flow products were used for all water fixtures.

On the second floor of each fire station are immaculate, state-of-the-art mechanical rooms. The crown jewels of each of these are two stacked, 500 MBH, condensing Thermal Solutions Apex boilers that operate at up to 97% efficiency—each served by a host of Taco ECM circulators: five Taco 00e circs of varying size govern the zones and a larger Taco 1915e serves the primary loop.

The natural gas-fired boilers, offering

by Patti Feldman
COMPUTER AUTHORITY



Four for Field and Office

HQ Suite (<https://myprojecthq.com>) is an all-in-one web-based construction management platform addressing a range of office contractor or subcontractor needs for connecting data, field, and office.

Crew HQ is a labor dispatch and resource management app. A centralized dashboard lists all projects and a user can drill down to see action items, by project, along with priority rating, due date, and if overdue. The project schedule view shows each project's start and end dates, employees/contacts, and cost codes for each task. Job-specific scheduling delineates crews, equipment and materials for each job and features real-time alerts sent to field employees for job changes, requirements, and dates.

Project HQ, a project management app, handles change order management, AIA billing, RFIs and submittals, email and correspondence tracking, action items, contract management, document storage, PO management, subcontractor management, timecard entry, and customizable daily photo logs. The home screen shows a list of projects, any of which you can drill down to keep track of and update details, documents, email, and files, with ability to enter notes on equipment, labor, materials, and other data in a daily log. The app integrates your project documents library with DropBox, OneDrive, and Google Docs.

Takeoff HQ is a quantity takeoff app that offers assembly templates for calculating material and labor total and includes the ability to calculate any measurement (area, length, count, volume). Estimators can price out labor and materials based on assemblies and items, mark them up, and create reports. They can also build your bid structure and perform take-offs on digital blueprints.

Executive HQ is stand-alone web-based reporting for contractors. A centralized location of job data and financial data for all projects, it includes Project WIP schedule with the ability to see a summary overview of details of all projects on one screen; color-coded job summary reports for each project with costs broken out by cost class, es-

The screenshot shows the Crew HQ dashboard for 'Draeger's Diggers, LLC'. It features a sidebar with navigation icons for Home, Projects, Contacts, Reports, and Settings. The main content area is divided into three sections: 'Projects (5)' with a list of projects including Kessler Clinic, Kizer Strip Mall, Bieber Elementary, Visions Healthcare, and Starbucks - Brunswick; 'Action Items (22)' with a table of tasks like '#100 - Sign off on RFI Approval' and '#103 - Assign team members new site badges'; and 'Project Schedule (45)' for project '#1234 - Kessler Clinic' showing tasks like '#12 - HVAC Maintenance' and '#13 - Inspection' with their respective dates and personnel.

The Crew HQ dashboard.

Reviews of the HQSuite construction management platform, The Connecteam field service management app, the Successware Payments integrated solution and the White-Rodgers app.

timated vs actual cost, costs by codes, committed by cost code, and change order cost vs. income.

Safety HQ, a construction safety app, is designed to help manage a company health and safety program. It includes ToolBox Talks; customizable forms to manage site safety inspections and hazard assessments, with photos; training and job hazard analysis with customized task-specific and new-hire training courses; and certificate tracking for each team member. The software includes the ability to create custom editable electronic inspection forms, with required fields to help ensure nothing important is left out; real-time reporting and analytics; corrective action reports by date range; and the ability to share inspections via branded pdfs. It also includes links to suppliers for relevant SDS (Safety Data Sheets).

Pricing: user-based pricing varies depending on products added.

Connecteam

Connecteam field service management app (<https://connecteam.com>)

provides multiple communications channels that facilitate streamlined communications and operations for companies with an on-the-go workforce. The software, centralized through an Operations Hub that serves as a digital dashboard, addresses job dispatching, employee hours (working, driving, or otherwise), tracking employing an integrated GPS time clock, task management, and workflow. It also offers online checklists and other forms.

Dispatchers can schedule jobs and projects for one or multiple employees and attach notes and pdfs to help clarify details, right down to the individual shifts. Built-in chat capability accommodates instant work announcements and updates as well as monthly training, online onboarding, and on-the-fly communication needs.

Available online forms include job ticket, safety checklist, hazard report equipment inspection checklist, and supervisor checklists.

Pricing: 14-day free trial available to all; small business plan for up to 10

users; free; Enterprise plan for up to 30 users, monthly subscription includes a personal account manager, private branding, and other features; 30+ users: additional monthly fee per user.

Successware Payments

Successware Payments (www.successware.com) is a newly introduced integrated payment processing solution for the Successware business management platform (see our Jan 2021 column). Designed to expedite the customer payment process, your technicians can accept all major credit, debit, secure chip cards, mobile and ACH payment methods through Successware Mobile and your business has access to competitive rates for credit card and ACH processing. It also includes Successware Invoice and consumer financing.

Successware Invoice allows technicians to send customers a digital, contactless invoice via email or SMS with a personalized, secure online payment link. It also streamlines the payment process in the field with automated payments. Integrated consumer financing allows your customers to get approved for financing on the spot through Successware Mobile.

White-Rodgers Connect

White-Rodgers Connect is a free mobile app for facilitating HVAC installation and diagnostics. It allows a compatible mobile device with an NFC (Near Field Communications) antenna to communicate with a compatible White-Rodgers control. The auto-set features enables you to enter the replacement part number to automatically configure the White Rodgers control to the replacement part's original set-up. The app is preloaded with hundreds of OEM control configurations and is compatible with Android 8 (or newer), iPhone 8, or iOS 13 or newer. The app can be used without Wi-Fi or cell service. No log-in required.

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



Six Preparations for Plumbing in a Perilous Economy

Runaway government spending has led to excess money chasing the same goods and service resulting in inflation. To battle the inflation, the Federal Reserve has been boosting interest rates and reducing the money supply. Sooner or later, this will break economic growth and we will enter a recession. Here are six preparations you should make now.

1. Prepare Mentally

Economic downturns are part of the business cycle. They happen. They must be endured. But they do not last. Most are over within a year. And few involve deep contractions of economic growth. The stock market may take a pounding, but a deep recession is usually less than a 3% contraction. You can survive that. You can overcome it.

Smart businesspeople understand that recessions are also opportunities. In a recession, the competition often reacts emotionally and cuts spending. Competitors stop advertising and marketing. They lay people off. That makes recessions opportune times to pick up both business and plumbers if you are prepared.

If you prepare well a recession is almost something to look forward to. You can take market share from your competitors as they seem to disappear from the market and you can hire seasoned plumbers.

Preparing mentally means preparing your team as well. Be upfront that you know a contraction will happen sooner or later, but that you are planning for it and expect that the company will not only weather it but perform even better. Remind them that, plans or not, everyone will need to pitch in and perform at the top of their game. They are a team and everyone supports everyone else.

2. Set Aside Cash

Cash is king at any time, but especially important during tough economic times. Building up cash reserves in a separate account gives you peace of mind. It gives you the ability to take advantage of sudden opportunities,



Smart businesspeople understand that recessions are also opportunities. Here are six preparations you should make now.

such as buying a struggling competitor at a bargain price or picking up a building at a discount.

3. Check Your Pricing

There has been a lot of inflation over the past couple of years. Is your pricing up to date? It is harder to raise price in a recession than before one.

4. Line Up Financing

When the economy is contracting, the always negative news media goes into hyperdrive. People worry about spending their cash. This makes financing even more important. The trick is to have multiple sources lined up so that you can shop them for the fastest

approval and best deal. If one turns down a customer, the next may not. Research studies have shown over and over again that financing does not merely increase sales, it increases the amount of each sale.

5. Network Like Never Before

Your personal network and standing in your community is one of the ways you will stand out and generate business without a lot of advertising. In fact, personal connections generally trump advertising. However, building a network takes time. If you haven't started, start now. Get involved with your local chamber of commerce. Join a service club, like Rotary, Kiwanis, Lion's,


Optimist, Civitan, or more than one. Join a leads group like BNI, Netweavers, Le Tip, or a local one found through your chamber of commerce. Volunteer to help community charities, always wearing your company shirt.

There is an added bonus from networking and volunteering. You are building goodwill in the community that could save you if you ever find yourself on the wrong side of a media sting. This is when the work you did to serve your community will serve you. You will have a bank of goodwill to draw from in your defense.

6. Start Affinity Marketing

Affinity marketing is where you take advantage of a shared affinity, such as a charity. Set up a program where people support the charities they like by doing business with you. For example, you could set up a program with a neighborhood homeowners association where you give \$10 or \$20 to the HOA for every service call in the neighborhood, provided the HOA promotes your business.

HOAs are easy because they have defined territories. You can do the same thing with virtually any charity, though it might involve giving the charity some kind of website link, card to pass out, or instructions to reference the charity.

Affinity marketing works at any time, but it works better in tough economic situations because people know their favored charities are hurting. While they may want to help them, they are also feeling pressure. Affinity marketing gives people a painless way to help and makes your company the preferred plumber. 

For a free guide on setting up affinity marketing, visit www.ServiceRoundtable.com, click on the Freebies link, and page through until you find it. While there, consider joining the Service Roundtable to access their vast library of downloadable and customizable sales, management, and marketing tools created specifically for plumbing contractors.

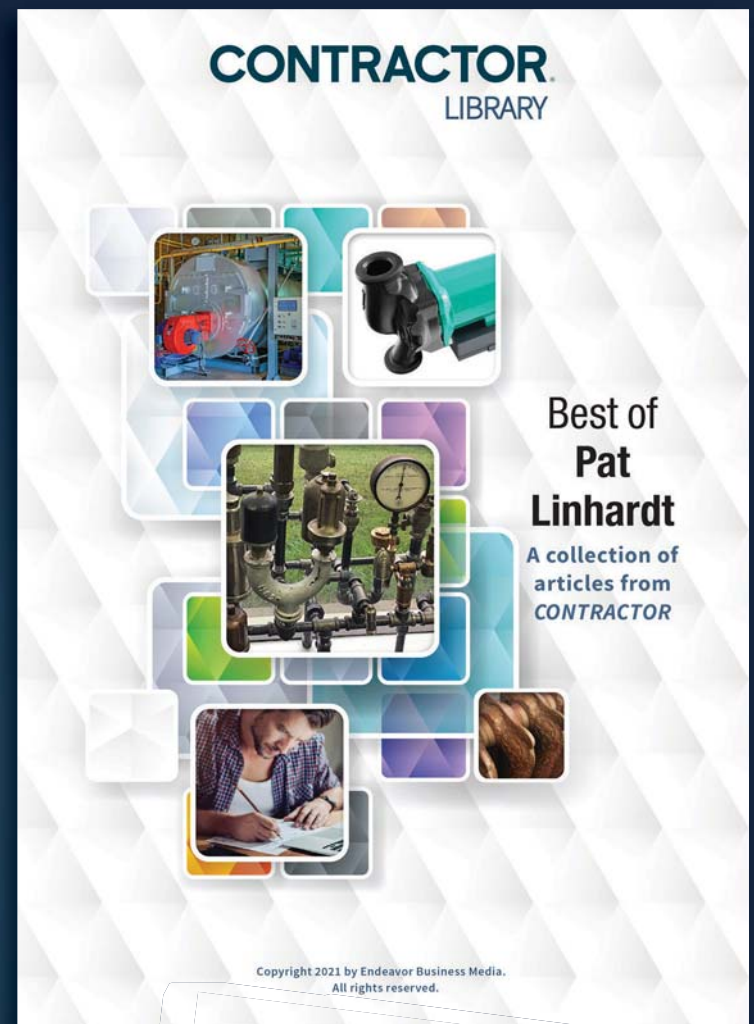
NEW EBOOK FROM CONTRACTOR

Download the Best of Pat Linhardt

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

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

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



by Del Williams
TECHNICAL WRITER



10 Tips From an Expert to Ensure Safe Sewer Cleaning

Municipalities must safely clean and maintain many miles of sewer line annually to eliminate blockages and prevent sanitary sewer overflows, which are regulated by the EPA. However, the use of high-pressure equipment in underground sewers can be dangerous unless operators are well trained and fully understand the hazards.

Understanding and correcting some of the most common operator mistakes in sewer cleaning can go a long way toward keeping them safe. So, safety expert Dan Story, Operations Manager at KEG Technologies, who has instructed operators for decades, provides 10 tried-and-true sewer cleaning safety tips that address the most common errors that he has observed. The Spartanburg, SC-based company is a manufacturer of sewer and storm line products including Tier 1 to Tier 3 nozzles, chain cutters, floor cleaners and camera nozzle systems.

As a national trainer of best-practice techniques, the company is a member of NASSCO, the National Association of Sewer Service Companies, and its Tier 3 High Efficiency nozzles, such as the Torpedo, Royal and OMG, provide up to 98% efficiency.

Tip #1 — Properly set up the area around the sewer vacuum truck to ensure operator safety in street traffic.

"To start sewer cleaning, when you park the vacuum truck in the middle of the road, you need to block off the traffic so it can pass in a safe manner. Set safety cones in front and behind the work zone and make sure the hazard flasher lights are functioning correctly," says Story.

Tip #2 — Keep equipment noise levels low enough to hear traffic.

Revvng the sewer truck engine and running its vacuum pump can be noisy. So, Story advises keeping RPMs low enough so operators can hear and avoid approaching vehicles and converse with co-workers as needed.

One way to lower sewer vacuum



Workers wearing their PPE at the vacuum truck. To prevent free spooling the nozzle up the line and losing control, use a nozzle skid and hold the nozzle back.

Understanding and correcting some of the most common operator mistakes can go a long way toward keeping workers safe.

truck RPMs during engine operation is by only using the vacuum when needed and allowing the water to pass through as the solids remain.

"You can put the nozzle in the bottom of the sewer pipe and let the water run around it. The solids remain to vacuum as needed. You do not need to run continuously high RPMs," says Story.

Another method is using more efficient nozzles, which enable sewer cleaning with lower pressure water, reducing engine RPMs.

Tip #3 — Understand how your specific sewer truck boom operates.

There are differences in how every sewer truck manufacturer configures, deploys, and extends the booms that control the vacuum hose. Some deploy rapidly, some articulate, some telescope. Operators must understand

these differences before operating a boom in the field around their co-workers.

"Because you may go out in different vehicles from day to day with different crew members, it is important that you understand your boom equipment. For everyone's safety, do not rush the job because the boom can cause injuries if it is not used with full understanding and control," says Story.

Tip #4 — Use Personal Protective Equipment (PPE) and practice good hygiene.

"Protect your hands and feet with waterproof gloves and work boots. Protect your eyes with goggles or a face shield. Of course, protect your head with a hard hat to avoid injury from a swinging boom or a falling object," says Story.

When cleaning sewers, operators exposed to sewage or human waste may be at increased risk of becoming ill from waterborne diseases. To reduce this risk and protect against illness, operators should wash hands with soap and water immediately after cleaning sewers before eating or drinking. Avoid touching the face, mouth, eyes, and nose while handling sewage, and cover any open cuts, sores, or wounds with clean, dry bandages.

In addition, Story points out that the CDC advises vaccination against Hepatitis A and B and other contagious diseases that could put operators at risk when exposed to sewage or human waste. The CDC, in fact, also recommends vaccinations for tetanus, polio, and typhoid fever in these environments. (https://www.cdc.gov/healthywater/global/sanitation/workers_handling-waste.html)

Tip #5 — Open the upstream sewer manhole first.

In underground sewers, operators can be at risk from toxic inhalation. High concentrations of methane in enclosed areas can lead to hazards as large amounts of methane decrease the amount of oxygen in the air. Oxygen deficiency can cause headache, nausea, dizziness, and even unconsciousness.

So, Story says that one of the first things that operators must do is open the upstream manhole as a precaution to enable drawing in clean air.

"For safety in sewer pipe, the first thing you always want to do is open your upstream sewer manhole. That will allow the system to draw in fresh air. On the other hand, if the air were to be drawn directly from the homes, it could fill them with sewer gas, which is unsafe and unpleasant for homeowners," says Story.

Tip #6 — To avoid injury, do not start hydro jetting outside a pipe.

With hydro jetting, sewer cleaning nozzles are designed to direct water at exceedingly high rates of pressure. For

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by Heather Ripley
FOUNDER AND CEO OF RIPLEY PR



You're the Expert

One of the main goals of any home service public relations strategy is to keep your business top of mind with both reporters and the homeowners you serve.

And, a surefire way to ensure this happens is create enough credibility and buzz around you and your business so that when these reporters need an expert source or when a potential customer needs service, your business is the first one they think of.

Being the go-to local expert will not only lead to guest appearances on local news shows and in newspaper reports, it also builds trust among the public when they need help with their plumbing, HVAC or electrical issues.

One way to create this buzz is to hire a PR agency that understands the specifics of the home service industry. A good agency will find ways to establish you as an authority and get useful information out to the public. You may be the expert in your field, but if no one knows that, it doesn't do you much good.

So making sure that everyone in your service area knows you are the expert should be one of the first things you should include when building your PR strategy. Here are some ways to get started:

Enhance Your Website

Your website is generally the first thing people see when they perform an online search for service. If your website is outdated or isn't user friendly, they will click out and move on to a competitor's website that is modern and easily navigated.

Make sure your website has plenty of visual cues like clear, engaging images and short videos. You need to have numerous calls to action encouraging consumers to call or email you for service. You can also provide potential customers with the ability to schedule service online.

Finally, make sure your website looks professional. If your content is rife with misspellings, the videos are blurry or you haven't provided enough information about who you are and what your company does, you could lose potential clients. And you certainly won't be seen as an expert if your website is subpar.



Make sure everyone in your service area knows you are the expert to call.

Start a Blog

Along with updating your website, you need to consider starting a blog that offers advice and allows you demonstrate your expertise.

A blog is NOT a place to advertise. Your blog posts can be a bit promotional but should still focus on tips for your readers or company news. Consumers are already inundated with ads and won't voluntarily head to your website to read more advertising. But, if you provide them with something they can use, they'll happily read your prose.

Providing tips and expertise on your blog has the added bonus of cementing your position as the expert in your field.

But, a word of caution: once you start a blog, you must maintain it. Providing fresh content on your website not only helps you move up in Google search rankings, it will also be seen by the media who will consider you a potential expert source.

Expand your Network

While it may not be immediately clear why joining civic groups or volunteering at local charities and non-profits will help establish you as the leader in your market, the more you're seen, the more you become recognized as a business genuinely invested in your community.

You can also lend your expertise to area charities as a gift-in-kind or mentor younger generations who are interested in a career in the trades.

If you are out volunteering at your local pet adoption center or Boys and Girls Club or starting clothing drives or food funds, you will be identified as a helper in the community. That's a huge benefit when you're trying to establish yourself as a helpful expert, and the media will take notice.

Send out Press Releases

Even in our technical age, press releases are still the bread and butter of delivering news and interacting with the media. And, if you provide a release that is well-written in Associated Press Style and that offers timely and relevant information, you will get noticed.

So, if you are a plumbing expert and the weather report is calling for prolonged freezing, a release detailing how homeowners can protect their homes, pipes and other creature comforts from the weather makes it more likely you'll get a call from a reporter. Capitalizing on events that are relevant and newsworthy helps your statements get noticed.

Another way to solidify your role as a subject matter expert is to be quoted in trade publications regarding your

home services industry area of expertise. Identify the publications you and your peers read the most and concentrate on nurturing relationships with the editors and reporters who work at those publications.

Once you've established yourself as a reliable and accurate expert on matters surrounding your trade, you're more likely to be called upon for quotes or as a subject matter expert.

Pitch Yourself

Finally, you need to consistently think of ways to get yourself in front of audiences that can strengthen your credibility and thought leadership abilities. This could mean that you submit yourself as a speaker at industry conferences or by following local news events so you can put yourself forward as an industry expert with advice for area homeowners.

When you put yourself out there in such a visible manner, you subject yourself to media scrutiny. That's why it's important that you receive some media training as part of your overall public relations strategy. A reputable PR agency should be able to prepare you to handle interviews so that you feel comfortable in front of a camera.

But, it does take time and effort to promote your capabilities.

Pitching yourself and providing fresh content aren't always easy when you have a business to run. Hiring a PR agency that specializes in the home service industry can help you offset some of these responsibilities while still centering your experience.

You don't want to waste any opportunity to make sure that everyone knows you're the expert in your field, so getting your name and know-how out to the public is a priority if you want to take your business to the next level of growth. **C**

Heather Ripley is founder and CEO of Ripley PR, an elite, global public relations agency specializing in the skilled trades, B2B tech and franchising. Ripley is the author of "NEXT LEVEL NOW: PR Secrets to Drive Explosive Growth for your Home Service Business," which is now available on all audiobook platforms. For additional information, visit www.ripleypr.com.

by Rakesh Gupta
CHIEF OPERATING OFFICER AT BIBERK



Tips for Funding Your Small Business with Grants and Loans

For owners looking to start or grow a small business, funding can be crucial. In fact, capital is often the difference between a company whose products or services take off and offerings that never see the light of day or, at best, don't achieve their full potential.

The good news is that you don't need a large personal "nest egg," capital from the sale of a prior venture, etc., to obtain the money to start a business or take an existing one to the next level. There are many loan and grant programs for small businesses you can leverage.

With a little research, guidance from a licensed financial planner, and outreach to the loan or grant provider, you may be able to secure vital funds for your company.

"We don't fund small businesses, but we address their insurance needs and see every day how important access to capital is to them," says Peter Shelley, my colleague and president at biBERK, a Berkshire Hathaway Direct small business insurance company. "While there's no guarantee that your business will meet a particular grant or loan program's requirements, there are so many out there that a bit of time and effort could uncover one or more that will serve your organization's funding needs."

Grants vs. Loans

You'll often see the terms "grant" and "loan" used together—including in this article. But it's important to understand the difference. Grants are essentially gifts, with no requirement that you repay them. Of course, it's critical to confirm that fact before accepting a specific grant!

Loans are sums you must repay. They come with terms and conditions, including the interest rate on the borrowed money.

So, if you find grants and loans for which your business is eligible, the former may be better. But even a small business loan with a reasonable interest rate can provide a cash infusion that's extremely useful for a company.



With a little research and guidance from a licensed financial planner you may be able to secure vital funds for your company.

Again, just be sure to talk with a licensed financial professional before accepting money from either type of program to understand how doing so affects your company.

Government Funding Programs for Small Businesses

Federal, state, and local government entities offer many types of loans and grants with various focuses and requirements. For example, the US Small Business Administration (SBA) provides several types of grants. Its website explains the process for obtaining them, and you can look for available assistance programs at SAM.gov.

The US Chamber of Commerce also has helpful information on grants and loans that benefit small businesses. Some of the programs it lists apply to small businesses generally, while others are specific. For example, there are programs for small businesses in healthcare, companies that are minority-owned, etc. Looking for targeted

programs can be helpful, as they limit eligibility to certain types of companies, meaning you may have less competition for a loan or grant.

Private Sources of Small Business Funding

Companies, trade organizations, and others offer many types of funding for small businesses. For example, the list of entities offering grants includes companies like Verizon, FedEx, Visa, Venmo, and countless others.

Entities like the National Association for the Self-Employed (NASE) and similar organizations provide grants ranging from a few hundred to hundreds of thousands of dollars. Some groups make money available throughout the year, while others have grant "competitions" that accept applications during specific periods.

As with government grant and loan opportunities, private programs can be general or specific. A quick online search with terms like these will bring

up long lists of options to review with your financial advisor:

- Women-owned business grants/loans
- Small business grants/loans for veterans
- Grants/loans for minority-owned businesses
- Grant/loan programs
- Community foundation grants and loans
- Grants/loans for business owners
- Chamber of Commerce grants/loans
- [Your industry] grants/loans

Given the many options available, it can be helpful to create a spreadsheet with details on the programs you want to apply for—the grant name, amount available, requirements, request deadline (if applicable), etc. But regardless of how you choose to pursue them, your business can likely obtain critical funding from one or more sources.

Non-Monetary Grants

Some entities offer grants in the form of resources like land or services rather than capital. Or they may offer a combination. For example, FedEx has a small business grant contest in which winners receive money and FedEx print credits from FedEx Office.

While you may be seeking funds, non-monetary grants can be just as valuable. Not only do they meet a need, but they also reduce your expense for the item or service, meaning you can earmark money saved for other initiatives. So, when a grant program provides products, services, etc., you should consider how your company might benefit.

Grant Fraud

While you don't repay a small business grant like you would a loan, grants do come with certain requirements. Not surprisingly, failing to adhere to the conditions has consequences.

Specifically, if you commit grant fraud (e.g., you obtain a grant to start a business but instead use the money to

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NEW EBOOK FROM CONTRACTOR

WORKFORCE DEVELOPMENT

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

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

<https://www.contractormag.com/learning-resources/whitepapers/whitepaper/21120429/ebook-workforce-development>

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WORKFORCE DEVELOPMENT



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by Drew Cameron
SALES AND MARKETING STRATEGY AND SUCCESS ADVISOR



Compel Both New Prospects and Existing Customers to Buy

When it comes to selling to homeowners, salespeople are working with new prospects or existing customers.

New prospects offer the opportunity to serve a new home that is full of potential. This can lead to increased market share and a new referral resource.

Existing customers offer the opportunity to elevate your level of service, expand your relationships, sell additional products, plus solve longstanding problems. Existing customers often cross-pollinate with other services you offer, with a higher probability of buying and spending more money. In other words, existing customers should never be taken for granted in favor of new prospects.

While new prospects may offer new revenue potential and the allure of a large purchase, there are no guarantees they will buy anything. While you invest money and time chasing prospects and not paying attention to existing customers, don't be surprised if those current customers leave you. Why? They may feel indifferent toward your company, or another company poaches them by offering to solve problems you miss.

Plus, if you choose not to offer high-performance products and services to pesky problems that present a lower-revenue opportunity on the surface, you miss the chance to turn those small money fixes into larger income projects. Such longer-term scenarios can help your customer build their perfect home environment over time.

Sales is Like Baseball

In baseball, you cannot always swing for the fences, or you end up striking out more often and hitting fewer home runs. However, if you consistently put the bat on the ball, you will get on base more, drive in more runs, hit your fair share of home runs, and win more games.

In-home sales work much the same way. The customers you serve consistently can eventually turn into a consistent string of base-hit sales, home



How can you appeal to both new prospects and existing customers to drive sales?

run sales, or a referral to more base hits and home runs.

Cost Strategies

Regarding the effort to sell new prospects versus customers, prospects require more marketing dollars to convert into a customer. Home services contractors report the average cost to create a prospect can average \$400. That cost increases to an average of \$600 to convert the prospect to a buying customer.

These costs stem from expensive marketing strategies that include direct letters, radius mailers, billboards, radio, television, over-the-top streaming, video-on-demand, digital marketing, newspaper and magazine branding, direct response ads, and more.

Existing customers, on the other hand, cost very little to remarket to. Most companies can flip an opportunity to sell products and services from an email, text, phone call, postcard, letter, tech handout, newsletter or service visit, each of which costs only pennies to a few dollars.

Existing customers also offer low-cost

opportunities to create new prospects and customers through yard signs, branded homes (decals, grocery bags, and other in-home branded materials), referral rewards, mailbox/door hangers, as well as trucks (rolling billboards) in neighborhoods.

Appeal to Both Customer Types

How can you appeal to both new prospects and existing customers to drive sales?

Most HVAC contractors are weather-dependent and offer specials to drive business if weather conditions are not doing so. Top-performing contractors are weather-driven and realize that while special promotions can work when the weather doesn't cooperate, it is far better to be special and stand out, rather than fit in. They allow the lore of their service, reviews, and referrals drive business. They are COMPELLING, not selling.

These contractors promote their unique people, protocols, products, and processes to pinpoint and correct comfort problems, highlighting that homeowners do not even have to

replace their equipment in many cases! Their custom solutions are usually easier, quicker, and cost less than they think.

You do this by pointing out that you are the ONLY contractor in your area qualified and certified with the proper tools, training, and technology to diagnose and correct these annoying issues that plague customers' lives.

Taking the House Doctor approach allows your company to be a premium service provider for the discerning homeowner with distinctive tastes who desires better quality, peace of mind, and a higher standard of living. Pamper Your Customers

In this economy, with prices soaring and inflation causing mortgage rates to rise, people stay in their homes and invest in making them the way they want. Many such homeowners wish to be catered to with unique, innovative, problem-solving remedies. Many want pampering with extraordinary service and a caring attitude. In other words, provide an impactful life experience that shatters the expectations. Most homeowners want value, affordability and less risk. They want contractors to do what they say they are going to do. It's in your best interest to be the professional the customer needs you to be and do the right things the right way the first time. Then guarantee your work and customer happiness 100% in writing or provide a full refund if you fall short.

Be the company that says, "Let us help make your home feel as good as you and your family deserve for your large investment."

High-Value Comfort Specialists

Position your company as the high-value solution specialist and the local expert at fixing unsafe, unhealthy, uncomfortable, energy-wasting homes. Talk about the common problems most homeowners experience that other contractors neglect in favor of chasing equipment sales. Address pre-existing

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Skilled Trades Centers – Up and Running

► **Continued from page 24**

students and was impressed with their commitment to a trade education. The program most discussed was something called “geometry in construction” which is exactly what it sounds like.

Every plumber I’ve ever known used geometry and other mathematics every day. Most learned, or perfected, the practical application on the job even when they might not have had the formal math education. Things like calculating pressure, volume, geometry, slope, and pitch are all things good journeymen do daily. If there is one formula every good plumber uses it’s the hypotenuse of a right triangle ($A^2 + B^2 = C^2$). You can’t lay out a soil inside of a large building without that math, at least. How many outside of our trade use geometry in that way regularly? Few, I’m sure. The program associated with the Skilled Trades Center idea codifies that specific training and applies it to teaching trade skills.

More on the Way

While chatting with Douglas, and his lovely wife Heather, I was told that there are three other Skilled Trades Centers currently under construction in the



Materials and tools have been donated by various manufacturers such as Home Depot, Harbor Freight, DeWalt and others.

Vancouver area. All are a result of Douglas Greene’s efforts and dedication to the idea of filling the manpower void in America today and preparing a new generation of skilled craftsmen (craftspersons?). Not surprising were the many young women who had signed on to the training program as well. “This ain’t your daddy’s trade training!”

These centers and the programs they engender are ideas whose time has come. There is a crying need in our industry for more and qualified apprentices to bolster the ranks of the quickly retiring journeymen and the Skilled Trades Center concept could just be the steppingstone to filling that need.

The enthusiasm for the program, by both the students and their faculty advisors, is palpable. If you listen to Douglas’ remarks, the magnitude of what we were in the process of losing becomes clear. There are few people who I have met that have the entrepreneurial abilities of a Douglas Green, but they are out there. Perhaps, after seeing what has been done by Douglas at Evergreen High School, they will step up and carry the ball. One can only hope! **C**

The Brooklyn, NY-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.



Three other Skilled Trades Centers currently under construction in the Vancouver, WA area.



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Do You Suffer from PTET?

► **Continued from page 38**

for post traumatic, since it happened in the past. S for stress, like the anxiety I was currently feeling. But definitely not D for disorder. That is a serious medical condition and mine at that point wasn't anything like the suffering of people with that condition.


It didn't take me too long to work out my self-diagnosis with changing a few initials. I stuck with the PT, but changed the D to a T for theory, since everything

in science and medicine starts with a theory that needs to be tested. I don't think PTET will ever be tested by the academic community.

The E stands for emasculation, that feeling as a man you're not in charge or you're weaker or according to the internet, you're deprived as a man of your male role or identity. That's what I was feeling, less of a man because I wasn't in charge of anything. My work role, like telling the Kid what to do, was lost for

two weeks. My identity had been overshadowed by other people being in control or me perceiving them as stronger.

Bingo, I had figured out my problem just as Deep Purple's *Machine Head* started playing on the car stereo. As a true road song, it inspired me to mash the accelerator. The fast lane was calling and my answer was my treatment for PTET. My Mustang MachE's instant torque put me back in my seat and on the road to recovery. Six passed cars

later and almost double the speed limit, I was in charge and on the road to recovery. 

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.

Study: Water Demand Calculator™ Can Lead to Energy, Carbon and Water Savings in Single- and Multifamily Residences

ONTARIO, CA — Using the International Association of Plumbing and Mechanical Officials' (IAPMO) Water Demand Calculator™ as an alternative to sizing methods in traditional plumbing codes can result in energy, carbon and water savings with no change to how residents use plumbing fixtures in their homes every day, an analysis by Arup, a global collective of designers, consultants and experts dedicated to sustainable development, has found.

Potential for Savings

IAPMO commissioned Arup to analyze and better understand the Water Demand Calculator's potential for sustainability savings. Arup compared the Water Demand Calculator with the Hunter's Curve method found standard in both the *Uniform Plumbing Code (UPC®)* and the *International Plumbing Code (IPC®)* for sizing domestic hot water systems in four residential-use cases. The analysis included a single-family home, and six-unit, 45-unit and high-rise multifamily residences.

Arup's study found that when the Water Demand Calculator is used for domestic water design for residential buildings instead of the Hunter's Curve sizing methods, there are resulting operational energy and



**International Association of
Plumbing and Mechanical Officials**

embodied carbon savings in all four of the use cases, as well as water savings in the non-circulating units. Water savings were demonstrated through minimized time to tap using the Water De-

mand Calculator sizing and range from 450 gallons to 71,000 gallons annually depending on the building size. A single-family unit prototype showed annual water savings of 450 gallons, while high-rise residential buildings show savings in operational carbon between 73 and 84% for booster pumps and embodied carbon savings ranging from 20% to 41%. Using the Water Demand Calculator


A Tool for its Age

"The Water Demand Calculator is a tool for its age," IAPMO Vice President of Technical Services and

instead of the Hunter's Curve method to size domestic water systems in high-rise residential buildings shows savings of operational carbon ranging from 2,000 to nearly 24,000 pounds of carbon dioxide per high-rise residential building, depending on grid emissions at the project site. Additionally, a reduction in pipe sizing allows for reduced heat loss through pipes.

The Water Demand Calculator is the first significant update for water pipe sizing in buildings since Hunter's Curve was developed more than 80 years ago. The Water Demand Calculator predicts peak water demand for single- and multifamily dwellings and removes the need for assigning fixture units to plumbing fixtures and corresponding to Hunter's probability curve. Instead, it directly calculates peak demand using algorithms based on the building size. Contained within Appendix M of the 2021 and 2024 *Uniform Plumbing Code (UPC®)* and free to download, version 2.1 of the Water Demand Calculator addresses water quality issues attributed to lower flows in oversized premise plumbing while simultaneously using less water and energy, representing the most impactful innovation in pipe sizing in nearly a century. It is the result of a multiyear effort to develop a new statistically based pipe sizing method stemming from a need to address profound water safety and wasted water and energy concerns resulting from oversized water supply pipes in homes and buildings.

The entire Arup report may be viewed at https://iapmo.org/media/31469/iapmo_energy_savings_arup_report.pdf.

IAPMO's Water Demand Calculator may be downloaded at <https://www.iapmo.org/water-demand-calculator/>. For more information, contact Dan Cole at dan.cole@iapmo.org. 

**Analysis conducted by Arup, a
global collective of designers,
consultants and experts dedicated
to sustainable development.**

Research **Christoph Lohr**, P.E., said. "With concerns of energy reduction and water savings being top of mind for many regions in the United States and the world, having the latest methodology to meet goals is vital. We greatly appreciate Arup providing IAPMO with a third-party evaluation of the potential for the Water Demand Calculator to help meet sustainability goals."

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One Contractor's Success Using Construction-Specific Software

BY TERRI GRESHAM, SPECIAL TO CONTRACTOR

As one of the Pacific Northwest's leading full-service, design-build mechanical contractors, UMC has played a key role in some of the region's most iconic and complex projects—from the original build of the Seattle Space Needle in the 1960s to the Amazon Spheres, which are three dome-like glass structures at the online retail giant's Seattle campus.

Today UMC is known for working directly with clients to design their systems from the ground up, providing everything from design engineering and energy consulting, to building automation and routine equipment maintenance and repairs.

However, as UMC has continued to expand its services in recent years, growing pains started to become more evident, particularly the collaboration and data gaps between accounting, HR and project management. "There was a lack of connection between these systems and a lot of manual processes and double entry happening," said **Chris Betlach**, UMC's IT Director.

According to Betlach, the gaps were the result of multiple third-party software systems that couldn't easily share with one another or with UMC's existing ERP platform. The company also had limited digital recruiting, onboarding and other HR capabilities, which was slowing their workforce pipeline.

"It was time to move to the cloud," Betlach said. "We realized that lack of data interconnectivity was keeping us back."

From On-Prem to the Cloud

While UMC had utilized Trimble Viewpoint's Vista ERP platform since 1998, all of the data was located on-premise, which was a lot for the IT department to manage. "Having all of our data on-prem meant that we had to do all the updates, security and backups in-house," Betlach said. "If you're short staffed, which most companies are given the difficult finding and retaining talent, it can be a lot to keep up with."

UMC made the leap to the cloud by upgrading to Trimble Construction One,



The Amazon Spheres -- one of UMC's more dramatic projects.



The Enwave smokestack replacement job.

UMC moves to the cloud to empower employees and streamline systems.

which brought forth a host of new benefits, the biggest of which was replacing multiple third-party vendors with a single suite of construction-specific business applications that share data and workflows. Since moving to the cloud, UMC has seen improvements in many areas, particularly in security, human resources and payroll automation.

Since moving to the cloud, it's been great to have an external support team manage patches and updates, while also consistently monitoring the system for abnormal behavior or potential security threats," Betlach said.

Empowering Employees

In addition to enhanced security, the cloud also enabled upgrades to UMC's HR operations, largely by digitizing and streamlining traditional HR workflows like recruiting, hiring, onboarding and training.

"Before moving to the cloud, our onboarding process was a manual pen-and-paper process, with employee information double-entered into multiple systems," said Betlach. "Now employees can enter their own information, and it's internally connected to other systems like payroll. This has cut our onboarding

time by half because the paperwork is easier to complete and legible."

Employees can now self-serve many of their own HR needs like viewing pay stubs, entering and tracking time, and updating personal information through easy-to-use online portals. This takes the burden off HR teams and puts the power into employees' own hands.

Applicant tracking and onboarding features have also helped streamline data collection, making it easy to produce reports for executive teams and for EEOC compliance. UMC can now easily capture demographics, number of applicants and sourcing, and give immediate updates to their executive and HR teams.

Automating Payroll

Another benefit of the cloud has been the ability to track and record time digitally, with the added ability to "clone" timesheets week-to-week. This has been particularly helpful for office staff who work on the same jobs every week.


For the accounts payable (AP) and payroll (PR) teams who work on many jobs, UMC found that by using the previous week's data, they were able to accurately calculate the time spent

processing AP and PR to apply overhead time to those jobs. The calculated data is then auto-populated into those team's timecards, saving them from having to manually input their time.

"This saves the accounting team several hours each week since they no longer have to guess how much time they've spent processing payroll for jobs or doing one invoice over another," Betlach said. "It's been a huge time-saver for us, and we're looking to replicate it for our contract administration and purchasing teams too."

A Data-Focused Future

Since moving to the cloud, UMC has been able to consolidate multiple software systems into one, simplifying the administrative burden while also providing the company with a scalable technology platform that provides enhanced security, HR and payroll automation benefits.

"At the end of the day, we look at data as an asset that we want to use to automate tasks and make as many data-driven decisions as possible," Betlach said. "Doing so allows us to be more efficient so that we can work on more value-added tasks and make decisions that are grounded in data versus guesswork." 

Terri Gresham is the Manager of HR and ePayments Specialists at Trimble Viewpoint. She has 20 years of experience in HR Technology.

10 Expert Tips to Ensure Safe Sewer Cleaning

► Continued from page 48

typical cleaning, 1,000-1,500 PSI is normal. To remove a blockage, pressures as high as 5,000 PSI may be reached.

“Sewer cleaning nozzles at extremely high pressures should only be used in a pipe,” cautions Story. “If a nozzle is used outside of a pipe, it can whip around like a fire hose. I have seen sewer nozzles and hose go up and wrap around telephone wires. I have seen nozzles over 60 feet in the air.”

Tip #7 — Use a hose with a robust safety factor to prevent bursting.

Since hose and nozzle pressures can be so high, it is important to utilize only robust hose of sufficient strength to ensure safe use over time, according to Story.

“Most operators and municipalities overlook the possibility of burst hoses. However, hose is gradually cut going in and out of sewer pipe. The braided nylon weave remains, but every layer that is cut reduces hose strength and the corresponding PSI that can be run,” says Story.

Tip #8 — Properly size the nozzle-to-hose connection to prevent nozzle “ricochet”.

If the nozzle-to-hose connection is not sized properly, it can lead to a dangerous, high-pressure “ricochet,” where the nozzle and hose can suddenly turn around and come back at the operator.

One way to prevent nozzle “ricochet” is to size the nozzle-to-hose connection properly, according to Story.

“As a rule of thumb, the distance from the tip of the nozzle to where



What sets the most efficient Tier 3 nozzles apart is fluid mechanics engineering on a par with the aerodynamics of race cars or jet fighters. Tier 3 nozzles can deliver safer sewer cleaning at lower PSI.

the hose connects needs to be approximately one-and-a-half times the size of the pipe diameter you are cleaning. Sizing it in this way can help to prevent the nozzle from turning around and coming back at you,” he says.

He also advises against “free spooling” a nozzle up the sewer line.

“Any time you free-spool a nozzle up the line, you lose control of the nozzle—and it can ricochet back at you. To prevent this, use a nozzle skid and hold the nozzle back,” says Story.

Tip #9 — Choose the right nozzle for the job to reduce turbulence and wear.

As is known throughout the industry, there are several tiers of nozzles,



rated for water efficiency from Tier 1 (about 30% efficient), Tier 2 (50-60% efficient), to Tier 3 (75-98% efficient).

What sets the most efficient Tier 3 nozzles apart from others in the category is fluid mechanics engineering on a par with the aerodynamics of race cars or jet fighters. In the case of KEG Technologies’ Tier 3 nozzles, the high-performance fluid mechanics design leaves little room for power losses and excessive turbulence.

By more effectively containing, controlling, and directing high-pressure water with less turbulence, a Tier 3 nozzle can deliver more cleaning power at lower PSI. This eliminates the need for operators to compensate

for the lack of power from Tier 1 or 2 nozzles by increasing the pressure to higher PSI on the way back through the line. Ultimately, less PSI (with a better, faster result) makes for safer sewer cleaning, as outlined in many of the tips above.

Tip #10 — Slow and steady wins the race – and is safer for operators.

The number one mistake of most sewer cleaning operators that puts them at risk is rushing through the process, according to Story.

“Most operators run their nozzles way too fast. Rushing to clean more footage of sewer pipe is dangerous. To clean safely, keep the nozzle slow and steady and let it do its job,” says Story.

To stay safe and productive, Story advises contractors to never outrun their water, or they risk losing control of the process and will eventually run into a blockage.

“Sooner or later operators will run into a blockage of roots, grease, mineral deposits, or cave-ins that will plug up their front jets. Then they no longer have a penetrating tool but a battering ram—a nozzle with no forward jets trying to feed its way through the blockage,” says Story.

He advises, “For greater operator safety, slow down even more to remove a blockage and let the nozzle do the work. The reason we put forward jets on the nozzles is to safely open the blockage before the nozzle arrives. Slow down and the water will open the blockage before the nozzle ever gets there.”

While there is much more to the practice of sewer cleaning, following these 10 tips will go a long way toward keeping operators safe and productive on the job for many years to come. Those seeking a more comprehensive understanding of best-in-industry safety practices can train in person or virtually with KEG Technologies in the timeframe most suitable for them. **G**

Del Williams is a technical writer based in Torrance, California. For more information visit www.kegtechnologies.net, or write to KEG Technologies Inc. at 6220 N. Pinnacle Drive, Spartanburg, SC 29303.

Tips for Funding Your Small Business with Grants and Loans

► Continued from page 50

pay for a vacation), you can be found guilty of crimes like embezzlement or theft. It’s also illegal to use bribes to sway grant program decision-makers.

“Grant programs for small businesses are created to help owners pursue their dreams, and that’s what the vast majority of recipients do,” adds Shelley. “The concept of grant fraud shouldn’t dissuade you from accepting money. It’s just another reason to review the

information about a program carefully and talk with the offering organization and your financial advisor if you have any questions or need clarification about the requirements.”

Find Your Funding Today!

From new business grants to loans for established organizations, there are countless programs for getting a financial boost for your company. Whether you require capital now or

anticipate a need down the road, it’s wise to familiarize yourself with your options today. **G**

Rakesh Gupta is chief operating officer at biBERK, part of Warren Buffett’s Berkshire Hathaway company. biBERK specializes in commercial insurance for small businesses. In his role, Gupta focuses on simplifying the insurance buying experience using technology and process innovations that make it easier for small business owners to get the coverage they need.

Contractor University Launches Training Series

SACRAMENTO, CA — Contractor University powered by EGIA, the nonprofit trade association dedicated to contractors' success, has officially launched the third installment of its annual Seizing the Summer series to help contractors thrive during the high-demand summer busy season.



The 14-segment video training series will deliver a weekly 20-30 minute training video from acclaimed trainers and business coaches on a wide range of topics specifically tailored to address the challenges contractors face throughout the summer months.

Each expert-led training segment features proven strategies that can be immediately implemented to succeed in a competitive summer market. From lead generation and effective sales techniques to optimizing operations and maximizing revenue, contractors gain access to invaluable insights that can help them fully capitalize on the opportunities the summer brings.

Unique Challenges

"We understand the unique challenges that contracting business owners face during the summer season, and that's why we created the Seizing the Summer series" said EGIA CEO Bruce Matulich. "This comprehensive training program is designed to equip our members with the knowledge, strategies, and practical insights they need to fully capitalize on the summer rush."


The Seizing the Summer series begins June 5, 2023, with a new episode airing every Monday through September 5, 2023. Topics include:

- Developing a Summer Execution Plan
- Budget Strategy for a Digital Marketing Plan During Summer
- Employee Training During Peak Season
- Promoting from Within During Expansion
- Retaining Your New Summer Customers for Life

- How to Let Your Labor Know that You Care
- Pricing for Seasonality
- Executing the Perfect Service Call When It's Hot
- Lead Turnover – Should the Tech

Sell it or Turn it Over?

- Technical Tactics – Maximizing Opportunities and not Compromising When it Gets Busy
- How Did We Do? – Communicating Summer Results

Contractors who are not currently members of EGIA Contractor University can access a free 30-day trial to access the Seizing the Summer training series—and thousands of other helpful business resources by visiting EGIA.org/UnlockSTS. 

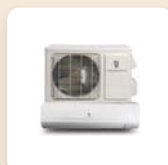
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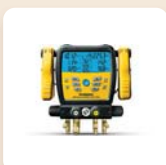
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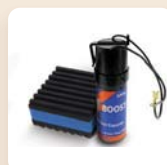
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Interactive Plumbing Trainer College Project Wins Attention, Accolades

► **Continued from page 6**

“Our goal was to design a plumbing trainer for a construction class at Elizabethtown Area High School,” explained Kurtz. “It was composed of four main parts: two physical trainers, activities for the trainers, lessons, and lesson plans to prove that the activities met state standards. We also provided an exploratory introduction to plumbing as a potential career.

“Previously, there was no means at the high school to provide a training tool to teach plumbing techniques; that’s why our design was tailored to meet the need,” she added. “We relied heavily on the input of local plumbers, so the activities provide an accurate representation of necessary skills. Gaining multiple perspectives from tradesmen was crucial to the success of our project. The trainer, made of 2x4 frame, includes PEX, PVC and brass fittings. It’s also interactive so that two students can work with them simultaneously. The trainers contain a water filter, washer box, backflow preventer and drainpipe—that connects to a utility sink. These activities were chosen to provide exposure while minimizing overall cost.”

When the project was underway, the students designed the trainer with the help of CAD technology (Autodesk Inventor), provided by the college and guided by Doxzon while on MS Teams.

With care, the college students designed closely consulting IAPMO’s 2019 Uniform Plumbing Code (UPC) to validate the components and their



The trainer was conceived as both a conceptual and hands-on device for students to learn and practice basic plumbing.

precise arrangement within the trainer model. The students also were guided by IAPMO plumbing book. Doxzon also provided guidance in interpreting and applying applicable codes. The students also developed development an activity and training booklet designed to guide use of the trainer.

“An important message for future users of the plumbing trainer is that the booklet, in tandem with the trainer, are intellectual concepts that have real outreach potential,” said Kiscaden.

“Outreach for who?” you might ask. Well, *anyone* who wants to learn the basics of plumbing but might have “conceptual blockage” when confronted exclusively with written, *especially*

technical, information. If a picture’s worth a thousand words, just consider the value of this simple model; it covers a *lot* of ground.

A ‘Best of’ Project

The students received a stellar grade for the project. The plumbing trainer also won the college’s “Recognition of Excellence and Professional Potential” achievement, which is awarded to one outstanding sophomore project each year.

“The goal was to design a trainer to introduce high school students, or those new to the trade, to the fundamentals of plumbing, and to allow them to connect with local plumbing businesses,” said Klinefelter.

Watts and VBA donated materials, and Doxzon assisted the students with the trainer’s design and construction. “Linking business to education is one of the many ways ABC Keystone recruits the next generation of industry professionals,” said Doxzon. “It’s still too early to see what happens as a result of this project, but the potential is really good.”

“The project was just too good for me pass up,” added Kiscaden. “Considering my connections to both schools, and the direct-hit applicability to my role at Watts—one of the plumbing industry’s giants—brought everything together so remarkably.”

The students worked under the direction Elizabethtown College staff members **Dr. Mark Brinton**, assistant professor of engineering and physics; **Dr. Brenda Read-Daily**, associate professor of engineering; and **Stephanie Zegers**, MSL, assistant director of engineering and industry liaison.

ABC, founded in Baltimore in 1950, is a national construction industry trade association representing more than 22,000 members in 68 chapters. Today, ABC represents all specialties within the U.S. construction industry and is comprised primarily of firms that perform work in the industrial and commercial sectors.

“This was an exciting project and I wanted to again extend my congratulations to everyone who was involved. For me, the most thrilling portion was the addition of a residential backflow preventer into the design,” Kiscaden said.

“Our backflow preventers are designed to avoid the reverse flow of polluted water from entering the potable water supply if an unexpected back siphonage or backpressure event occurs,” he added. “We know that backflow preventers keep water safe and now with connected capabilities also aid in water conservation. Adding this crucial plumbing element was the extra icing on the cake.

To learn more about the importance of backflow preventers visit: <https://www.watts.com/our-story/news-and-events/backflow-prevention-day>. (National Backflow Prevention Day is 8/16/23.) **G**

Digital Water Saves Millions for Communities, According to Leading Utilities

WASHINGTON, DC – Leading water utilities are increasingly embracing data analytics and digital technology to optimize their operations, save millions for communities and increase water networks’ resilience to climate change.

Insights from 18 global water utility leaders and experts that are influential in early-stage digital adoption are featured in a new paper from water technology leader Xylem (NYSE: XYL) and Bluefield Research. These utility

experts share perspectives on how “going digital” is helping them to solve big water challenges in their communities. Their shared expertise provides a blueprint to accelerate the modernization of 400,000 water, wastewater, and stormwater systems worldwide.

Utilities that participated in the paper implemented digital technology to save billions of gallons of water, prevent millions of gallons of sewer overflow pollution, and save millions of dollars in energy costs.



For example, in Cincinnati, Ohio, the Metropolitan Sewer District of Greater Cincinnati used data and digital solutions to give its existing infrastructure new capabilities.

View the paper and associated resources at: www.xylem.com/RippleEffect **G**

Future Female Leaders Attend Construction Camp

PHILADELPHIA, PA — Local Philadelphia-area girls entering 7th through 12th grade will attend a free construction camp this summer to provide real-world experience, mentorship, and education about the opportunities that exist in the construction industry, regardless of gender. The camp is called MyWIC, which stands for Mentoring young Women In Construction and will take place in Philadelphia between Thursday, July 6 through Friday, Aug. 11.

MyWIC is run by the NAWIC Philadelphia Foundation, which partnered with companies like NEST, a leading national facilities management company, and Girls Inc. of Greater Philadelphia & Southern Jersey to make it a reality. The camp strives to create a sustainable labor pool in the construction industry while exposing young women to careers that they may not have previously considered. The Philadelphia Youth Network Work Ready also provides funding.


“MyWIC is developing America’s next generation of female leaders by teaching them about the construction and skilled trades industry,” said **Mary Gaffney**, NAWIC Phila. Foundation President. “Females make up only about 10% of the construction industry, and there are incredible opportunities to build a career in the skilled trades. By the end of the camp, we see a tangible increase in the girls’ self-confidence, self-esteem, and overall self-image.”

“The construction industry and the skilled trades offer so many opportunities for future careers that are in high demand, not only in Philadelphia but across the country,” said **Rob Almond**, CEO of NEST, which is based in South Jersey. “The MyWIC camp is a summer-long tradition that shows the girls the incredible career opportunities in our industries. The girls learn that construction is so much more than swinging a hammer.”

The construction camp will take place at several trade locations throughout the Philadelphia area during July and August. Each day, the girls will learn about a specialty within the trades, including carpentry, sheet metal, safety training, electricians, finishing trades, steamfitters, plumbers, and retail construction. Dates of the



construction camp include July 6 / 7 / 11 / 12 / 18 / 20 / 25 / 26 / 27 and August 1 / 2 / 3 / 8 / 10.

The attendees of the camp are coordinated by Girls Inc. of Greater Philadelphia & Southern Jersey. 



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Compel New Prospects and Existing Customers

► Continued from page 52

conditions and comorbidities that led or will lead to equipment failure. Some problems you should speak to include:

- Rooms that get too hot or too cold
- Cannot maintain consistent comfort
- Uneven temperatures from area to area
- Equipment cycles frequently or runs all the time, and the house is still not comfortable
- Poor temperature control
- Thermostat wars amongst occupants
- Drafts or stuffiness
- Not enough airflow
- Noisy equipment or airflow
- High utility bills
- Clammy, muggy, musty, etc.
- Too humid in summer
- Too dry in winter
- Odors in the house when the system runs

- Poor air quality
- Dusty
- People suffering from allergy, asthma, respiratory conditions
- Equipment problems since the equipment was installed or since you moved in
- Frequent equipment breakdowns
- Other contractors say problems cannot be fixed

As a high-value comfort specialist, you can help homeowners understand why new equipment alone will not solve their problems and may make matters worse. Band-aid fixes can damage their investment.

Temporary fixes usually address a symptom rather than providing a permanent solution to a root cause. The performance contracting approach of testing and measuring can transport occupants from purgatory to paradise when it comes to living a good life in a safe, healthy, comfortable,

energy-smart, responsible, and sustainable home.

More Than Customer Benefits

As you can see, the benefits to the customer are many, but being a performance HVAC company also benefits the contractors and their coworkers. Most typical HVAC contractors wait for the weather to generate service calls to create equipment leads and sales.

Then they sell standard entry-level products or promote high efficiency and advanced technology equipment as a silver bullet for comfort and efficiency problems without addressing the duct system or building envelope.

Such a limited business strategy provides for erratic workflow, revenue, and profitability, which creates work overload and shortages.

Neither of these circumstances are conducive to maintaining steady work for coworkers and may even result in

layoffs in slow times or people quitting when they are expected to put in overtime to cover for staff shortages.


Be More Compelling

Performance contractors know that HVAC and IAQ equipment will only work as effectively and efficiently as the design, installation, duct system, equipment-tuning, and building envelope allow. They know that installing high-efficiency advanced-technology equipment on a poor duct system and in an archaic building envelope is a recipe for wasting energy more efficiently (the equipment is more efficient, but the energy bills will not benefit from its full potential) and shortening the life of that equipment. Their creed of “do no harm, make things better, and leave people happy” would never allow them to do so.

The above reasons are why performance contractors relentlessly pursue existing customers over new prospects. When these contractors find problems that an antiquated industry has long neglected, they cannot turn their backs on the suffering people.

Instead, they are more compelling and apologize on behalf of the industry and commit to being better by genuinely serving the people.

Go forth and do likewise!

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Drew Cameron is North America's Most Sought-After Sales and Marketing Strategy and Success Advisor to Home Services Contractors through his work as the founder and CEO of Flow Odyssey, president and co-owner Energy Design Systems, LLC, and board member, Foundation board trustee, Contractor University Founder and Faculty member, and Resident Expert of Contractor Connect for Electric & Gas Industries Association (EGIA). Contact dcameron@egia.org.

Florida Forensic Plumber to Speak at State Insurance Convention

NEW PORT RICHEY, FL – Tom Shell Plumbing, Inc., a New Port Richey, Florida-based plumbing company providing services ranging from plumbing repair to installation, announced today that owner and operator Tom Shell will speak at the 2023 Florida Insurance Fraud Education Committee's annual conference in Orlando on July 14.

Shell has served as a master plumber in the New Port Richey area since 1997 and has worked as an expert insurance fraud investigator researching plumbing-related claims since 2018. He will lend his expertise to the “Fighting Fraud in Late Reported Homeowners' Claims” panel along with experts from the legal and construction fields. The convention runs July 12-14 at the Renaissance Orlando Hotel.

“It's an honor to be included in this panel with other experts in the insurance fraud and claims fields,” Shell said. “Investigating claims and testifying in court has given me the experience necessary to address the best practices necessary to determine the origin



Tom Shell, Tom Shell Plumbing, Inc.

and cause of various plumbing claims. I look forward to hearing from the other experts on the panel and addressing strategies that will help the audience as they pursue litigation in these cases.”


Shell began investigating insurance claims related to the plumbing industry after receiving a request from a law firm that he lend his expertise in the field to help them research potential fraud in homeowner insurance claims. He is now considered the primary expert plumbing witness in Florida.

Shell said he didn't always want to be a plumber but was working for his father at Tom Shell Plumbing in the mid-1990s while attending school to

become a doctor. In an effort to earn more money, Shell took time off school and sat for his master plumber's certification the day he had served as an apprentice plumber long enough to take the exam—five years—and passed, making him the youngest master plumber in the state at the age of 23 years old. He stayed on at the company and eventually took over for his father in 2004.

“Now, in addition to working as a master plumber, it's my job to investigate claims and testify in court,” he said. “I can use my experience investigating claims to improve my own plumbing business. That ensures our customers get the best plumbing services available in the area.”

In addition to court and insurance investigations panels, Shell and his company have been featured on ABC's “Extreme Makeover: Home Edition” and on the podcast Potty Talk.

For more information about Tom Shell Plumbing, Inc., please visit <https://tomshellplumbing.com/>. 

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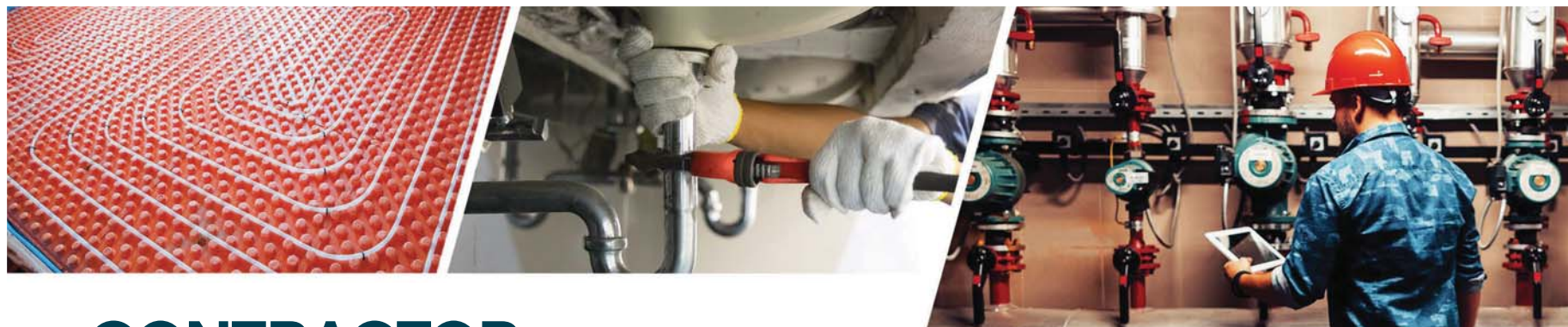
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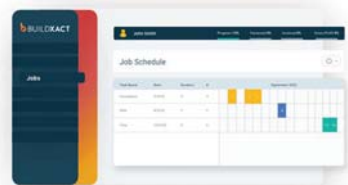
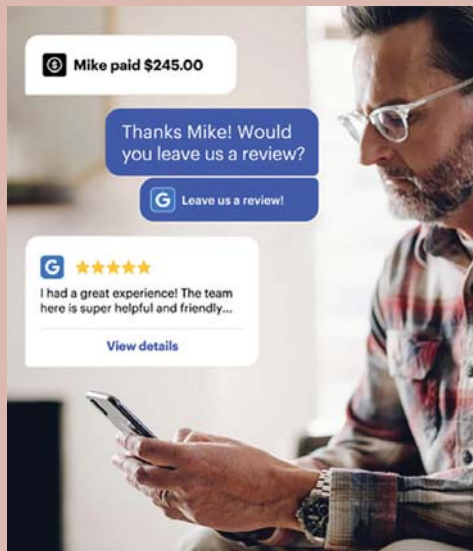


software spotlight

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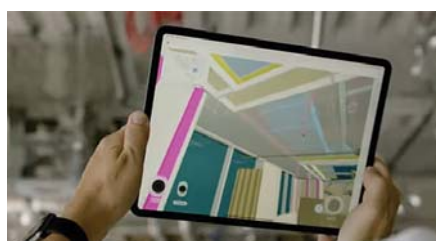
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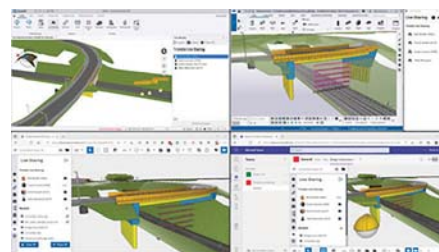
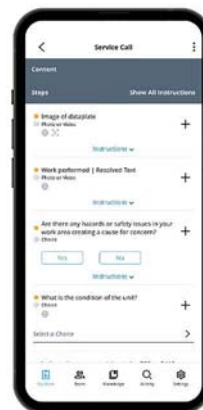
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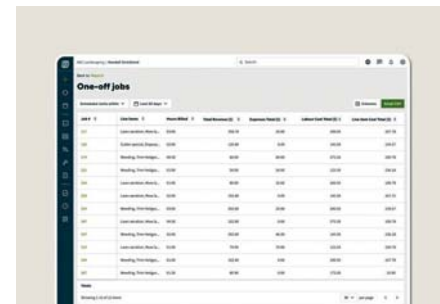
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editor's choice

ROOT 66 DRAIN CLEANER can handle 1¼" to 4" drain lines. It uses 5/8-in. or 7/8-in. sectional cables interchangeably; no need for special adapters or tools. Depress the drive handle for plenty of cable torque from the ½-hp capacitor motor. A wide, four-point base provides stability. The optional drum with smaller ¼", 5/16", or 3/8" continuous Flexicore cables clears sinks and small drain lines. The optional 7/8" Proflex sectional cables sport an inner spring for greater strength. And the 5' by 7/8" (SR-10) Force Multiplier sectional cable is good for hard-to-access areas.

General Pipe Cleaners

WWW.DRAINBRAIN.COM/ROOT-66



▲ HYDROPANEL R3 DRINKING WATER SOLUTION from Source Global provides high-quality, renewable drinking water. Operating completely off-grid, it uses solar energy to move air through special water-vapor-absorbing materials. This water is then released from these materials and condensed and stored.

Source Global

WWW.SOURCE.CO/HYDROPANEL-R3

► THE NOM CRIMP BARB INLET/COMP OUTLET QUARTER-TURN ANGLE VALVE

controls water flow to household plumbing fixtures where the water pipe enters the room from the wall. With a 90° turn of the valve handle, the flow of water leading to the plumbing fixture is stopped, allowing for maintenance and repair without shutting off the water to the home.

BrassCraft

WWW.BRASSCRAFT.COM



▲ 14 SERIES SINGLE-HANDLE LAVATORY FAUCET features a geometric spout and cylindrical body, lever handle, brass construction, one-hole installation, a ceramic cartridge, 50/50 pop-up drain assembly, and easy-install 18" flex supply lines with 3/8" connections. Available in chrome, brushed nickel and matte black.

Olympia Faucets/Pioneer Industries

WWW.PIONEERIND.COM

► SHK-1 FULL-BRIM SAFETY HELMET

is designed to prevent traumatic brain injuries. It is the only full-brim safety helmet that complies with ANSI Z89.1 Type I and II standards, meaning it is designed to reduce force as a result of impacts to the front, back, sides and top of the head. The Koroyd welded tube polymer absorbs impact and improves heat dissipation.

Studson

WWW.STUDSON.COM



▲ CITADEL COMMERCIAL CONDENSING BOILERS are available in five capacities from 399 to 1,000 MBH. They can be stacked two-high without the need for accessory racking systems. Zero side and top clearance optimizes the amount of BTUs that can be offered per square foot. AHRI-certified and rated to 97% thermal efficiency, the boiler is available for either a natural gas or propane.

US Boiler Co.

WWW.USBOILER.NET

► VIZZ SERIES HEADLAMP has a Maxbright LED that creates a powerful flood beam, a pair of white Ultrabright LEDs to deliver a flood beam, and two red Ultrabright LEDs to handle close-range lighting while preserving night-adjusted vision. It delivers consistent light output over an extended period.

Princeton Tec

WWW.PRINCETONTEC.COM



▼ FIXTURE OUTLET BOXES are designed for use in commercial and residential applications and allow for installation of water supply valves during the rough-in phase. Come with different tail piece designs, making them compatible with different pipe types, including PEX, copper and CPVC.

HoldRite/RWC

WWW.HOLDRITE.COM



▲ TRENCH BOX G-RAIL RECEIVER keeps workers safe while working near exposed or deep trenches. OSHA-compliant, it offers easy installation onto a variety of trench box walls and configurations, and is the only receiver to offer to offer multiple guardrail receptacles.

Guardian

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► EZ SERIES RESIDENTIAL CONDENSING TANKLESS WATER HEATERS

features a new burner control to handle high incoming water temperatures in the summer. They are designed to speed replacement of conventional storage-tank water heaters. They offer an improved Uniform Energy Factor of 0.96.

Noritz America

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▼ EVERLOC+ POLYMER MULTI-PORT TEES include closed-end, flow-through and opposing port configurations. The increased range of 22 polymer multi-port tees provides more tailored options for multifamily and other light commercial projects. Tees function as reducing tees in home-run piping layouts, while minimizing the number of connection points.

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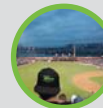
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by Steve Spaulding
EDITOR-IN-CHIEF



Parallel Industries

As we were putting together this month's Made in America feature (which starts on pg. 28), I could not help but notice the many parallels between manufacturing and mechanical contracting.

Maybe that's just because we're all a part of one big happy (or, as the economic winds blow, not-so-happy) economy, all drawing from the same labor pool, all feeling the push and pull of the same macroeconomic forces.

I think another factor is the hands-on nature of both industries; for all the technological advances we've seen in recent years, there are some tasks in both manufacturing and in contracting that simply can't be automated or done remotely.

Yet, because manufacturing happens in a much more controlled environment (the factory), it leads contracting in the use of automation, particularly robotics. And until they build a plumbing robot manufacturing probably always will.

Which is not to say that contracting isn't making leaps and bounds in that direction. A lot of the prefabrication

facilities used by larger mechanical contractors are every bit as busy, efficient, safe and productive as any factory floor.

The use of CAD, BIM and other digital design tools have bled from manufacturing into contracting. Now entire buildings

Both industries are finding it difficult to hire. Both have been hit by decades of parents and educators telling kids that college is the only viable path to success. Now the best, most experienced workers in both industries are approaching retire-

took a harder hit than contracting in the 70s and 80s when then price of moving manufactured goods dropped so low it made sense to offshore production. Suddenly, domestic manufacturing jobs that offered a living wage seemed thin on the ground. (Let this serve as an object lesson to young people starting out in the trades—they will never be able to offshore a visit from the plumber!)

But American manufacturing has been making a comeback. The cheap labor that fueled offshoring is getting harder to find. Also, during the COVID pandemic, we discovered there were critical pieces of our supply chain we didn't want dependent on foreign countries. Add to that new federal investments in things like electric vehicles and semiconductor chips, and it looks like American manufacturing could be in for a renaissance.

Let's hope it's a tide that lifts all boats. Contractors depend on manufactured tools and materials to get their work done. Being able to source domestically means helping to build a stronger, more stable economy that benefits us all. **C**

From technological innovation to workforce development, both contracting and manufacturing have a lot in common.

are designed with the same precision as the pumps, boilers and valves that go into them. All the different trades all working off the same 3D (sometime 4D) model, with changes instantly propagating to all the different teams, with clashes and conflicts all resolved before they even come up.

And in terms of the software that manages their employees or faces their clients, there isn't really much difference at all. (Turn to pg. 55 to read how one contracting firm, UMC, is moving to the cloud to streamline its HR and payroll systems.)

ment and there are not enough young people in the pipeline.

As a result the industries are partnering in ways large and small to try and get younger people excited about working with their hands. We have plenty of examples in this issue. On pg. 36, read how RIDIGID is trying to get kids interested in STEM. On pg. 59, read how MyWIC is getting girls interested in the construction trades, and how Xylem is encouraging young people to take an interest in the world's water challenges.

The manufacturing sector in the US

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