> Ballanco: Lead in drinking water continues to be a hot topic for NSF

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Toyota dealership recycles used auto oil to fuel radiant heating, project wins green building award.

> Siegenthaler on air-to-water heat pumps

> Connectivity drives water heater and boiler trends at AHR Expo

From left, Mowery's Wayne Howe and Steve Knaub, and H.B. McClure Co.'s Adam Shamenek, P.E., at the Koch Toyota dealership in Easton, Pennsylvania.

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Show returns to Atlanta for the first time since 2001.

OUR COVER THIS MONTH

From left to right, **Wayne Howe**, director of MEP Services at Mowery; **Steve Knaub**, director of design in preconstruction at Mowery; and **Adam Shamenek**, P.E., engineer at H.B. McClure Co., stand in front of the new Koch 33 Toyota dealership in Easton, Pennsylvania. The project was named a 2018 U.S. Green Building Council Central Pennsylvania Leader Award recipient — receiving the commercial project of the year award for its design build. Underneath, a system of radiant heating is powered by used automotive oil boilers. Check out page 34 to read the full report. **Photo courtesy of Mowery.**

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Greetings from the new chief editor

Let's raise a toast to the new year and an exciting future at pme.

In the spirit of the New Year and fresh beginnings, I'm excited to introduce myself as the new chief editor of ***pme***.

In the year ahead, expect to see a sharper focus on the topics and subjects that bring you back to the magazine every month, in addition to timely stories covering new ground. Toward that effort, I want to hear from our readers and industry partners. Don't hesitate to call or email me with comments, suggestions or invitations to meet in person. I want to visit your facility, office or jobsite. You can find my cellphone number and email address at the bottom of this page. I also look forward to meeting many of you for the first time at the AHR Expo this month in Atlanta, where you're all invited to stop by our BNP Media party from 4–6 p.m., Monday, Jan. 14 at booth #B1439.

A little about me: I arrive at ***pme*** following four years as an associate editor with fellow BNP Media publications *Quality* magazine and *Appliance Design*. Before that, I was the city hall reporter for a daily newspaper in central Illinois, and then a general news reporter for community newspapers in Chicago's western suburbs.

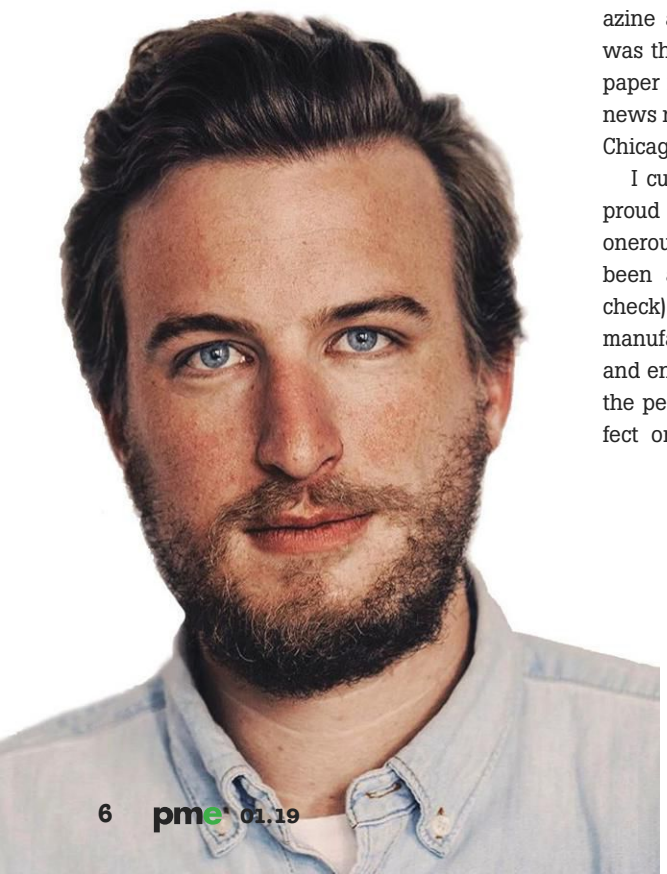
I currently live in Chicago, a city with a proud manufacturing history and famously onerous building codes (there may have been a large fire — will have to double check). I care immensely about the trades, manufacturing, infrastructure, construction and energy use — their health as industries, the people who work in them and their effect on the built environment around us. Plumbing engineering plays an integral role in all those pursuits, and it's exciting to lead a magazine with so many important applications.

Speaking of fire prevention, this month's edition features an indispensable column from **Jacqueline Wilmot** on standpipe requirements at marinas and piers. Additional highlights include a look at radiant-heating systems fueled by boilers that run on automotive waste oil, and a preview of what to look for at the big show this month in Atlanta.

Longtime ***pme*** columnist **Julius Ballanco** also covers a topic important to me, specifically as a Chicago resident — lead in drinking water. It's relevant regardless of your location, but especially so for those of us living in old cities. As Ballanco says in his article, "The worst thing you can do as an engineer is say, 'Don't worry about it.' If you hear of lead in drinking water, worry about it." That simple advice extends beyond drinking water. The worst thing I could say as a chief editor is, "Don't worry about it." I won't.

This month, I'm also keen to point out our *Movers and Shakers* page (p. 26), which has a fresh look. It's a hint toward the year ahead when you should expect to see a full redesign of the magazine.

So, let's raise a toast to the new year and to an exciting future for ***pme***. pme



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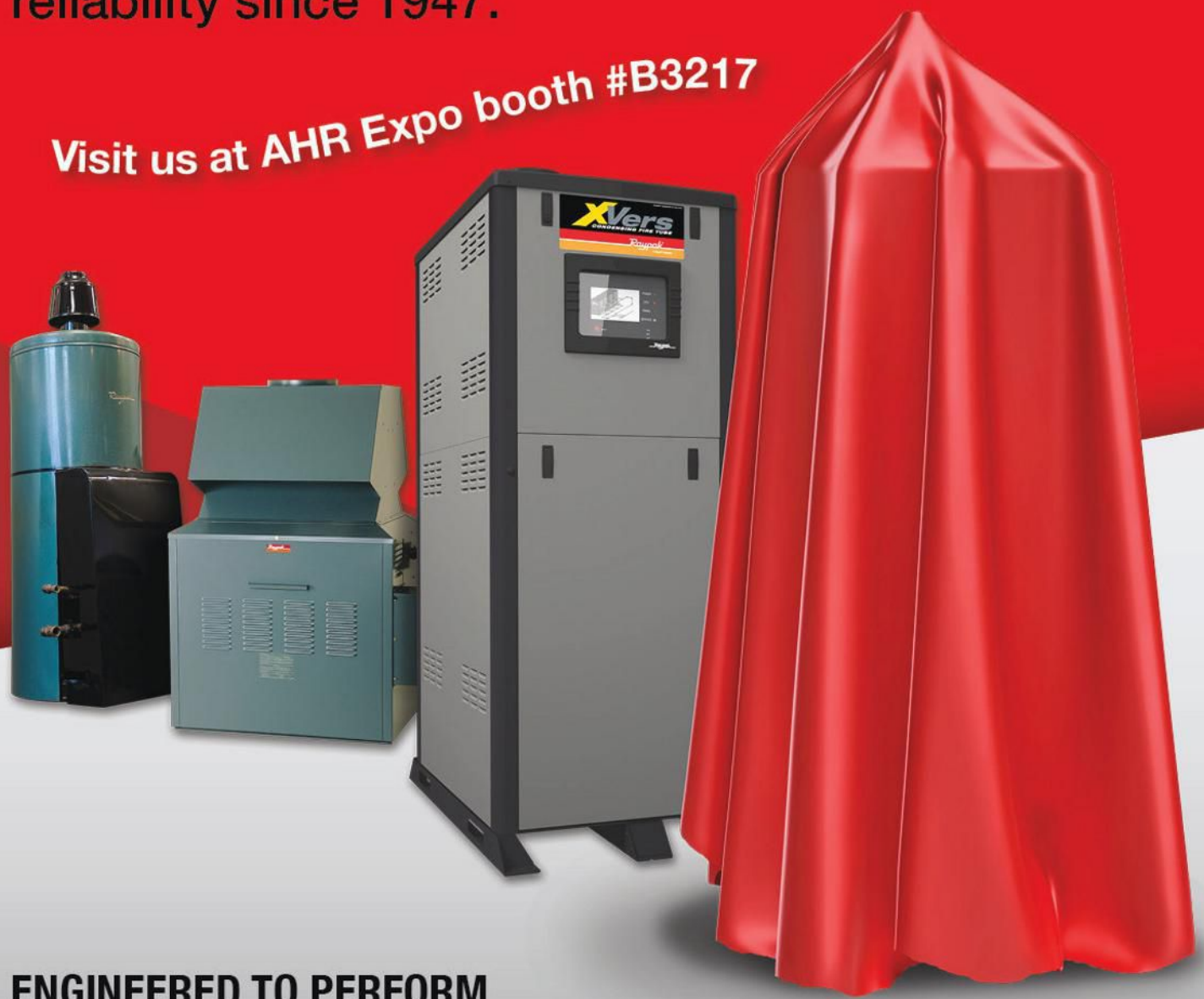

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Julius Ballanco, P.E., CPD, F-ASPE

Lead still a drinking water concern

Has the plumbing industry done enough?

Ten years ago, I wrote a column that I entitled "No lead is good lead." The column raised a number of eyebrows and is still quoted today. Actually, that column was written well after my first involvement with lead. I first got involved with lead in drinking water concerns in the early 1980s. I was interviewed for the Chicago local news in 1986 regarding lead in the Chicago drinking water.

When I was invited to participate in the development of a new standard involving plumbing products and water quality, I jumped at the opportunity. That committee eventually developed the first edition of NSF 61, *Drinking Water System Components – Health Effects*, which was published in June 1988. The standard celebrated its 30th year last June.

NSF 61 is adopted by every plumbing code. It is also adopted by just about every state in the nation. For the states that don't directly adopt NSF 61, it is adopted in the state's plumbing code. Hence, there is a mechanism for enforcing the standard.

NSF 61 is developed by The NSF Joint Committee on Drinking Water Additives. I have been a member of that committee since its inception. The committee meets once a year, the week after Thanksgiving. This year's meeting had a full agenda.

One of the hot topics continues to be lead in drinking water. There were multiple issue papers presented on lead in drinking water. If you are wondering why there is a renewed interest in lead, a lot has to do with recent headlines in newspapers, news reports, and social media regarding lead in schools and lead in the water supply in Flint, Michigan.

While this may appear to be a renewed interest, realize that lead in drinking water is part of the discussion at every meeting of The NSF Joint Committee on Drinking Water Additives. Lead was, and still is, a major concern. No lead is good lead.

Photo credit: ©gettyimages.com/SolStock

During this past year's meeting of The NSF Joint Committee on Drinking Water Additives, one of the speakers basically stated that the plumbing industry isn't doing enough. That may not be exactly what the speaker said, but that is what I heard.

As I was listening to the presentation, I became more and more infuriated. What I was hearing was that we, as a profession, have been ignoring the problem of lead in drinking water for all these years. Now we have to do something.

Before I could enter into the conversation, I had to calm down, realize that the speaker was new to the work of the Joint Committee and remember to be polite. All too often, I concluded, we become defensive rather than entering into rational conversations.

Has the plumbing industry done enough to reduce the lead in drinking water? Maybe. Could the plumbing industry do more to reduce lead in drinking water? Again, maybe. This is what started a long conversation.

The first thing every engineer should understand is that NSF 61 only permits lead to be used in copper alloy (brass and bronze) products. Lead is banned in all other plumbing products. Prior to the outright ban of lead, it was used as a stabilizer in certain plastic plumbing products. It was also used in the lubricating oils of many other plumbing products. The stabilizers and lubricants using lead are out, banned by NSF 61.

The amount of lead permitted by NSF 61 is the same as the federal requirements, –0.25% or less. However, the standard further requires test-

Note: The views expressed here are strictly those of the author and do not necessarily represent **pme** *or BNP Media.*

ing for lead concentrations in drinking water. The maximum allowable lead concentration is 5 parts per billion (ppb). To put it mildly, that is a very small value. Test results have shown that many products are well below the 5 ppb, lower than 1 ppb.

The NSF Joint Committee on Drinking Water Additives voted to develop a new procedure that allows a copper alloy manufacturer to test its product to a lower lead level than the 5 ppb. If the product meets the lower level, it could then use a marking, as well as advertising, that the product meets a more stringent lead concentration level when tested to NSF 61. The new procedure will be voluntary, not mandated by the standard.

A task group is currently developing the new protocol and marking. It is anticipated that the work should be completed sometime this year. Of course, it then must be approved by the committee before being published. This will provide an opportunity for engineers to specify a lower lead copper alloy product, if they so choose.

Getting back to the speaker raising an issue as to whether the industry has done enough. The questions the speaker asked are the same questions we should be asking when presented with a concern over test results showing lead in the drinking water. Some of the questions were:

- Where did the lead come from?
- How much lead was in the source water?
- Did you analyze the water piping system?
- How old is the water piping system?
- What was the amount of the first draw that you tested for lead?
- How far back in the piping system does the first draw take you?

Basically, you must become a forensic engineer, analyzing the water piping system to try and determine the source of lead. Don't immediately think it is the faucet that is turned on to draw the water, or the water cooler that is tested in a school.

If you encounter a building where you cannot find the source of lead, yet the drinking water measures high concentrations of lead (more than 15 ppb) don't immediately jump to the conclusion that the entire water distribution system must be replaced. Sometimes a simple solution can solve a local problem.

There are filters available that remove the lead from drinking water. It is impressive as to how good many of these filters are. However, one of the other concerns is that filters may also remove the disinfectant in the drinking water. Hence, if you recommend such filters, these are best locally installed just ahead of the plumbing fixture used to acquire the drinking water.

The worst thing you can do as an engineer is say, "Don't worry about it." If you hear of lead in drinking water, worry about it. Lead has no place in any drinking water. pme

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Those other heat pumps – Part 2

Air-to-water heat pumps should claim greater market share in the light commercial HVAC segment over the next year.

Last month, we covered the concept of combining heat pumps with hydronic distribution systems. We also discussed the specifics of an air-to-water heat pump supplying multiple zones of radiant panel heating. This month we will look at how that same system operates in cooling mode, and discuss specifics on how to configure control.

Chilling out

Figure 1 shows the air-to-water pump system as it would operate in cooling mode. Chilled antifreeze solution from the heat pump or buffer tank is delivered to one or both of the zoned air handlers, while the radiant panel zones remain off.

During cooling operation, the temperature of the buffer tank is maintained between and upper and lower limit by a setpoint controller. A typical temperature range would be between 45° F and 60°.

All piping carrying chilled fluid must be insulated and vapor sealed to prevent condensation. Migration of chilled water into the radiant panel zones is prevented by a combination of a closed zone valve on the supply pipe and a check valve on the return side piping.

Figure 2 shows one way to wire electrical controls for the system.

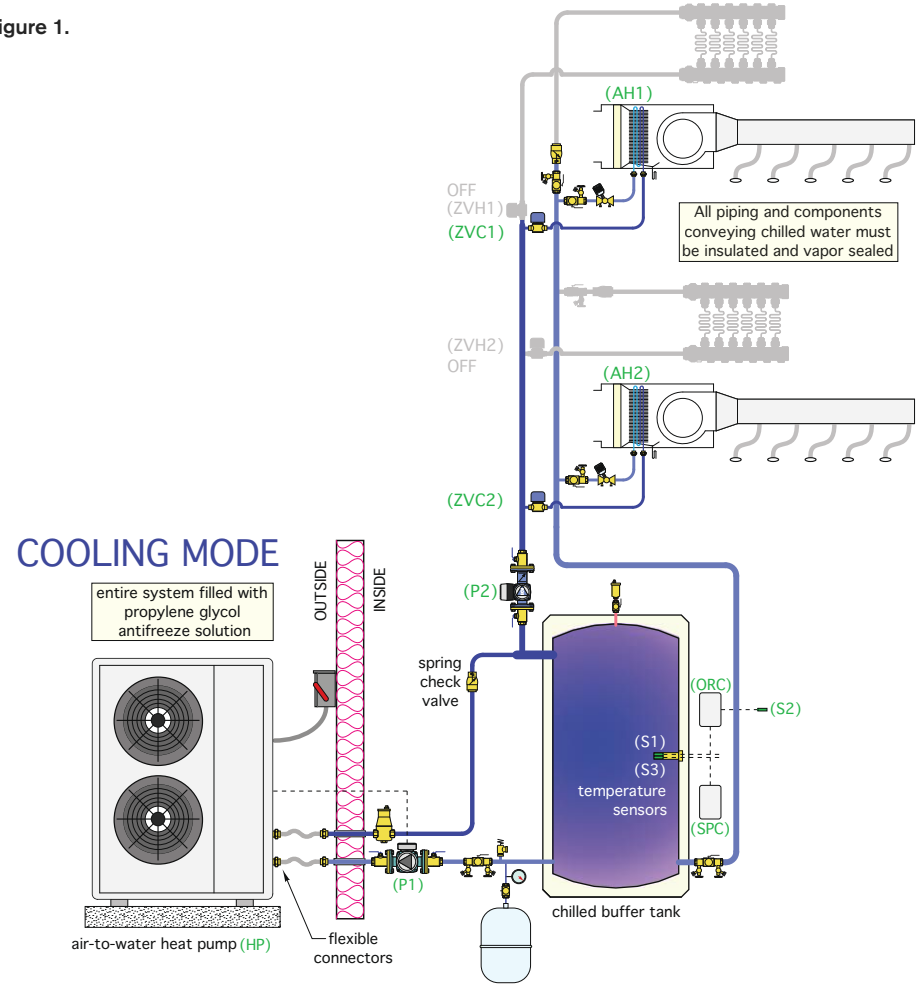
The mode selection switch determines if the system operates in heating, cooling or remains off. The temperature in each zone is monitored by a heating/cooling thermostat. In cooling mode the zone thermostats turn on their respective air handlers and open their associated zone valves. The distribution circulator also is turned on. A demand for cooling from either zone also turns on a setpoint controller that operates the heat pump to maintain the buffer tank temperature within a suitable temperature range for cooling.

Description of operation

The following is a description of operation for the system. Keep in mind that specific makes and models of heat pumps may require slightly different wiring to enable their operation in heating or cooling modes. Always verify the specific wiring requirements for the heat pump being used and ensure it is coordinated with the balance of system wiring.

Power supply: *The heat pump and circulator (P1) are powered by a dedicated 240/120 VAC 30 amp circuit. The heat pump disconnect switch (HPDS) must be closed to provide power to the heat pump. The remainder of the control system is powered by 120 VAC/15 amp circuit. The main switch (MS) must be closed to provide power to the control system. Both fan coils are powered by a dedicated 120 VAC/15 amp circuit. The service*

> **Figure 1.**



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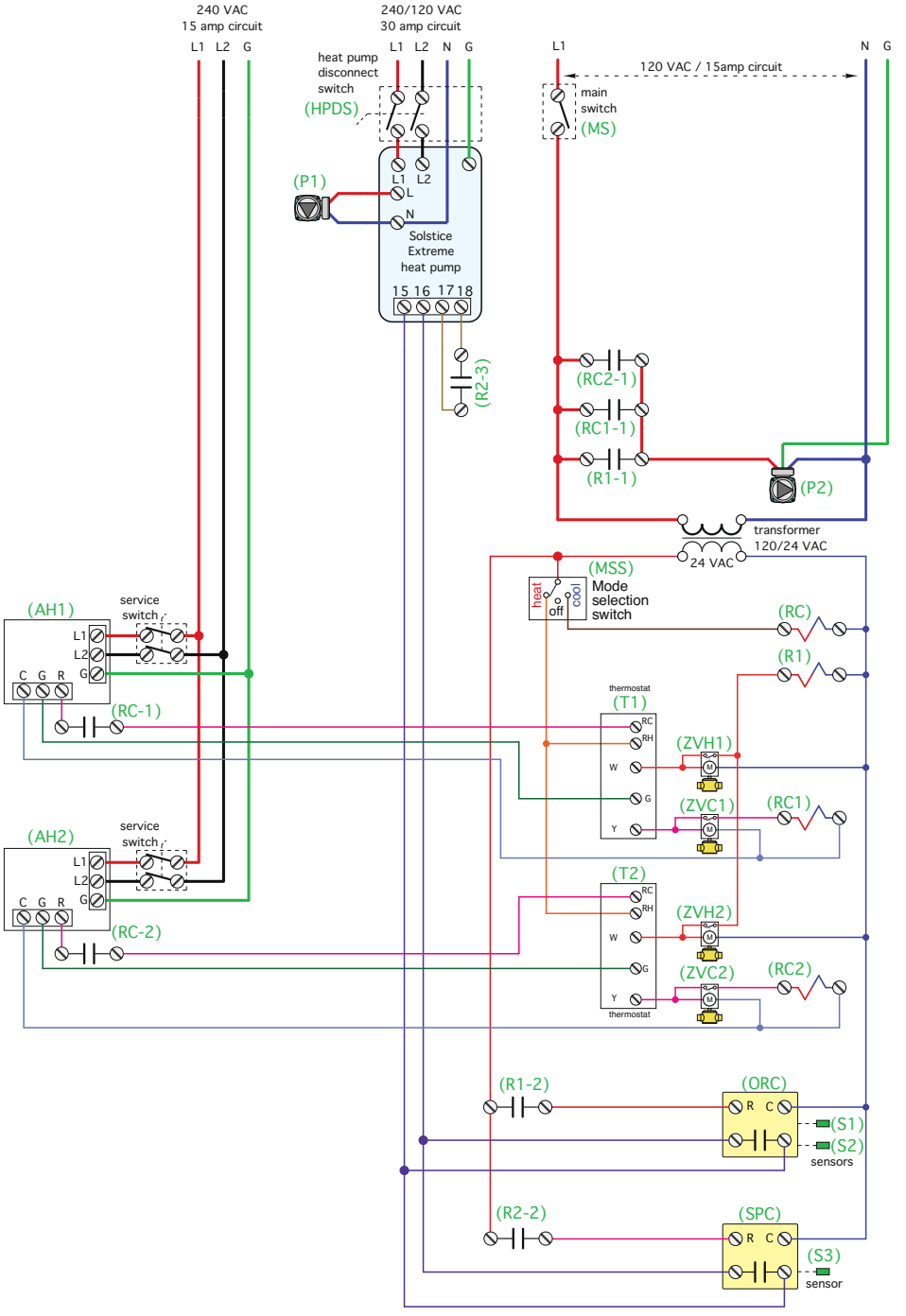
> Figure 2.



switch for each air handler must be closed for that air handler to operate.

Heating mode: *The mode selection switch (MSS) must be set for heating. This passes 24 VAC to the RH terminal in each thermostat. Whenever either thermostat demands heat, 24 VAC is passed from the thermostat's W terminal to the associated zone valve (ZVH1 or ZVH2). When the zone valve reaches its fully open position its internal end switch closes, passing 24 VAC to relay coil (R1). Relay contact (R1–1) closes to pass 120 VAC to circulator (P2). Relay contact (R1–2) closes to pass 24 VAC to outdoor reset controller (ODR).*

The (ODR) measures outdoor temperature at sensor (S2) and uses this temperature along with it settings to calculate the target supply water temperature for the buffer tank. It then measures the temperature of the buffer tank at sensor (S1). If the temperature at (S1) is more than 5° below the target temperature, the (ODR) closes its relay contact. This completes a circuit between terminals 15 and 16 in the heat pump, enabling it in heating mode.

After a short time delay the heat pump (HP) turns on circulator (P1) and verifies adequate flow through the heat pump. After a short time delay, the heat pump compressor turns on its compressor. The heat pump continues to operate until the temperature at sensor (S1) is 5° above the target temperature calculated by the (ODR), or neither thermostat calls for heat or the heat pump reaches its internal high limit setting. Note: Neither air handler operates in heating mode, regardless of the fan switch setting on the thermostats.

Cooling mode: *The mode selection switch (MSS) must be set for cooling. This passes 24 VAC to relay coil (RC), normally open contacts (RC–1) and (RC–2) close allowing 24 VAC from the air handlers to pass to the associated RC terminal in each thermostat. Whenever either thermostat calls for cooling, 24 VAC is passed from the thermostat's Y terminal to the associated zone valve (ZVC1, or ZVC2).*

When the associated zone valve reaches its fully open position its internal end switch closes, passing 24 VAC to associated relay coil (RC1) or (RC2). Associated relay contacts (RC1–1) or (RC2–1) close to pass 120 VAC to circulator (P2). Associated relay contacts (RC1–2) or (RC2–2) close to pass 24 VAC to the cooling setpoint controller (SPC). The cooling setpoint controller measures the temperature of the buffer tank at sensor (S3). If this temperature is 60° or higher, the (SPC) relay contact closes, completing a circuit between terminals 15 and 16 on the heat pump (HP,) enabling it to operate. Associated relay contacts (RC1–3) or (RC2–3) close between terminals 17 and 18 in the heat pump (HP), for cooling mode. The heat pump (HP) turns on circulator (P1) and verifies adequate flow through the heat pump. After a short time delay, the heat pump compressor turns on its compressor and operates in chiller mode.

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This continues until the temperature at sensor (S3) drops to 45°, or until neither zone thermostat calls for cooling, or until the heat pump reaches in internal low limit setting. The blowers in the air handlers can be manually turned on at the thermostats when the mode selection switch (MSS) is set to cooling. The blowers will operate automatically whenever either cooling zone is active.

Pay attention

Low-ambient air-to-water heat pumps can fill a unique niche for heating and cooling of residential and light-commercial buildings. Although their COPs are not necessarily as high as geothermal heat pumps, their installation cost is substantially less. They are cost competitive without subsidies and allow low-temperature radiant panel systems to deliver comfort far superior to forced-air heat pumps.

2019 is going to be a major "rollout" year for air-to-water heat pump systems in North America. Several manufacturers will be introducing new products in this category. They've obviously recognized opportunity and chose to pursue it. I highly recommend you also take a look at how air-to-water heat pumps can fit into your comfort offerings. **pme**

John Siegenthaler, P.E., is principal of Appropriate Designs, in Holland Patent, N.Y., and author of the text "Modern Hydronic Heating." He teaches two, 10-week, design-focused online courses: Mastering Hydronic System Design and Hydronic-Based Biomass Heating Systems.

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By Jacqueline Wilmot | jwilmot@nfpa.org

Standpipes installed at marinas and piers face unique challenges

The 2019 edition of NFPA 14 includes an entire new chapter on fire protection for maritime standpipes and hose systems.

With winter in full swing, do you find yourself dreaming of a warm summer day on a pier with a drink in your hand?

Many of us can picture this. And those of us in the fire-protection world find ourselves examining some of the fire-protection features wherever we may be, and that includes on vacation. Whether that's finding a second exit, staring at the sprinkler spacing, reading the inspection tags of fire extinguishers, and, yes, even analyzing hose-connection and standpipe locations. These are some examples of the fire-protection and life-safety components commonly investigated to determine if the area you are exploring is "code compliant."

Photo credit: ©gettyimages.com/ferrantraite

If you can still picture yourself sitting on a pier and observing the standpipe locations, which code are you using in your mind to determine if the standpipe is compliant? NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, probably comes first to mind; NFPA 303, *Fire Protection Standard for Marinas and Boatyards*, might also be on your short list, as this document provides a minimum acceptable level of safety to life and property from fire and electrical hazards at marinas and related facilities. Which standard do you use?

The answer is both. For years, NFPA 303, which is referenced in many building codes, contained its own requirements for standpipes and would direct its readers to NFPA 14 for the installation of standpipes for maritime applications. However, NFPA 14 did not specifically address the installation of standpipes for marinas and other similar facilities, creating a loophole for users and authorities having jurisdictions. Why couldn't an individual use the typical provisions in NFPA 14 that apply to standpipes on land?

The environment in and of itself comes first to mind. Standpipes installed in such locations are subject to extreme temperatures and corrosion if installed in salt water. If installed on floating docks or other structures subject to movement, standpipes need to be flexible. In addition to the environmental factors, marinas and related facilities are frequently located in remote areas, isolated from public protection and not easily accessible to community fire equipment. Ongoing maintenance required to take place on piers, including welding, fiberglassing, painting and paint removal, creates additional hazards in these unique locations.

The good news is the 2019 edition of NFPA 14 addresses the specific provisions that need to be applied for the installation of standpipes and hose systems on marinas, boatyards, wharfs, docks and piers. NFPA Technical Committee members from both the NFPA 14 and NFPA 303 technical committees decided to take action in the last revision cycle and ensure NFPA 303 and NFPA 14 were speaking to each other and contain consistent provisions to address this issue.

In addition, the 2019 edition of NFPA 14 includes an entire new chapter (Chapter 13), which provides a reasonable degree of protection for life and property from fire for maritime standpipes and hose systems based on sound engineering principles, test data and field experience.

Although not every subsection can be addressed in this article, here are some of the major points:

Chapter 13 kicks off with the types of materials permitted for pipe, tube and fittings. Before the 2019 edition, the existing

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language in NFPA 14 allowed for copper and galvanized piping as the only real options for corrosion resistance. However, Table 13.2.1 now allows nonmetallic options, which allows piping to be installed and hopefully last longer in areas subjected to harsh and corrosive atmospheres.

The next major subsection provides the minimum provisions for the system requirements, including the location and protection of piping. Since these standpipes are being installed on maritime applications, it is important that the piping is permitted to be installed above or below piers docks and similar structures. However, if using nonmetallic piping for anything other than water-filled systems, the portion of the piping system above the surface of the water needs to be metallic piping that is resistant to corrosive elements.

The piping installed in these environments needs to be protected from mechanical and fire damage as well. This could include protection by steel posts or concrete barriers; seismic bracing, where required; and corrosion-resistive coating for piping exposed to corrosive conditions, ensuring plastic piping is protected from fire exposure and confirming that piping has sufficient flexibility where standpipes are installed on piers, docks or similar structures subject to movement.

"Those of us in the fire-protection world find ourselves examining some of the fire-protection features wherever we may be, and that includes on vacation."

Provisions for fire-department connections (FDCs) are next on the list. Listed check valves are required to be installed on each FDC, and in an accessible location. The FDC itself is required to be in a location that is visible from the street or nearest point of the fire department apparatus accessibility. In addition, FDCs are required to be located within 100 feet from the nearest fire hydrant or approved water supply, unless the AHJ permits an increased allowance. These are simple "no-brainer" requirements, but think back to the setting of which a pier is located which can be isolated from public protection and not easily accessible to community fire equipment. These provisions are critical for any potential firefighting efforts. Signage is also key in helping firefighters quickly identify the type of standpipe system they will be working with (i.e., manual dry standpipe, wet standpipe etc.).

continued on page 30

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By Mike Miazga | Group Editorial Director | miazgam@bnpmedia.com

Zurn simplifies the specification process

New digital tool helps plumbing engineers streamline submittal process.

During the 2018 ASPE Convention and Expo in Atlanta, Zurn debuted its new software tool, inSpec, Powered by Zurn, which is designed to simplify the submittal process for commercial plumbing engineers. ***pme*** recently caught up with Zurn Director of Digital Marketing and Communications **David Krohn** to discuss how the new digital platform is helping engineers throughout the specification process.

inSpec traces its roots back to an earlier incarnation, Zurn One System, correct?

DK: Zurn developed possibly the first digital specification tools in our industry many years ago, the Zurn One System specifier. It was built for finished plumbing products. If you were specifying a water closet, there would be a picture of the fixture and then the tool would show the accessories that fit. From there, you pull together the specifications. The tool made things a lot easier, but as technology evolved and customer demands evolved, it was time for a specification tool that could streamline even more.

You did some extensive boots-on-the-ground research regarding inSpec?

DK: We traveled across the country and talked to many different specifiers. Our team asked them what they looked for in a specification tool with the intention of making the process easier. We heard again and again that they needed four different things: 1) an advanced configuration engine that encompassed all our product lines; 2) a project-based tool to keep all projects organized in one location, housed in a cloud-like environment; 3) a collaborative platform where they could look at previous projects, copy those projects and get feedback from team members; and 4) make it easy! They wanted a system that is equally intuitive and simple to use.

How important is the collaboration part of the system?

DK: With this tool, you can have two or three specifiers from the same firm working on a project. They go into inSpec and they can share. One might be doing the rough-in, the other the finished plumbing, and the third person is making sure everything is good across the board. All three can work directly on the same project using inSpec. You are also able to email the output document right from the tool. If you wanted to run the fixtures by the architect on the project, you email the project submittal for fixtures right from the tool, as opposed to downloading everything and saving it. This way, you are saving time and still putting that collaboration into the project.

Zurn's new software tool, inSpec, is designed to simplify the submittal process for commercial plumbing engineers.

Where are other efficiencies being realized in the tool?

DK: As an example, you can take an existing school footprint, copy it, and rename the project. You are able to build master specifications directly into the tool. You build out the configurations once, save it in one location, and then you can select any number of configurations and copy into an existing or new project. You are able to spec a building in a matter of minutes and have it all in one location. The power of the tool having that copy feature adds so much more efficiency.

What has the feedback been thus far?

DK: The general feedback is it speeds up the spec process. We are also hearing how convenient it is to have multiple projects in one location. We want to add value to the specifier – make his or her job easier. We know the specification process can be cumbersome and difficult. Our end goal was to make the specification process easier for our customers.

Where does Zurn go from here?

DK: We live in a world of innovation. Our industry is no different. We now have technology that wasn't available 10, even five years ago. Zurn is focused on being able to progress with technology to meet the evolving needs and wants of our customers. We just launched our first IoT connected device to create smarter plumbing systems within commercial buildings. We're building on technology and aligning with our customer expectations. pme

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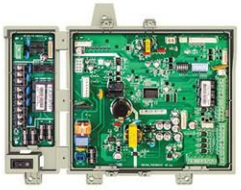

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USGBC offers recertification for all LEED projects

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LEED recertification looks at the continued or improved performance of a building.

The U.S. Green Building Council will start offering LEED recertification for all LEED-certified projects. To be eligible for certification, projects must submit 12 months of data demonstrating continued or improved performance.

Once recertified, projects will meet the standards of the newest version of the LEED rating system available and the recertification will be valid for three years.

"For the last 25 years, USGBC has sought to make the communities in which we live, work, learn and play healthier, more resource-efficient and less damaging to our ecosystems," USGBC President and CEO **Mahesh Ramanujam** said. "Recertification has always been part of the overall vision of LEED and plays a key role in its continuing evolution. We are focusing on the areas where we can make the biggest impact to improve the standard of living globally — the performance of our buildings. That's why we want all LEED projects to continue to demonstrate leadership and ensure they are actually providing real benefits to the people who inhabit them."

Ramanujam

PMI develops guidance for indoor recycled water use

Plumbing Manufacturers International has introduced parameters for the use of indoor recycled water. Developed for the benefit of water utilities to ensure that plumbing products function as intended by manufacturers, the water quality limits provide recommended ranges on 13 different parameters of water quality.

"This guidance will help water utilities to produce recycled water that will not hamper the performance of residential and commercial plumbing products that can be used with nonpotable water, such as toilets and urinals," PMI CEO and Executive Director **Kerry Stackpole** said.

Scientists, engineers and technical experts among PMI member companies working on PMI's Sustainability Task Group collaborated on the guidance.

Water districts may choose to use recycled water — also known as reclaimed water or treated wastewater — within their jurisdictions for uses that do not require potable water, such as irrigation, power plant cooling, or toilet and urinal flushing. However, in the absence of federal standards for the use of this water, "Water utilities are adopting various requirements and guidelines, and PMI's goal is to provide guidance on recycled water from a manufacturing perspective," Stackpole said.

PMI's action was spurred by its experience last year in California, where it worked as part of a coalition to place a hold on a mandate for the indoor use of recycled water in newly constructed residential and commercial buildings.

"We were concerned about the lack of scientific research into the use of recycled water indoors and urged regulators to wait until a better understanding of the potential benefits and risks could be determined," Stackpole said.

Virginia Tech engineering professor **Marc Edwards** is currently conducting a study on the public health ramifications of indoor recycled water use with funding from the American Water Works Association and National Science Foundation.

Pushes for the increased use of recycled water will likely surface again, and PMI Technical Director **Matt Sigler** said the new parameters and ranges reflect the time PMI members have had to prepare.

"We'll continue being proactive, coordinating with our members on research efforts and fully vetting all concerns surrounding public health and safety and product performance," Sigler said.

He added that PMI's recycled water parameters are not intended to serve as guidance for public health and safety and are not intended for plumbing products used for bathing, cooking, drinking or hygiene purposes (e.g., faucets, shower heads, personal hygiene devices and bidets).

Global plumbing fixtures and fittings market to reach $104 billion by 2022

The plumbing fixtures and fittings market will be worth more than $104 billion by 2022, according to Technavio's market research analysts. The findings are in a new plumbing industry report on front-of-the-wall (FoTW) and behind-the-wall (BTW) applications.

During the period 2016-2017, there was a more than 8% increase in rental housing completions in the U.S. With the recovery of the U.S. economy, the demand for single- and multifamily homes will also increase in the coming years, driving the growth of the housing market, the findings show. This will subsequently fuel the growth of the construction industry, which will be one of the primary factors fueling the growth of the plumbing fixtures market size, the report states.

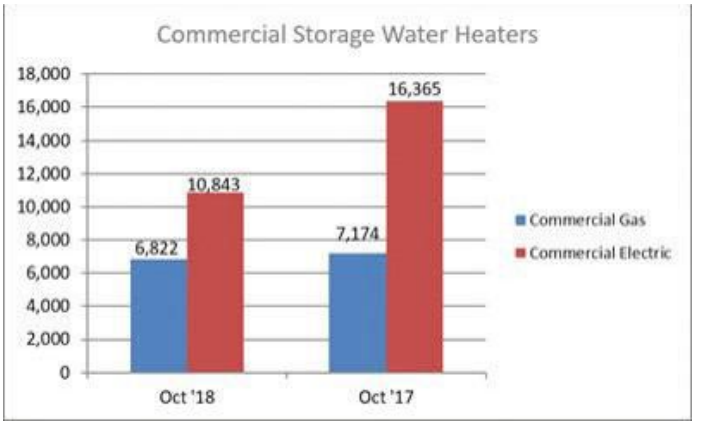
The report adds the plumbing fixtures and fittings market is fragmented due to the presence of large number of vendors across the globe. The market is currently in the growth phase, and with the rising demand for both residential and commercial end-use, the level of competition in this plumbing industry is intense, the report states.

Countries in the APAC will contribute to the maximum growth of this plumbing fixtures and fittings market throughout the predicted period,

Technavio says.The growth in construction activities across the developed nations in APAC will be a primary factor driving plumbing industry growth in this region, the report states.

According to this plumbing industry analysis report, the FoTW segment accounted for the maximum share of the plumbing industry size during 2017. Though the segment's contribution for the market's growth will witness a slight decrease in the coming years, it will continue to account for the major share of this plumbing fixtures industry throughout the forecast period, the report says.

U.S. commercial gas storage water heater shipments decrease 4.9% in October



Commercial gas storage water heater shipments decreased 4.9% in October 2018, to 6,822 units, down from 7,174 units shipped in October 2017, according to AHRI. Commercial electric storage water heater shipments decreased 33.7% in October 2018, to 10,843 units, down from 16,365 units shipped in October 2017.

U.S. shipments of residential gas storage water heaters for October 2018 increased 11.5%, to 373,450 units, up from 334,854 units shipped in October 2017. Residential electric storage water heater shipments increased 2% in October 2018 to 341,572 units, up from 334,901 units shipped in October 2017.

Obituary, Paul Miller

Miller

Paul Miller, president of The Mill Rose Company, died at his home in Highland Heights, Ohio, on Dec. 4, 2018, at the age of 72.

A native of Cleveland, Ohio, Miller married Michelle Ross and began work at The Mill-Rose Company, serving in virtually every facet of the brush manufacturing business. Miller was a leading supporter of industry associations, including the American Brush Manufacturers Association. Miller took great pride in hosting the annual Victor Miller Golf Tournament and Brush Manufacturers luncheon.

"My dad lived a thousand years in the 72 calendar years of his life," his son **Greg Miller** said. "He loved and enjoyed life more than anyone I've ever known, and his love for family and friends was monumental."

Victor Miller, Miller's grandfather, founded the company in 1919.

InSinkErator opens new Wisconsin headquarters

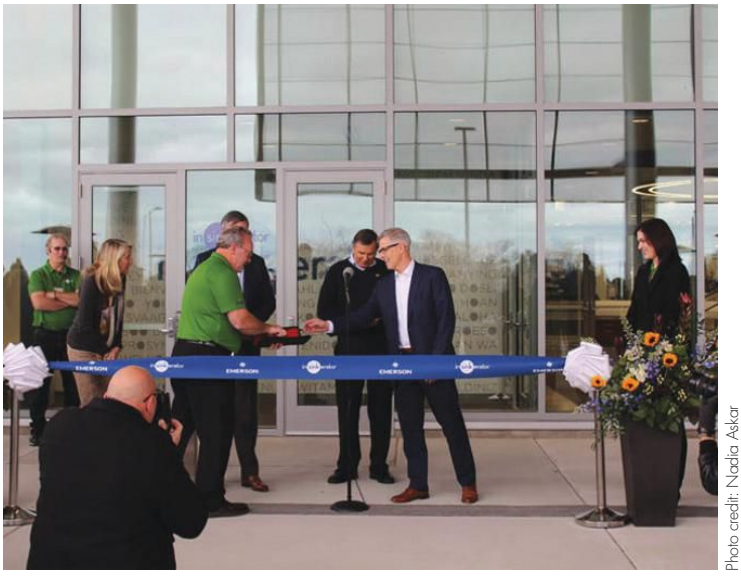


Photo credit: Nadia Askar

Emerson executives celebrate the grand opening of the new InSinkErator headquarters in Mount Pleasant, Wisconsin.

InSinkErator, a business unit of Emerson, is celebrating 80 years in southeast Wisconsin with the grand opening of its new 87,000-square-foot headquarters in Mount Pleasant. The environmentally-efficient building will house 175 engineers and professional staff, InSinkErator noted.

"The new headquarters and labs will ensure InSinkErator continues its industry leadership in food-waste disposers," InSinkErator President **Chad Severson** said. "This building is not only a modern, pleasant workspace; it also is a world-class technology center with onsite prototyping, advanced sound-engineering facilities and unprecedented lab facilities for our experts to create the future of InSinkErator."

In tandem with the grand opening, InSinkErator also announced its commitment of $200,000 over five years to Higher Expectations for Racine County, a collaborative initiative that engages community partners, aligns efforts and maximizes resources to promote excellence and equity in education and employment outcomes in Racine County, Wisconsin.

Emerson Chairman and CEO **David Farr** and **Bob Sharp**, executive president of Emerson Commercial and Residential Solutions, joined Severson to present the donation to Higher Expectations at the InSinkErator headquarters grand opening.

"Our state-of-the-art facility needs workers to fill high-tech jobs," Severson said. "Our pledge to Higher Expectations isn't a gift; it's an investment in Racine County to ensure there are qualified workers right here in our hometown."

Emerson is also investing $29 million to make improvements to the 21st Street facility in Racine, Wisconsin, the previous headquarters for InSinkErator. The upgrades will help InSinkErator stay ahead of increased customer demand for its food-waste disposers for home and commercial use. These improvements are the latest of a $150 million investment Emerson is making in southeast Wisconsin over the 2015-2019 timeframe. The investment also includes the Kenosha, Wisconsin, facility occupied in 2015.

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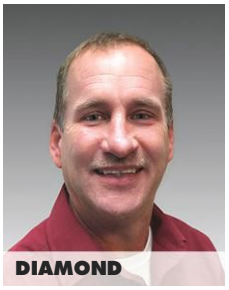
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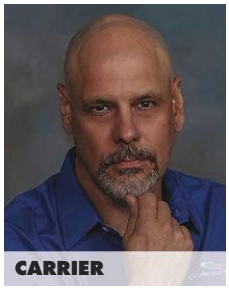
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people news

- Taco Family of Companies announced **Cheryl Merchant** has joined the company as president of Taco Family of Companies, North America. Merchant has spent the last 19 years as president and CEO of Hope Global Industries out of Cumberland, Rhode Island. **Luca Bolcati**, vice president of Taco International, is the new president of Taco International.
- **Skip Diamond** joined Mestek as its new technical resources manager for its Sterling HVAC, SpacePak and Koldwave brands.
- Zurn Industries announced the appointment of **Barry Moulsdale** to general manager of Zurn Canada.
- The American Society of Plumbing Engineers Region 3 Director **Steve Mastley**, CPD, announced the appointment of QuantumFlo Founder and CEO **David Carrier** as the Society's Region 3 affiliate liaison.
- REHAU's current regional CEO **Christian Fabian** will head a newly formed technology and performance global services division as the company makes a series of leadership changes. As of Jan. 1, REHAU Americas' regional executive board includes **Theo Haast** as president in addition to chief financial officer. **Dr. Thomas Troeger** fills the newly created position of chief marketing officer; and **Terry Barnaby** is head of operations.
- AHRI's new chairman is **William Steel**, president and CEO of Bard Mfg. Co. AHRI officers include **John Galyen** (president, Danfoss, vice chairman), **Mike Schwartz** (CEO, Daikin Applied, vice chairman), **Ron Duncan** (president, Magic Aire, treasurer) and **Chris Peel** (president and CEO, Rheem Mfg. Co., immediate past chairman). AHRI directors include the likes of **Bruce Carnevale** (president and CEO, Bradford White), **John Swann** (Weil-McLain) and **Kevin Wheeler** (president and CEO, A. O. Smith). Rheem's **Mike Straub** is a recipient of the Richard C. Schulze Award given for distinguished service and commitment to AHRI.
- Armistead Mechanical Services hired **Matthew Grande** to join the company's seasoned automation control team.
- SmithGroup hired **Joseph Maytum** as a principal and corporate senior medical planner. In this role, Maytum adds specialized expertise in strategic master planning and pediatric healthcare to the firm's global Health Practice.
- IAPMO R&T, a North American provider of third-party certification for plumbing, mechanical and solar energy products, added **Shannon Ethridge**, diplomate of the American Board of Toxicology, as in-house toxicologist.

company news

- **AUTODESK** signed a definitive agreement to acquire construction productivity software developer **PLANGRID** for $875 million. The transaction is subject to customary closing conditions and is expected to close during Autodesk's fourth quarter of fiscal 2019, ending Jan. 31. Autodesk says the acquisition will enable it to offer a more comprehensive, cloud-based construction platform.
- **REHAU** recently completed the successful acquisition of **MB Barter & Trading AG**.
- **FRATELLI PETTINAROLI** S.P.A., an Italian-based manufacturer of valves and related products, acquired the **JOMAR GROUP**. After more than 30 years of partnership and following the 50% acquisition in 2001, the 100% acquisition was finalized in summer 2018. Jomar is a North American manufacturer and supplier of ball valves, butterfly valves, actuation, check valves, balancing valves and strainers with several patented valve solutions.

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ASPE Houston celebrates half a century

Photo credit: Daniel Ieos

ASPE Houston celebrates its 50th anniversary. First row, from left: ASPE CEO Billy Smith, ASPE Houston President David Clark, Region 5 Director Bryan Hutton, ASPE Houston Administrative Secretary Jeremy Charmchizadeh, ASPE Houston VP Technical Donald Taylor. Second row, from left: past presidents Cyril Unger, Daniel Leos and Joe Olson. Third row, from left: past presidents Emigdio Hinojosa Jr., John Garner and Richard Merz Jr. Fourth row, from left: past presidents Robert Love and Christopher B. Ennis. Fifth row, from left: past presidents Placido Vera, Lynn Gibbs and Ken Kilgore Sr. Sixth row, from left: past presidents Patrick R. Powell, Sean C. Smith, David Cropper and Michael J. Green.

ASPE Houston gathered last month to celebrate its 50th anniversary with a dinner-and-casino night at The Bell Tower on 34th in Houston. Proceeds from the event went to charity.

Sixteen past chapter presidents, along with national ASPE leadership, were among the 82 guests who joined ASPE Houston President **David Clark** to ring in the milestone.

The Houston chapter was chartered on July 10, 1968, Clark said, becoming the fourth in the country after only Los Angeles, San Francisco and Phoenix.

"We had such a good foundation here in Houston with our original charter members," Clark said. "Not only were a lot of these gentlemen engineers with local firms, but they were great affiliates, too … and they did a great job of keeping the engineering community involved with the affiliates."

Clark recalled meeting many charter members still active in the organization when he joined the chapter 20 years ago as a young engineer. The resources, networking and intangible benefits proved valuable to his development as an engineer and professional, he said. Now, as a leader, he can help foster those same relationships and make connections for his work at IA Naman, in Houston, where he is a partner.

"It's allowed me to also network and market with regards to finding young engineers that we may look to employ here at our office and our firm," he said. "It then also allows me to try to get other younger engineers in the business so they can see what ASPE has to offer."

Incorporating a casino night was part of a strategy to encourage younger members to attend, which fits with the chapter's Young Professional Liaison Chair **Jeremy Charmchizadeh**'s broader work to grow membership with the next generation.

"Trying to get over 200 members is a short-term goal of ours," Clark said. "We're trying to creep up there to over 200 members, and then other than that, we're just trying to improve. We have one of the best product shows, we believe, in the country with regards to a local chapter. Last year, we had more than 800 people at our product show in April, and we're looking to improve upon that. We have great attendance at it, so 800 people at a local product show is just fantastic."

In addition, the chapter aims to develop educational programs for local schools in Houston.

"We know the San Antonio chapter does it, and we're trying to piggyback off of the stuff that they and the ASPE National Education Chapter have put together," he said. **— Ed McMenamin reporting**

ASPE Philadelphia celebrates 40 years

Photo credit: William T. O'Donnell

The ASPE Philadelphia Chapter celebrates its 40th anniversary. From left: past chapter presidents Ernie Rink, Mike Panco, Steve Ziga, Curt Ray, and Bill O'Donnell; former ASPE Vice President Affiliate Vince Scriboni; former chapter president and current Region 1 Director Paul Silvestre; ASPE Director of Affiliate Relations Brian Henry; ASPE CEO Billy Smith; Chapter President David Smith; and former chapter president Sevanti Jain.

More than 100 ASPE Philadelphia members and guests commemorated the chapter's 40th anniversary last month with a dinner and party at the SugarHouse Casino in Philadelphia.

"A good time was had by all," Chapter President **David Smith** said. Several former chapter presidents, as well as ASPE CEO **Billy Smith** and Region 1 Director **R. Paul Silvestre,** joined Smith at the event.

David Smith, a senior plumbing and fire protection engineer for Gannett Fleming at the Valley Forge office in Audubon, Pennsylvania, joined the chapter 33 years ago.

"I joined because of the knowledge that I could acquire through the chapter," he said. "ASPE was very helpful because I found I could go to anyone as a member and ask for assistance for bouncing ideas off of, and we continue that tradition today."

A portion of every dinner meeting is set aside for a question-and-answer segment referred to as "What would you do?" Any member can pose a recent engineering problem, and fellow members offer solutions.

"It's a give-and-take because our Society chapter has a wealth of knowledge among its members," Clark said. "So if somebody encounters something, they can spread the news with other members, or ask questions."

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Many longtime members attended the event, including some who have been members since the chapter's founding. But it has its eyes on growing future membership as well. The chapter runs a plumbing school that also presents an excellent opportunity for recruitment.

"Everyone in this industry is discovering just how hard it is to get younger members to become active or just join," he said. "We give an incentive by saying if you complete the first year of the school, we'll give you membership for a year; the second year, we'll give it to you for a second year. We encourage them to come to the dinner meetings during the school years, and we cover the cost to get them involved to see what the dinner meetings have available.

"We have good topics at these dinner meetings, and we move these dinner meetings around to encourage more local people to attend. Some of us still travel to all of them. We find that with good topics and various locations we're getting a lot of people attending and continuing to attend."
– Ed McMenamin reporting pme

continued from page 18

A means for draining the system is also required to be provided for all portions of the standpipe system that cannot be drained from the main drain. This allows for proper inspection, testing and maintenance (ITM) work. The last subsection within Chapter 13 addresses ITM for standpipe systems and requires the systems installed to be properly inspected, tested and maintained by the property owner or an authorized representative in accordance with NFPA 25, *Standard for the Inspection Testing and Maintenance of Water- Based Fire Protection Systems*, to provide at least the same level of performance and protection as originally designed.

So while you are dreaming of or actually sitting on a pier with the sun on your face and a drink in your hand, now you know which codes and sections to review to determine if the closest hose connection and standpipe system is code compliant!

Additional provisions regarding the design criteria for hose connections, minimum sizes for standpipes and branch lines, minimum design pressure, and flow rates also can be found in the new Chapter 13 of NFPA 14.

For more information and additional requirements, visit **www.nfpa.org/303** or **www.nfpa.org.** pme

Jacqueline Wilmot is a fire protection engineer at the National Fire Protection Association. She is the staff liaison for seven technical committees in the Fire Protection Systems and Public Fire Protection divisions.

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By Nadia Askar and Ed McMenamin

Connectivity drives water heater and boiler trends at AHR Expo

AHR returns to Atlanta for the first time since 2001.

More than 2,100 exhibitors and thousands of visitors from around the globe are expected at AHR this year.

The 2019 AHR Expo returns to Atlanta for the first time since 2001 at the Georgia World Congress Center, Jan. 14–16.

Since 1930, the show has become the world's largest marketplace for HVACR, bringing professionals from all facets of the industry together under one roof to discuss and display current trends and best practices.

The show will draw more than 2,100 exhibitors and thousands of visitors from around the globe. Attendees can look forward to industry seminars, the latest trends and technologies, special floor sections showcasing where technology is shaping the industry, plenty of networking opportunities and knowledge they can implement in their businesses right away.

There will be thousands of products and technologies spanning more than 770 categories. There is a lot to see over three days. Product preview guides are a great way for attendees to see a sample of what will be on display. Attendees are encouraged to use the MyShow Planner to assist with schedule building and show planning.

"The AHR Expo packs all the industry knowledge under one roof. This is the one big event that all in the HVAC industry need to attend," says **Bob "Hot Rod" Rohr**, of Caleffi North America, and a 2019 AHR Expo Education Program speaker. "It's the one place where you can see, meet and touch all the latest cutting-edge technology, equipment and training available today."

Water heater and boiler trends

Connectivity and the Internet of Things continue to be buzz words across industries, but it's not just marketing. App-based technologies are reflected in the newest plumbing and heating products. Mobile apps and controls can provide maintenance subcontractors with alerts when there has been a failure or notifications for predictive maintenance. For light-commercial applications such as apartment developments that might not have full building management systems, remote access and monitoring via a mobile app is obviously attractive.

The service contractor "will be able to get there faster and remedy the problem sooner," says **Mark Avron**, national sales manager for **Triangle Tube**. "It gives the service contractor some information before he arrives. He can see what might be the nature of the problem before he gets there so he can make sure he has the parts available. In the end it's going to save the consumer money."

Even for buildings that do have a robust management system, alerts and notifications from individual components or systems can be useful, says **Peachie Hytowitz**, commercial product manager at boiler manufacturer **Raypak**. "If you're a maintenance manager that focuses on your boiler system, then you may not want all of the BMS notifications," she says. "You just want notifications on what you're maintaining."

Photo credit: AHR Expo

Last year's confidence in the industry's economic outlook is forecast to carry into 2019, with 87% of respondents anticipating positive business prospects heading into the new fiscal year.

Hytowitz says she expects to see the trend toward condensing boilers, and therefore stainless steel piping, to continue. "That's really been the trend in the last maybe 5–7 years. It's been moving toward that stainless steel condensing to get higher efficiencies," she adds.

Brian Fenske, director of commercial sales for **Navien**, says he expects to see a continued trend toward more fire-tube boilers, as compared to water-tube.

"There are upsides and downsides to both types to be considered when selecting style," he says. "With water-tube boilers, due to convectional flow, the movement of water can be much faster than that of a fire-tube boiler, hence rate of heat transfer is high which results in higher potential operational efficiencies. Quicker and reactive heat transfer, as well as load handling, is synonymous with water-tube boilers.

"The industry also has taken a liking to fire-tube boiler designs with its operational benefits such as lower head loss, larger mass and often simpler cleaning techniques. Fire-tube boilers can, however, be misunderstood regarding their potential operational efficiencies and need for minimal and controlled flow so that thermal shock and liming is controlled to a minimum."

Economic outlook

HVACR manufacturers report positive 2018 sales growth according to the latest AHR Expo and *ASHRAE Journal* Annual Economic Outlook Survey. Last year's confidence in the industry's economic outlook is forecast to carry into 2019, with 87% of respondents anticipating positive business prospects heading into the new fiscal year.

The report indicates the HVACR market is primed for continued business growth. Reports for 2018 are at an all-time high with 44% of respondents reporting a significant sales increase of more than 10% year-on-year; this is up from an already impressive 2017 record of 35%.

"This is considerable data confirming the continued growth of our industry, even amongst market shifts and issues facing professionals," says **Clay Stevens**, manager of AHR Expo. "It is further indication that the changing market has potential to grow in unexpected ways, and industry professionals need to stay abreast of the latest technologies and equipment available to them."

Education program

The 2019 AHR Expo Education Program includes more than 120 sessions of free seminars, professional certifications and continuing education courses. It continues to grow each year and is a comprehensive, all-inclusive opportunity to hear directly from industry leaders about trends and best practices in HVACR.

This year features nearly 75 free sessions presented by industry experts from leading organizations. The sessions, ranging from one to two hours, provide attendees with potential solutions to the most pressing challenges facing the industry. Attendees can listen in on general HVACR industry subjects, as well as sessions specific to their own line of practice.

This year, attendees can choose from 20 ASHRAE Learning Institute sessions for attendees to participate in professional development, all of which are offered prior to and during the show. All short courses and professional-development seminars have been approved for continuing education units that can be applied toward maintaining P.E. licensure. Attendees must register and pay tuition fees in advance of the show by visiting the ASHRAE registration website, **https://bit.ly/2LsRdnH**.

In addition to free seminars and paid certification classes, attendees are encouraged to sit in on brief exhibitor presentations in the New Product & Technology Theater. There are more than 100 presentations scheduled, each lasting about 20 minutes, that aim to give attendees an overview of new product announcements and technologies that they'll see in exhibitor booths on the show floor. These sessions take place in special theaters right on the exhibit floor and there is no fee or registration required.

2019 Innovation Award winners

Each year, products in 10 different categories are recognized for being some of the HVACR industry's most innovative products, systems and technologies. Winners will be featured at the show and will be formally recognized during a special ceremony. They were selected by a panel of third-party ASHRAE member judges who evaluated each award entry based on its innovative design, creativity, application, value and market impact.

Building automation winner: Automated Logic Corp. (Booth C5731); **Cooling winner:** Johnson Controls (Booth B1617); **Green building winner:** enVerid Systems (Booth B1061); **Heating winner:** Regal (Booth B1639); **Indoor air quality winner:** CPS Products (Booth B3553); **Plumbing winner:** Anvil International (Booth C6625); **Refrigeration winner:** Emerson (Booth B2219); **Software winner:** Taco Comfort Solutions (Booth B2239); **Tools and instruments winner:** Dwyer Instruments (Booth C5407); and **Ventilation winner:** Energy Wall (Booth B268). pme

By Ed McMenamin | Chief Editor | mcmenamine@bnpmedia.com

LEED the way

Pennsylvania Toyota dealership recycles used auto oil to fuel radiant heating, project wins green building award.

From left, Steve Knaub, Wayne Howe and Adam Shamenek pose next to Clean Burn CB500 boilers and below Bell & Gossett pumps.

If the Prius set a new expectation for energy efficiency and innovation, the same could be said of the new **Koch 33 Toyota Dealership** in Easton, Pennsylvania.

One of the first new Toyota prototype dealerships in the state, it was named a 2018 U.S. Green Building Council Central Pennsylvania Leader Award recipient — receiving the commercial project of the year award for its design build. The project also is awaiting LEED certification.

The 56,765-square-foot dealership includes a showroom, state-of-the-art service area, parts room, training center, waiting lounge and a coffee bar. Looking under the dealership's hood, so to speak, reveals a system of radiant heating powered by used automotive oil boilers. The radiant network keeps the floors warm and the winter elements from accumulating on the pavement outside. The building's energy model predicts it will operate 35% more efficiently than a building built to conventional standards, according to Trane Trace 700 modeling software used by **Mowery**, the project's design-build contractor. Over the next year, the team will track its actual performance to confirm expectations and to compare with original projections.

Mowery knows its way around a dealership. It has worked with more than 20 different auto brands, in addition to building full medical facilities, distribution centers and high-performance office buildings.

With its in-house design-build capabilities, it's able to tailor the customer's specifications and vision to local code compliance. Coming off another recent Toyota dealership project, Mowery combined its knowledge of the brand's requirements — the automaker recently announced that all new dealerships will be LEED certified — with its own experience designing energy-efficient systems that meet the high standards of LEED.

"It starts with our team and each project you do — you add to your lessons learned," says **Bill Sutton**, vice president for business development at Mowery. "Each brand that we work with has its own way of doing things. When we come to the table early in the design, we're able to offer those valuable lessons learned and avoid mistakes by bringing our experience to the process."

Reduce, reuse, recycle

Once the owner put together the project requirements and benchmarks for efficiency, subcontractor **HB McClure** Mechanical Engineer **Adam Shamenek, P.E.**, got to work picking the best systems for the job.

"First of all, it's a car dealership, so what do they have a lot of? They have a lot of waste oil," he says. This provided an excellent opportunity. "We've seen a lot of success in the other dealerships with waste oil boilers. They're doing

Photo Credit: Mowery

The dealership features Uponor Wirsbo hePEX piping for the in-slab snowmelt system at the front entrance and sidewalks, near the showroom canopy (in background). PEX piping is fastened to the wire mesh prior to concrete pour.

oil changes every day, so they reuse that oil which is at their disposal. It's a great reuse of a resource. The oil doesn't have to be disposed of, it can be used for heating."

The used oil fuels four Clean Burn boilers that heat an intricate radiant-heat system under the service bay, drive-in and showroom floors, in addition to an exterior snowmelt system under all the sidewalks and exterior car-display areas. It practically heats the entire facility.

The design also dovetailed snowmelt systems extending about 10 feet out from the front and rear entrances of the car service area.

"In the middle of winter, they're not sludging through sleet and rain," Shamenek says. "We also tied in several rooftop units. We have hot-water coils in those systems as well that are tied into that system. They've seen very inexpensive operating costs based on using the waste oil boiler systems."

All told, the radiant system heats water through 12 Uponor manifolds encompassing three interior zones — the main showroom, the service drive-thru area and the service garage. The exterior snowmelt system was completed in two zones with an independent glycol loop and two dedicated manifolds.

There are three different dedicated heat exchangers from the boiler to the radiant loops. That includes two heat exchangers and two Bell & Gossett pumps for the interior and one heat exchanger dedicated to the exterior glycol loop with a standalone pumping system from Bell & Gossett, explains **Wayne Howe**, director of MEP services at Mowery.

There's a significant increase in planning and components required for a waste oil system compared to a standard gas boiler system. In the summer, when the facility is not using heat, the dealership will store the extra waste oil in an 8,000-gallon double-walled storage tank outside, complete with a leak detection system, a high-low pipe and low-level alarm system. The large storage tank then pumps into the day tank inside the facility which feeds the boilers.

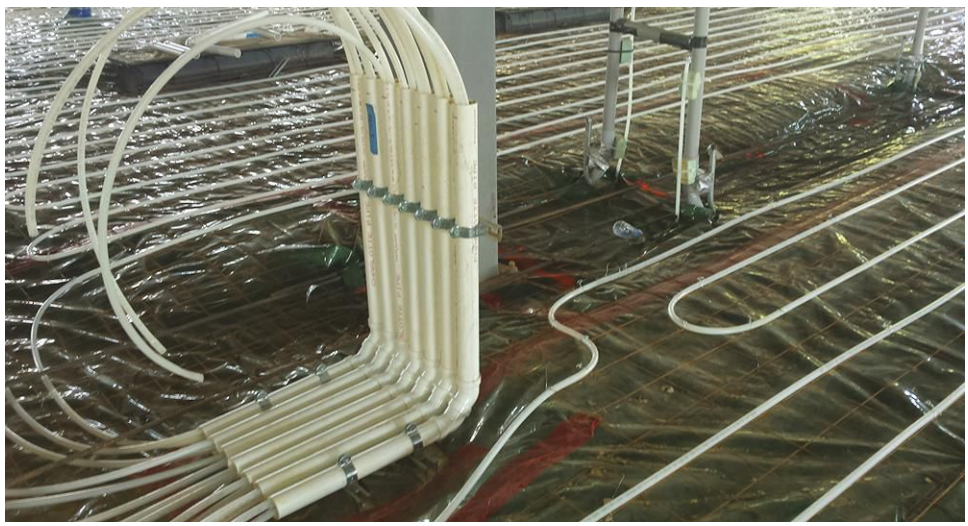
"We had to coordinate, plan and figure out the best place to put these tanks underground," Shamenek says. "And we're running snowmelt off the same system, so we did have to add some flat-plate heat exchangers so we can exchange hot-water boiler heat to the glycol side so it could be pumped outside under the sidewalks."

Ice-b-gone

Snow shovels and snow blowers have gone the way of the dinosaurs at the new facility, thanks to the automatic snowmelt areas. Surface temperature detectors trigger the Tekmar control system when outside temperatures hit 35° F. Radiant heat then maintains a temperature of 32° continuously in order to avoid any reoccurring ice, and to immediately melt snow or freezing rain without a long startup.

"The snowmelt areas have never and will never see a shovel," Howe says. "The second we get down to the correct temperature and there's moisture on the sensor, it comes on automatically."

Inside, Tekmar sensors maintain a flat 78° temperature. Unless the outside ambient temperature drops down into the 20s, seldom do the heating units ever fire, Howe says. "We're actually heating that building basically with the radiant flat."



This is the in-slab radiant Uponor Wirsbo hePEX floor piping in the service garage. Shown are 2-inch PVC sleeves for securing and routing the PEX piping below slab, prior to concrete pour.

LEED the way

Air quality, recycled materials and other green options

Mowery stresses indoor air quality during both construction and after occupancy, meaning responsible usage and storage of construction materials, education of the workers and ensuring there is proper ventilation and filtration during construction.

The project also scored points with USGBC for using products that incorporate recycled content, and for using 100% LED lighting both inside and out.

"That's a huge energy driver for a project like this," Sutton says.

They also purchased green power for the facility, earning more points from USGBC. Another point of emphasis, and important for USGBC, is the use of low-flow fixtures for plumbing. They chose Sloan flush valves and Kohler fixtures.

Local awareness and ROI

The Easton, Pennsylvania region is "open" to sustainability, Sutton says, and it generally understands the benefits. But that does not always mean a focus on LEED certification. When a national brand or major developers have a project, often it arrives with benchmarks that allow the contractor to go for certification. For more local projects without multinational brand benchmarks driving certification, Mowery often builds to efficiency levels that could quality for LEED honors, even though the owner doesn't apply for official certification, due to cost.

Explaining the cost-benefit analysis and philosophy of LEED building to customers is an educational and holistic process that encourages looking at the building as a total system, Sutton says. It's important to see the big picture.

"We try to educate our customers," he says. "Their buildings are a long-term investment, and the construction cost is only about 5% of the cost of the lifespan of your facility. We feel the best way to spend their money is making their facilities more efficient and comfortable for their occupants." pme

From left, Howe, Knaub and Shamenek stand beside Clean Burn CB500 boilers. Bell & Gossett pumps are installed above their heads.

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By Ed McMenamin | mcmenamine@bnpmedia.com

Meet Blair Minyard, the new ASPE Board of Directors VP of Education

Minyard looks to expand speakers bureau, increase programming.

Find a successful professional and there's a good chance they had a great mentor. For **Blair Minyard**, the new vice president of education on the ASPE Board of Directors, that person is new ASPE President **Carol Johnson**.

Minyard initially joined ASPE at the encouragement of Johnson, the Alabama chapter president at the time.

"I had been working in the industry less than a year," she says. "I met one other female in the chapter who took me under her wing. Ironically, Carol is the ASPE president for 2018–2020. I don't think I could have asked for a better mentor, friend and role model within the industry. Since then, I would have to say I have been hooked. I have worked continuously on the chapter level in varying chapter positions, and I'm now involved with the society level."

Alongside Johnson and **Brianne Hall**, ASPE's vice president of legislative, Minyard joins a strong representation of women in ASPE leadership. "It is refreshing to see women in prominent roles and breaking into a male-dominated profession," she says. "However, I like and work well with the men on the board and in my company. I believe our performances should be strictly based on our ability, not our gender."

Minyard has made it a point to pass along the encouragement and guidance that was such a boost in her young career to others following in her footsteps. Before being elected to the ASPE Board of Directors in September, she served as the ASPE Young Professionals Liaison to the board. That experience taught her that ASPE's members are hungry to learn, she says. In a profession that is slowly aging out, ASPE's young members are in need of gaining the "experience knowledge" at a much faster pace.

The liaison role also enhanced her interest and knowledge of the inner workings of ASPE. She points toward two specific items of accomplishment. First, she worked to have a successful leadership forum at the ASPE Technical Symposium in 2017 in Montreal; and second, she created AYP region liaisons to mimic the structure of the Society. This allowed chapters within the region to help establish events and communication in support of those events.

Late last year, with transitions among the board and the education VP position left vacant by an incumbent, moving up to VP of education felt like a natural fit, she says.

"My array of diversification from school, design work and now in the construction field, I have been able to see many aspects involved with our membership," she says. "I have always been a big proponent of education. I have taught independent classes as well as served as an adjunct professor at both Jefferson State Community College in Birmingham, Alabama and The University of Alabama at Birmingham. So the vice president of education just seems to be a perfect fit for me."

New ASPE Vice President of Education Blair Minyard is a virtual design and construction engineer at BL Harbert International in Birmingham, Alabama.

Photo credit: John Aljoher, BL Harbert.

During her term as education VP, Minyard has three goals right of the bat. First, she says members need more updated and frequent educational items offered by ASPE. Second, she intends to update the organization's speakers bureau to help regional chapters find speakers. Third, she wants to continue the great technical presentations at the ASPE Technical Symposium in Pittsburgh later this year and at the ASPE Convention & Expo in New Orleans in 2020.

Beyond her direct responsibilities as education VP, Minyard identifies the quality of drinking water and how it impacts people's safety as one of the biggest concerns of the industry as a whole.

"As the focus on water conservation and quality are made more publicly aware, it is our duty in the industry to develop the path moving forward," she says.

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By Mike Miazga | Group Editorial Director | miazgam@bnpmedia.com

A.O. Smith gets closer to its customers

Water-heater manufacturer benefits from smart technology adaptations.

Recently, ***pme*** headed down to Ashland City, Tennessee, for a visit to A. O. Smith's residential water-heater facility where it chatted with Vice President of Marketing **David Chisolm** and Senior Manager, Commercial New Product Development **Matt Schulz**. Chisolm and Schulz talked about A. O. Smith's push into smart technology, emphasis on training and what's next on the horizon for the manufacturer.

pme: What's new on the residential water-heater front?

DC: One of our interests is centered around heat-pump water-heating technologies. This continues to gain momentum to the point we are seeing rebates upward of $750 for installation of a heat-pump water heater from utilities to end users. Our efforts have been about educating our channel partners to the existence of these rebate programs so they can utilize that information in their selling efforts. One of the biggest barriers with this technology is upfront cost. An end user wakes up in the morning and they are not planning on spending money on a water heater, but they took a cold shower and now that's No. 1 on the list. This type of purchase typically isn't something you are thinking about today or the day before. You are looking for the quickest and most cost-effective way to get back into hot water, so in that environment trying to sell an alternate energy-efficient technology is a challenge. The rebate dollars are there to offset that upfront cost.

We're training contractors on what that sales message looks like. If you walk into a home and see an electric water heater in a garage or basement, that's a perfect application for a heat-pump water heater. You are saving the end user on energy costs by putting in a more energy-efficient water heater and the contractor also can make more margin — so it's a win-win. It's just a matter of getting broader adoption and broader awareness for these alternate technologies.

pme: What is one key trend A. O. Smith is seeing on the commercial side?

MS: All products in our Cyclone line leave the factory with onboard WiFi and connectivity capability. Now the end user can get data on how the unit is performing, how it is applied and if there is troubleshooting needed. There is much more visibility into the historical performance, as well as very clear alerts into what is going on with the product today. With the connectivity push from a service and support standpoint we are sending support agents out to the jobsite with very clear information. They go there with the right part and come to the jobsite already aware of what they need to do.

DC: Connectivity also is helping us with product-design elements. We can take that intelligence on how products are performing in the field and use that in our product-development cycle. It allows us to be much more intelligent in the way we design products because we are getting much better visibility into end-use applications.

pme: What are your customers asking for?

MS: They are looking to us for direction and help choosing the right technology and the right product. With more options out there, we're getting more questions asking which water heater is right for a particular application.

DC: The game is getting more complex with condensing technologies, tankless, heat pump, solar and the list goes on. A consumer walks into a situation where they took a cold shower and now they have to make a selection quickly under duress. We are the experts. We are the technology innovation leaders in the space. We know all the complex attributes and we are able to take all that knowledge and simplify it for our customers who are in the market maybe a day every decade. Our selection tools are more oriented around questions customers can easily answer. How many showers a day do you take and how long do you take them? What is your fuel source? At the back end we have a large database of different attributes and they get adjusted based on how a customer answers these questions, and then we give them product choices based off that information.

A. O. Smith Vice President of Marketing David Chisolm says heat-pump water-heating technologies are gaining momentum. "You are saving the end user on energy costs by putting in a more energy-efficient water heater and the contractor also can make more margin — so it's a win-win," he says.

A. O. Smith Senior Manager, Commercial New Product Development Matt Schulz says connectivity will continue to be a major point of emphasis. "Connectivity is the obvious path," he says. "We have a lot more products we can put that technology on."

MS: It's the same dynamic on the commercial side. Our position is we want to put the right product in the right application and we can do that by getting a few questions answered around end-use application and that will help us narrow down the selection process.

pme: A. O. Smith has an impressive training studio here in Ashland City. How much of a game-changer has it been?

DC: The more training we can offer as a service to the channel, the more effective we are at doing our jobs and the better our products are applied. Everybody wins in this scenario. We've put a lot of money and effort into the training studio. It is near and dear to our heart. Now we can generate content in our training studio where we can record it, stream it and conduct Q&As at the end. We have the ability to push a lot of content to our channel, and as a result we have seen exponential growth in the number of people we can effectively reach in a given year.

pme: What's next for A. O. Smith?

MS: Connectivity is the obvious path. We have a lot more products that we can put that technology on. We are unique and ahead of others in that our iCOMM technology is standard on our premium Cyclone product.

DC: Connectivity gives us a lot of future options with product design and establishing those tighter connections to our customers. We're on a journey to get closer to our end-user customers based on very intelligent data. pme

For the latest industry news, visit www.pmengineer.com

Meet Blair Minyard, the new ASPE Board of Directors VP of Education

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First career steps and what's next

After college, Minyard remembers having "no clue" about plumbing design and its importance. The ASPE membership's collective knowledge changed that.

"The people I have met along the way have truly taught me more than I could have ever imagined," she says. "Books don't give you all the information, all the time.

"If you asked me five years ago if I would be where I am, I probably would have been in sheer shock. I currently work for an international construction company [BL Harbert International in her hometown of Birmingham, Alabama]. It is a far stretch from working for a 50-individual design company with three plumbing designers only 10 years ago. Honestly in five years, I can't even imagine where my career will take me. But I promise you one thing, I will continue to focus on education and continuously developing my skill sets."

She has simple advice for someone considering joining the plumbing engineer industry, "Go for it!"

"Plumbing engineering is a wide-open field with many opportunities for anyone willing to study, work hard and care about what they do," she adds. "Plumbing engineering is not only necessary for every building, big or small, but it is rewarding to know you can help design plumbing that works well and makes life for the occupants more convenient." pme

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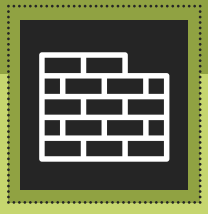

LiDAR, BIM, 3D printing and artificial intelligence are some of the technologies being used to create building envelopes that meet owner needs and expectations. We'll explore the latest in designing for energy efficiency as well as ensuring the system performs as specified.

ROOFING

Knowing the evermore stringent roofing codes can be a tricky business. This track will keep you up to date on the latest, as well as how to avoid roofing mistakes, deal with legal issues and more.

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According to MCAA's WebLEM (Web-based Labor Estimating Manual), sweating a 1-inch valve takes about 40 minutes, and pressing the same 1-inch valve takes about 12 minutes. Now consider when you have to "step down" municipal water, coming in from the street to your mechanical room, taking a 4-inch line down to 1 inch.

WebLEM tells us that sweating a 4-inch ball valve will take *more than 2.5 hours*. Pressing that same 4-inch valve will take only *minutes*. That's one valve, consuming hours of labor versus a few minutes.

Now, we know that you can sweat a 1-inch valve in less than 40 minutes. But we can also press a valve into place in less than 12 minutes, too. However, in order to make an apples-to-apples comparison, our calculations are based on time statistics from MCAA's WebLEM.

UltraPress valves are available in brass, bronze and Milwaukee Valve's UltraPure lead-free alloy. Plus, *all* UltraPress adapters (both integral and add-on) are constructed of UltraPure alloy. An UltraPure lead-free alternative is available in every UltraPress size.

Now the family is complete with the addition of UltraPress Check Valves from ½-inch to 3-inch sizes.

In order to seal without leaking, the bead in each UltraPress valve contains a pre-installed EPDM O-ring. This O-ring is treated with lubricant, and engages to complete a seal with the copper pipe when "pressed." The O-ring has an operating temperature range of 0° F to 250° F. When properly installed, the EPDM seal will last as long as the copper pipe.

UltraPress is designed for systems that are rated up to 200 psig at 250° F. Our standard sweat (or threaded) product offering is available for higher-pressure applications and service in brass, bronze or UltraPure. For more detailed application evaluation and approval, contact Milwaukee Valve or Hammond Valve engineering.

With no open flame required to sweat a valve into place, water service connections can be made wet or dry for faster, easier installations and repairs. And no open flame means no need for pulling hot-work permits. Also, some press systems require special tools for installation. But UltraPress valves can be installed with standard press-fit tools.

For more information on UltraPress and lead-free UltraPure valves, visit **www.milwaukeevalve.com**.

ULTRAPRESS

MILWAUKEE VALVE HAMMONDVALVE Ultra Pure

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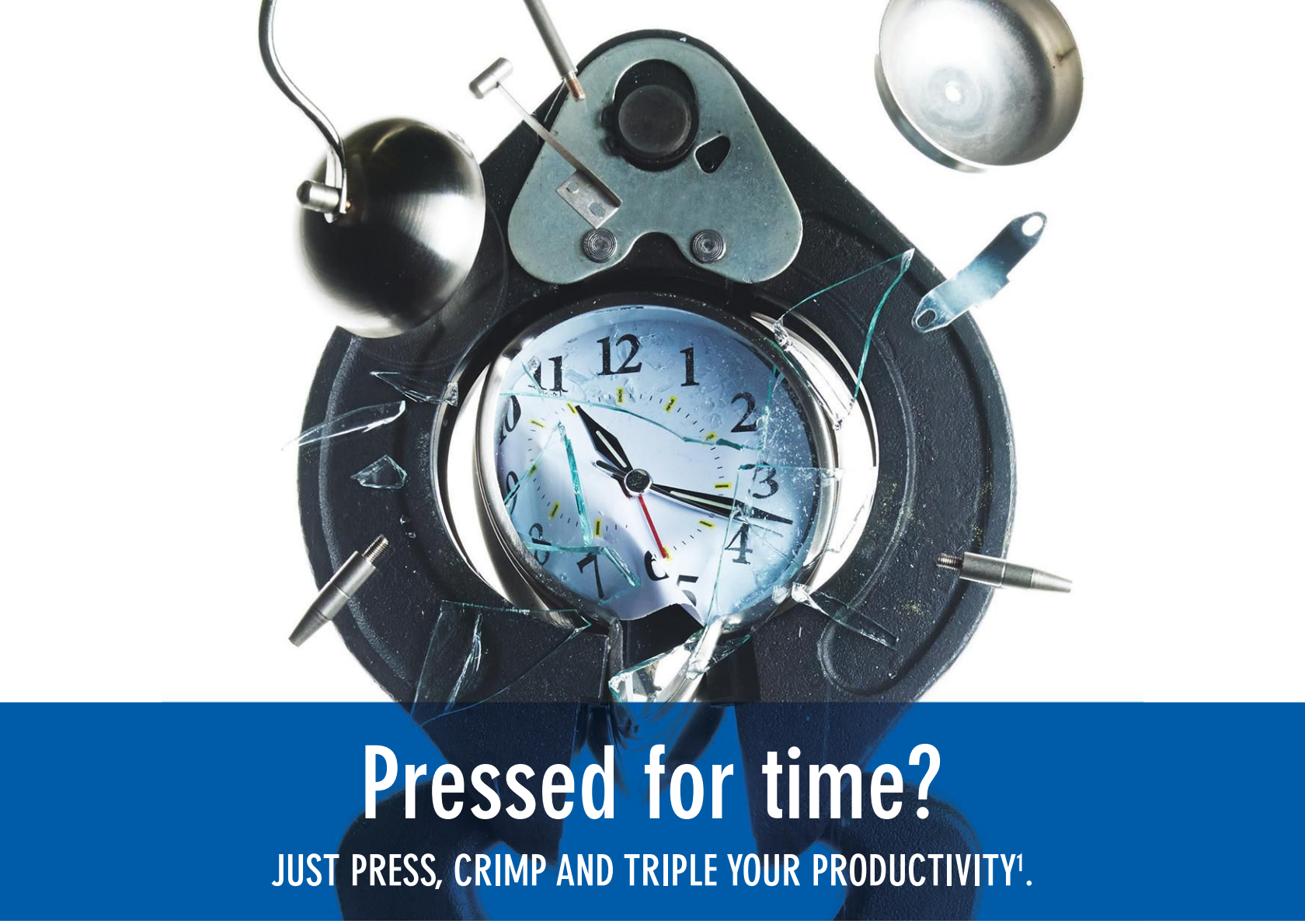

Pressed for time?

JUST PRESS, CRIMP AND TRIPLE YOUR PRODUCTIVITY[1].

Reduce installation time up to 68% with Milwaukee Valve's extensive new line of UltraPress press-connection valves. Perfect for potable water, HVAC and inert gas systems, UltraPress valves quickly install without brazing, soldering or special tools. With no open flame required, water service connections can be made wet or dry for faster, easier repairs. Plus, UltraPress eliminates heat-installation costs like solder, flux, propane torches, oxygen/gas bottles and "hot" work permits.

Available in fully annealed brass, bronze and lead-free[2] UltraPure® alloys—in ball, gate, globe and check styles—you're sure to find the valves you need. Accessories, too, like extension, INSULATOR/MS™ and lockout handles.

See the full line of UltraPress products, additional features, full specifications, and a downloadable brochure at **www.MilwaukeeValve.com.**

[1] Estimate based on MCAA's WebLEM (Web-based Labor Estimating Manual).
[2] Lead content less than 0.25%, defined as lead-free by US Senate Bill S.3874.

ULTRAPRESS

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Increase productivity with SharkBite EvoPEX

SharkBite EvoPEX is an innovative push-to-connect plumbing system, designed to make new construction and repipe installations faster and more efficient. It enables an entire potable water system to be plumbed without needing special tools, crimping, glue or solder. As a result, installations are cleaner and there is less risk of potential leaks due to installation errors.

To install SharkBite EvoPEX, simply cut the PEX Pipe, make sure the ends are cut square and that the surface is smooth. Before you make the connection, ensure that the EvoPEX fitting and pipe are clean from dirt and debris. Then firmly push the pipe into the fitting, making sure you do not insert the pipe at an angle. Lastly, check for the green visual indicator, which shows that a permanent and sound connection has been made. After you make the connection, you can immediately pressure test the system. Another feature of SharkBite EvoPEX is that it is resistant to mineral buildup and corrosion, improving water pressure and hot water delivery.

For further security, the SharkBite EvoPEX system is backed by a 25-year system warranty with consequential damage coverage to provide years of customer satisfaction. SharkBite EvoPEX is proudly made in the U.S. We own our entire manufacturing process, which means every EvoPEX fitting and piece of PEX pipe is guaranteed from concept to delivery.

To learn more about SharkBite EvoPEX, visit **www.sharkbite.com/evopex/**

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Saniflo Sanicom 1 simplex drain pump is designed for heavy-duty commercial applications

With its resistance to high water temperatures and its ability to directly connect to high-efficiency washing machines, the 1 hp Sanicom 1 simplex drain pump from Saniflo is designed to pump gray water away from demanding commercial applications, such as restaurants.

Applications that can benefit from the Sanicom 1 are high-efficiency washing machines used in commercial applications, which can connect directly into the pump, rather than indirectly through a laundry tray, eliminating the extra cost and installation of a utility sink. In addition, the unit is specially designed to withstand liquids with highly acidic properties, such as wastewater from processing applications. The model can also handle hot water up to 194° F.

"Saniflo's Sanicom 1 is a versatile drain pump that can effectively serve a variety of customer needs — from restaurant managers seeking to drain high-temperature dish water to processing engineers needing to pump out wastewater resulting from food production," Saniflo USA CEO **Regis Saragosti** says.

OPERATION

The Sanicom 1 is capable of reliably and efficiently handling multiple gray-water fixtures simultaneously, including commercial dishwashers, washing machines and other heavy-duty wastewater applications.

Gray water enters through one of two side inlets, both measuring 2 inches, before being pumped to the drain line through a 1-inch rigid discharge pipe, which can remove up to 33 gpm. The system includes a non-return valve as well as a rubber discharge elbow that adapts to the discharge pipe and can be rotated 360 degrees.

The Sanicom 1 can handle temperatures up to 194° F, making it perfect for demanding commercial applications such as restaurant dishwashers.

The Sanicom 1 can handle multiple gray water fixtures simultaneously, including commercial dishwashers, washing machines and other heavy-duty wastewater applications.

Sanicom 1 is able to discharge gray water up to 25 feet vertically, 250 feet horizontally, or a combination of both. (A vertical run of 3 feet is equal to a horizontal run of 30 feet.) It should be noted that when wastewater is drained into the pump through either of the inlets, an external check valve (not supplied) needs to be installed. The powerful 1 hp motor and a non-clogging impeller design allow the unit to pass laundry lint and other small solids up to 3/8 inches in diameter.

The unit vents through a 1-1/4-inch vent connection located on top. A two-way air vent should be used to allow free airflow both ways.

HIGH-PERFORMANCE FEATURES

Unlike conventional plumbing installations, which may involve the hassle and expense of breaking through concrete to connect to a drain line, the Sanicom 1 above-floor plumbing system allows for a dishwasher or washing machine wherever needed.

The two side inlets are located close to the floor, helping to speed installation by reducing the height at which floor-level plumbing fixtures must sit to achieve proper drainage.

"Whether a restaurant wants to add a bar, or a hotel needs to move its laundry area away from the drain line, Sanicom 1 provides a cost- and labor-friendly solution," says Saragosti. "Innovative solutions like the Sanicom 1 offer the power and flexibility to add new plumbing fixtures wherever they work best."

For more information about the Sanicom 1, contact Saniflo at 800-571-8191 or visit the Saniflo website at **www.saniflo.com**.

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Teel BQ Americas introduces innovative new piping material to the U.S.

There is a new option for piping materials — PP-RCT — and a new company, Teel BQ Americas, is ready to deliver it. PP-RCT is an innovative new grade of polypropylene material with better temperature resistance and better chlorine resistance than more common PP-R grades. It still maintains all the advantages of PP pipe over legacy materials, like copper and steel. PP-RCT will not rust or corrode, is significantly lighter and offers fused leak-proof installations. PP-RCT boasts higher operating temperatures and pressures than polyethylene and is approved for potable water use.

PP-RCT will not rust or corrode, and it offers better temperature resistance and better chlorine resistance than more common PP-R grades.

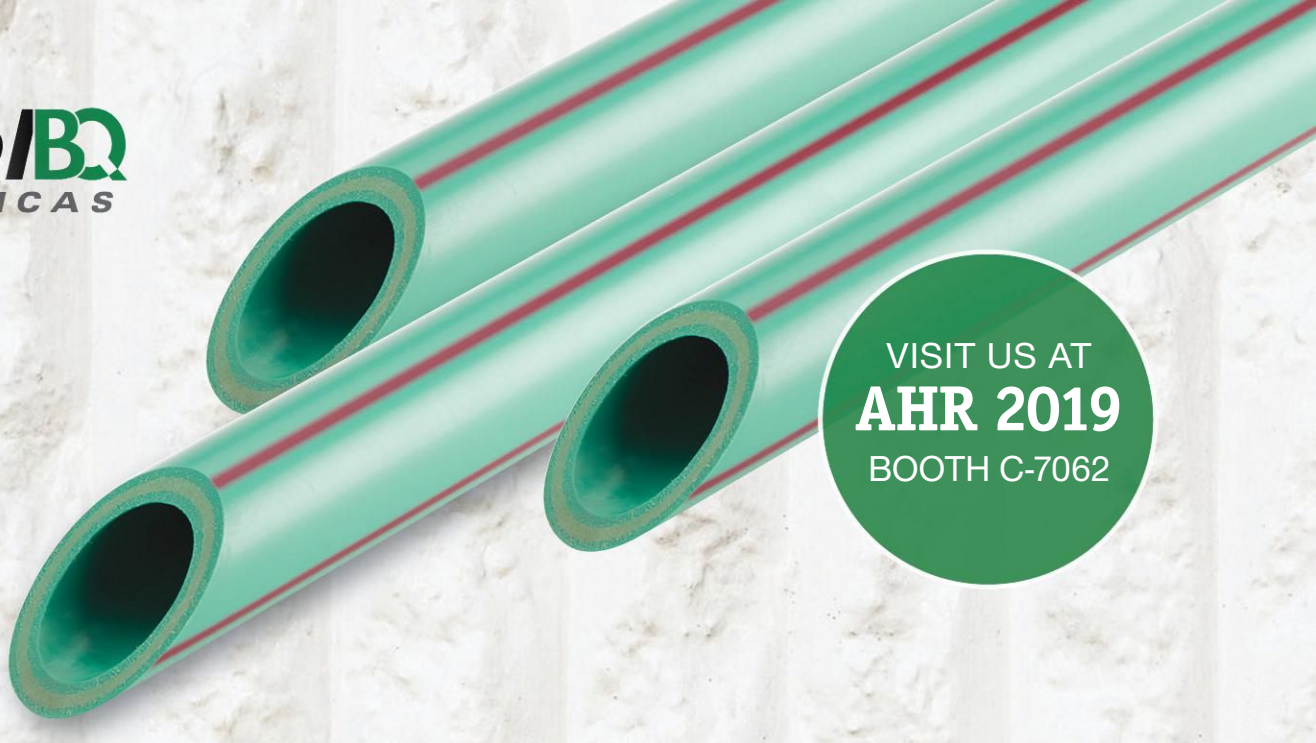
Teel BQ Americas is a new company established purely to bring this innovative material to the North American market. It is a recently formed joint venture of BQ Rohrsysteme, a well-established German producer of PP-RCT pipe, and Teel Plastics, a leading U.S. producer of custom extruded pipe and tubing products. The company will base its operations in Wisconsin, near the Teel headquarters, and use a nationwide system of distributors and sales representatives to provide product to end customers. Teel BQ is planning to have dedicated U.S. facilities and support. It will begin manufacturing products in the U.S. soon.

Teel BQ is differentiating from many products in the market by offering only PP-RCT pipe and fittings. The products range from 1/2 inch to 24 inches (20mm-630mm) in standard metric sizes and SDRs. Teel BQ is also offering fully injection molded fittings to support its line of pipe products. Factory injection molded fittings can offer higher quality and fabrication savings compared to fabricated fittings. It even avoids the need for pressure deration, making previously impractical systems possible.

Teel BQ will focus on information about RCT and its advantages over both legacy materials and PP-R. "We think PP-RCT is a great material and we want system specifiers and engineers to know and understand all the great advantages of this product," says **Bob Mandigo**, Teel BQ VP of sales, "It is a better pipe."

Teel BQ Americas will show its PP-RCT pipe and fittings at the AHR Expo in January. The display will feature an array of products, including the large injection molded fittings. They will be at booth C-7062. For more information, visit **www.teelbqamericas.com.**

TeelBQ AMERICAS



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It's time to think differently, and innovate your next pipe project. Teel BQ PP-RCT pipes are better than legacy materials due to their light weight and superior properties. They are manufactured from a next generation polypropylene material.

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A better pipe.

Contact us today for more information.

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INDUSTRY SPOTLIGHTS
TWO THOUSAND NINETEEN

Maximize hybrid piping systems with PEX and new copper press transitions

It's no secret — the industry is moving toward smarter piping materials. They make it faster and easier to install domestic-water and hydronic heating and cooling systems that help keep projects on-schedule and on-budget while also making jobsites safer for workers.

Innovative companies are answering the call for solutions that offer installation efficiencies and also provide greater performance when it comes to system longevity.

PEX POSITIVES

Take PEX, for example. With its flexibility, durability and long coil lengths, PEX (an acronym for crosslinked polyethylene) is proving to be the smartest piping solution for risers, distribution piping and even direct-burial applications 3 inches and down.

PEX pipe resists corrosion, pitting and scaling, and its unique shape memory allows it to expand and retract back to its original size, making it highly resistant to freeze damage. The piping system is approved by all building codes, manufacturing standards and listings for installation in both residential and commercial applications, and the ASTM F1960 ProPEX expansion fitting system is the professionals' choice for fast, easy and reliable connections.

A ProPEX expansion connection is actually the strongest part of a PEX system. If installed properly, it will not leak. In fact, pull testing shows that even 3,000 pounds of force with over 13 inches of displacement does not compromise the integrity of the connection.

To make a connection, the installer simply places an expansion ring on the end of the pipe and then inserts an expansion tool into the pipe to expand the ring and pipe. After a few expansions, the installer removes the tool and inserts the fitting. As the flexible PEX pipe and expansion ring shrink back down, it creates a strong, durable connection around the fitting.

PEX pipe resists corrosion, pitting and scaling, and its unique shape memory allows it to expand and retract back to its original size, making it highly resistant to freeze damage.

ProPEX lead-free (LF) brass copper press adapters are the industry's first PEX expansion to copper press transitions for potable plumbing and hydronic piping applications.

Best of all, since ProPEX expansion fittings have a larger ID than standard PEX insert fittings, the connection is impossible to dry fit. This eliminates the concern of blow-offs due to incomplete connections.

PRESS POINTS

For larger pipe sizes over 3 inches, the flameless connection system provided by copper press moves away from solder, heat and flame to a system that is faster and easier to learn and quicker to install on the jobsite.

So, imagine what could happen if you combine the best of both worlds — PEX expansion and copper press?

Now, you can.

With the launch of the industry's first ASTM F1960 ProPEX expansion to copper press transitions, Uponor is providing professionals with a solution that is completely flameless to eliminate the hassles, costs and hazards of soldering while also offering a system that is fast and easy to learn.

The new ProPEX lead-free (LF) brass copper press adapters are manufactured from high-quality, lead-free brass to meet all local and national domestic-water building codes. They also feature a patented design for securely fastening the pipe and fitting together, eliminating the need for a stainless-steel ring.

Compared to copper sweat, these new adapters reduce an overall project timeline by an average of 71%, helping to manage a project's schedule and, ultimately, the bottom line. Best of all, the adapters are confidently backed by an industry-leading 25-year transferable limited warranty for added peace of mind.

To learn more, visit **uponorpro.com/copperpress_us**.

uponor

Progress means taking “no” for an answer.

You get fast, strong and reliable connections with Uponor pipe and fittings. What you don’t get (glues, solvents and hot work) keeps jobsites safer and schedules on track. There’s more to “no” at uponorengineering.com.

We mean progress.

Weil-McLain introduces advanced, energy efficient Stainless Steel Vertical Firetube commercial boiler

New state-of-the-art boiler line features industry-leading thermal efficiencies, contractor-friendly controls and durable design for all commercial applications.

Hydronic comfort heating leader Weil-McLain now offers its most advanced commercial stainless steel boiler. The new Stainless Steel Vertical Firetube (SVF) features industry-leading thermal efficiency between 96.3% to 97.1%, unrivaled ease of installation and maintenance, the intuitive and user-friendly UnityTM control system, and Weil-McLain boiler design reliability and longevity.

"The SVF boiler line was developed with the contractor in mind and utilizing extensive market research and testing to help shape design and functionality," says **John Miller**, senior product manager with Weil-McLain. "The new SVF showcases the quality, durability, serviceability and innovation that contractors have come to expect from Weil-McLain, and demonstrates our commitment to industry-leading hydronic heating performance."

Available in 750 and 1100 models, the SVF line features a stainless steel firetube heat exchanger for best-in-class corrosion resistance, a new and bold exterior look, and simple, user-friendly controls to make installation and operation easy for contractors. With superior thermal efficiencies, the SVF line offers cost savings and energy efficiencies that could allow building owners to qualify for local utility rebates, where available.

The unit meets all market-driven bid specifications, and is designed for most heating needs, including applications in schools and other educational facilities, public institutions, healthcare buildings, offices, hotels, multi-family homes, churches and more.

Time-saving installation features include heavy-duty roller casters for improved maneuverability in confined spaces, industrial-grade leveling legs, an end-shot burner design requiring only 18 inches of overhead space, and the advanced Unity control set-up wizard.

"The Unity controller is designed to reduce installation and set-up time for contractors, simplify boiler system design for specifying engineers, and improve control interface commonality and communication across the entire Weil-McLain high efficiency boiler line," says Miller.

For ease of service, the SVF features a hinged cover plate with quick access to the burner and fire-tubes for simple heat exchanger wash-down with no need for additional disassembly. It also features an open back panel design with no side access required for service, as well as a removable and replaceable condensate base.

Other key features include:

- 160 psi working pressure
- Natural gas or propane fuel options
- Modbus communication with BACnet/LonWorks compatibility
- Low NOX
- Full line of venting options

To learn more about Weil-McLain's journey to create and deliver sustainable heating solutions, visit **https://www.weil-mclain.com/products/commercial-boilers**

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product focus: AHR Expo preview

Condensing wall-hung boilers
With a patented stainless steel fire tube heat exchanger, Navien's NFB condensing wall-hung boiler brings the industry a new level of technology in this category. Its 95% AFUE, 10:1 turndown ratio, advanced controls, light weight, flexibility of venting, cascading and intuitive display, all make the installer's job easier, Navien says. Exceptionally quiet operation allows for installations in or near media rooms while the sleek and compact design saves space, the company adds. Available in two sizes, NFB175 and NFB-200 MBH. **Navien | www.navieninc.com | Booth C6119**

Pre-insulated plastic piping solution
GF Piping Systems' COOL-FIT ABS Plus piping system is a fully pre-insulated plastic piping system for secondary cooling and refrigeration that features energy-efficient, non-corroding, maintenance-free performance, the company says. It's suited for food production, process cooling, cold storage, beverage production, supermarkets, dairies, air conditioning and others. COOL-FIT ABS Plus has a core pipe made of ABS, which is insulated with high-density polyurethane (PUR). The insulation is protected with a black polyethylene jacket that is water-tight and UV resistant. This ready-to-install, pre-insulated system maintains its original properties for its complete life span of 25 years, GF Piping Systems notes. **GF Piping Systems | www.gfpiping.com | Booth B1147**

Commercial condensing boiler
AERCO's commercial condensing boiler features a combination of patented technology (AERtrim O2 trim), advanced features and innovative onAER Predictive Maintenance analytics tool. The Benchmark Platinum condensing boiler optimizes system performance and provides maximum efficiency up to an additional 9% for bigger savings and greater return on investment, AERCO says. Benchmark Platinum helps save money by reducing install, startup and annual operating costs; Simplifies startups and maintenance; and strengthens system design, performance and efficiency, the company adds. A new feature will be unveiled at AHR Expo. **AERCO, a Watts brand | www.aerco.com | Booth C6805**

Hot water recirc pump
Grundfos' ALPHA 15-55 HWR-D is a wireless on-demand hot water recirculation pump with a permanent magnet motor. The on-demand functionality allows the homeowner to signal when hot water is required, significantly reducing both water and electricity consumption. The ALPHA 15-55 HWR-D is the only on-demand system of its type with a permanent magnet motor, Grundfos notes. With its simple plug-and play-installation and competitive price, it is the most complete offering in the marketplace, Grundfos adds. **Grundfos | www.grundfos.com | Booth B1649**

Tankless water heater
Bradford White's Infiniti K Series of tankless water heaters is the smarter way to go tankless, the company says. It uses STEADISET technology, which keeps water temperature consistent and virtually eliminates the "cold water sandwich," with no internal buffer tank. It features SRT (scale reduction technology) for better performance, longer operational life and lower maintenance costs vs. conventional tankless, Bradford White says. The series delivers efficiency up to 0.96 UEF, which helps maximize the financial benefits of choosing tankless, Bradford White points out. **Bradford White Corp. | www.bradfordwhite.com | Booth C6463**

product focus: AHR Expo preview

Magnetic dirt filter
ADEY's MagnaClean DRX magnetic dirt filter provides a cost-effective solution for removing debris and black iron oxide sludge from commercial hydronic heating systems. The design allows it to be installed in-line or side-stream in either a vertical or horizontal orientation. Built to ASME standards, the filter consists of an external magnetic belt, containing high-performing neodymium magnets, wrapped around a precision-engineered, stainless-steel canister. As water passes through the canister, iron oxide is captured by the intense magnetic field. Magnets remain outside the flow, so there are no internal sleeves or components that must be removed and individually cleaned. **ADEY | adey.com/us/drx | Booth BC4900**

Magnetic boiler filter
Webstone, a brand of NIBCO, announces its new magnetic boiler filter. Designed to protect system components and maintain efficiency, the high-powered 12,000 Gauss magnet captures ferrous debris from the system before it reaches the boiler. G1 union connections with choice of press, FIP, MIP or SWT join to system piping. Service is made simple, with included service tool and optional isolation valves available on G1 unions, the company explains. **Webstone, a brand of NIBCO | www.webstonevalves.com | Booth B1838**

Recyclable potable water tubing
Legend's HyperPure PE-RT tubing is a flexible plastic hot and cold potable-water tube that is 100% recyclable, thus no more jobsite waste, the company points out. Bimodal polyethylene, raised temperature (PE-RT) technology produces a resin that has strength and flexibility due to its unique molecular structure. It is compatible for use in plumbing systems utilizing ASTM F1807 and 2159 PEX fittings with either copper rings or stainless steel clamps. It also is compatible with ASTM F2080 and F1960 cold-expansion PEX fittings plus ASSE 1061 push-fit fittings. It is backed by a 100-year Legend warranty. **Legend Valve | www.legendvalve.com | Booth C5853**

Hybrid water heating system
The Rinnai Demand Duo 2 hybrid water-heating system has two commercial CU199 tankless water heaters connected to a 119-gallon tank. No need to purchase multiple tank water heaters; the Demand Duo 2 features built-in redundancy and storage for high spike draws. Equipped with DuoSmart Tank Technology, the preinstalled recovery pump, controller, isolation valves and electrical junction box work together to maintain consistent temperature, and lower acquisition, operating and life cycle costs. **Rinnai Corp. | www.rinnai.us | Booth B3375**

Extruded aluminum heat-transfer plate
MrPEX Systems introduces a new style of extruded aluminum heat-transfer plate for 3/8" or 1/2" PEX tubing in the same plate. DuoTrack is 48" long by 3.75" wide with pre-punched holes featuring a double groove for two sizes of PEX tubing. This reduces inventory, space and cost, the company says. DuoTrack plates are low-mass and have a faster response time, higher output and lower water temperatures requirement as compared to joist heating without plates, the company explains. MrPEX encourages users to give the product a try the next time they have a suspended application. **MrPEX Systems | www.mrpexsystems.com | Booth B2176**

green scene: Commercial HETs

Innovative flushing platform
The popular VorMax flushing platform from American Standard is now available in two back outlet commercial models for the first time. VorMax technology has been independently verified to clean the bowl two times better than conventional toilets, and completely removes and flushes paper seat covers, American Standard explains. The toilets have earned WaterSense certification for providing high performance while using 20% less water than traditional 1.6-gpf toilets, American Standard says. The floor-mount Yorkville model features a taller, 16.5" bowl to meet accessibility requirements. The wall-hung Glenwall design is also ADA compliant when installed so that the seat is 17-19" from the finished floor with the trip lever on the accessible side. **American Standard. www.americanstandard.com**

Electric flushometers
Sloan is pairing its line of electric flushometers with its top-performing water closets to deliver a sustainable 1.1 gpf combination. With the demand for water conservation driving innovation, the floor-mount and wall-mount closets each work in harmony with SOLIS and ECOS flushometers to provide water-efficient solutions, Sloan notes. In addition, the ADA-compliant fixtures deliver the necessary evacuation performance and drain -ine carry – all with a white vitreous china surface and an elongated bowl. **Sloan. www.sloan.com**

Macerating toilet system
The one-piece, wall-hung Sanistar macerating toilet system from Saniflo combines a macerating pump and an electronically activated flushing mechanism. Measuring 18" wide and 20.5" deep, and with no external water tank, the self-contained wall-hung unit is ideal for tight spaces where installation space is at a premium, Saniflo says. The system saves water by using only 1.1 gpf, instead of using the standard 1.6 gpf. It can also pump water away from a nearby hand basin. A 1" copper or plastic discharge pipe pumps effluent 9' vertically and/or 100' horizontally.
Saniflo. www.Saniflo.com

Dual-flush technology
Niagara's Nano Toilet features a split-button design with options for a .5-gpf and .8-gpf output. It contains patented Stealth Technology, with a Stealth flush chamber and air transfer system, that guarantees a powerful, clean flush every time, Niagara states. This eco-saver fits an elongated bowl within the same space as a round, and has a 12" rough-in. This toilet comes with a noise-cancelling tank and a 10-year warranty. It is WaterSense certified, MaP-premium rated, and certified by the American Society of Mechanical Engineers. **Niagara Conservation. niagaracorp.com**

Water-efficient, hygienic tech
Duravit's Vero Air toilet combines sustainable functionality and hygiene. The toilet's rimless technology accommodates the square shape of the toilet bowl while minimizing water usage, Duravit says. Water flows in a horizontal arc, then vertically, before flushing the entire inner surface – complying with the EPA's rigorous performance mandate for HETs (1.28 or fewer gpf). The wall-mounted toilets, featuring dual-flush technology, allow for an effective 1.1 gpf. It also provides the optional HygieneGlaze 2.0, which is baked into the ceramic and kills 90% of bacteria after 6 hours, Duravit says. A SensoWash shower-toilet seat is also available, with individualized control of water, air, and seat temperature, wireless remote, three wash options, and power-saving mode. The toilets are complete with thin seat covers of 1 1/2" and are equipped with an optional slow-close function. Available in 1 size (14" x 22 1/2"). **Duravit. www.duravit.us**

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Freestanding bathtubs
Jacuzzi Luxury Bath's two new bathtub designs facilitate deck-mount faucet installations. The bathtubs come in two shapes — oval for Amalia and rectangular for Adatto — and offer a deck wide enough to accommodate most tub fillers. In addition, the baths allow enough room to maneuver within the bath wall to install a filler on the deck. Both baths measure 67" x 34" x 24" and feature large bathing wells accented by white, color-matched integral overflow and toe-tap drains. They are constructed from high-gloss acrylic reinforced with a proprietary fiberglass/resin formula to ensure a long-lasting quality surface, the company says. **Jacuzzi. jacuzziluxurybath.com**

Wholesale price list
NEOPERL's 2019 Wholesale Price List (Catalog 10) introduces a new "Buy America Act" section to assist with government projects. New products are featured to fulfill the needs of the healthcare and correctional industries by providing unique design structures and stream patterns. The tabbed sections allow for an easy search of products by stream types and flow rates, as well as specialty products necessary for the plumbing industry. **NEOPERL. www.neoperl.com**

Carbonated water dispenser
Oasis' multitasking Ultra S carbonated bottle cooler dispenses cold still water, chilled sparkling water and hot still water. It provides virtually continuous delivery of chilled still and sparkling water. the company says. A two-piece hot-water tank also provides 8 liters of hot water per hour. Lighted, color-coded LED activation buttons allow for simplicity of use. It features a pressure vessel direct chill (PVDC) system combined with a specially designed CO_2/water mixer for chilling and carbonation performance. The tank is made from food-grade plastics and 304 stainless steel for ultimate safety. The cooler can accommodate up to a 5-lb. CO_2 cylinder (pressure regulator and CO_2 cylinder sold separately). **Oasis. www.oasiscoolers.com**

Indirect-fired water heater
U.S. Boiler Company's Alliance LT thermoplastic-lined, indirect-fired water heater for residential and light commercial applications features a corrosion-resistant tank designed to provide outstanding thermal performance. The tank itself is light, offering ease of transport and installation. By utilizing a proprietary, double-bonded thermoplastic tank liner, the Alliance LT can withstand even the most aggressive water conditions without the use of an anode rod. The Alliance LT also features 1" of dense foam insulation, providing minimal standby heat loss. Bolted, topside connections provide easy access to the coil without the need to train the tank. **U.S. Boiler Co. www.usboiler.net**

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