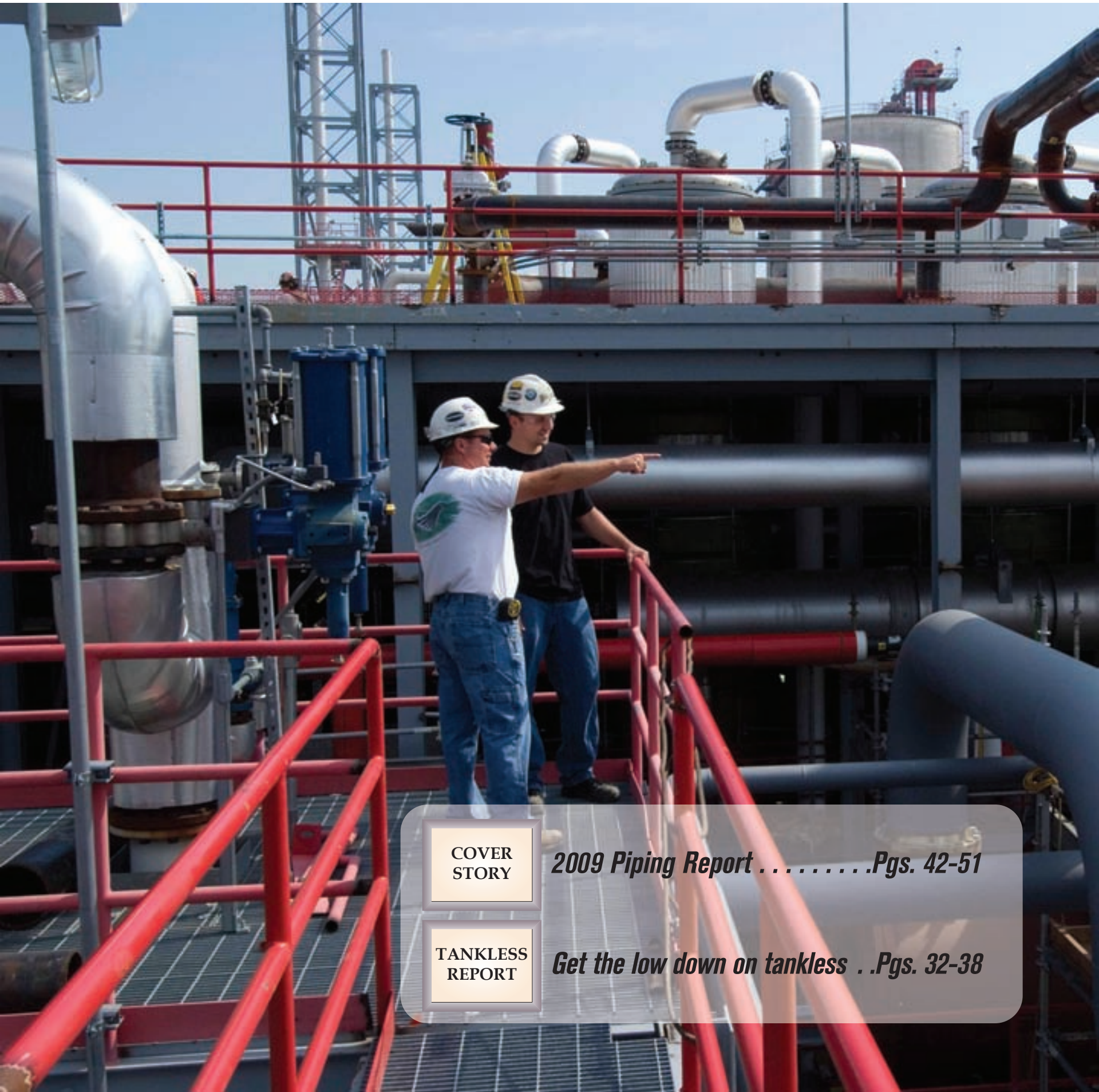


A TMB Publication

Phc News

plumbing & hydronic contractor news



COVER
STORY

2009 Piping ReportPgs. 42-51

TANKLESS
REPORT

Get the low down on tankless . .Pgs. 32-38



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Circle2 on Reader Reply Card



On the Cover

Get the latest info regarding the piping industry from the 2009 Piping Report. Contractors from Mechanical Inc., Freeport, Ill., oversee an industrial piping project.

See story on page 42.

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32 Tankless report

Here's a big section devoted to tankless water heating; full of information about the latest in tankless water heaters a busy contractor will appreciate.

42-50 Piping Report

Piping & Equipment Inc. report shows activity steady to slow; Morris Beschloss explains where PHCP piping is headed; is CPVC a good choice for under-slab joints?; mechanical grooved systems eliminate flame-related problems on the job; consider lightning protection when installing metallic piping systems.



Phc News

plumbing & hydronic contractor news

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California lead content requirements for plumbing products effective Jan. 1, 2010

ANN ARBOR, MICH. — New lead content requirements for plumbing products have been added to California's Health Safety Code (Section 116875; commonly known as AB1953), which goes into effect January 1, 2010. After this date, any pipe, fitting, or fixture intended to convey or dispense water for human consumption through drinking or cooking must meet a weighted average lead content of 0.25%. The requirement of this law was incorporated as an annex into the American National



Standard for health effects of drinking water system components: NSF/ANSI Standard 61.

Recently, however, there have been misleading statements from some industry sources indicating NSF 61; Annex G does not provide for compliance with the requirements of AB1953.

East Bay Municipal Utility District (EBMUD), which provides water to over 1.3 million residents in the eastern San Francisco Bay Area, was one of the original sponsors of AB1953. Representatives from

EBMUD worked with other utilities, regulators, plumbing industry and product manufacturing representatives to develop NSF 61, Annex G.

Richard Sykes, Manager of Natural Resources, EBMUD said: "Annex G of NSF/ANSI 61 — 2008 was developed with input from California's Department of Public Health and California's East Bay Municipal Utility District and establishes a conservative protocol to determine product compliance with the 0.25% maximum weighted average lead content requirement of California Health Safety Code (Section 116875). The DPH has stated to us (EBMUD) that compliance with Annex G ensures compliance with this requirement."

Richard Sykes explains: "I made the request to the NSF Drinking Water Additives Joint Committee with oversight of the standard to include the annex to allow manufacturers the option of being certified to California's reduced lead content requirement. The annex was developed with input from stakeholders in California and care was taken to assure full compatibility with the law. The adoption of Annex G last December fulfills the request made by the Joint Committee."

The NSF 61 committee is currently conducting a series of round robin testing with manufacturers, product certification organizations and the California Department of Toxic Substances to validate a referee analysis method for alloy lead content when testing of materials is required. When completed, the method will be incorporated into the standard.

The annex was developed to establish an American National Standard to determine product compliance with the 0.25% maximum weighted average lead content requirement of the California Health Safety Code, as well as a standard for other states to reference if they are developing similar regulations. A similar law has been enacted in Vermont and is scheduled to take effect Jan. 1, 2010.

Although the California law does not go into effect for several months, NSF is presently certifying products to NSF 61, Annex G. Certified products will bear the above marks signifying compliance with the standard and the new California requirement.

For more information, log on to www.nsf.org/business/water_distribution/faq.asp.

Addario's is first certified green plumber in Mass.

BOSTON — Addario's Plumbing, Heating, Cooling & Electrical, LLC recently announced its partnership with GreenPlumbers, a global brand formed by Australian-based Master Plumbers & Mechanical Services Association.

With the demand for Earth-friendly technology quickly on the rise, Addario's is committed to edu-



cating Massachusetts consumers on how to "go green." As an installer for tankless water heater manufacturer Rinnai, Addario's has taken the first steps to give homeowners new on-demand water options to decrease the amount of gas and water usage in the home.

In 2008, after 10 years in business, Addario's expanded its services to meet all home service needs. As a partner of some of the largest home improvement retailers in the country, as well as heating system giants National Grid, Trane and Burnham, Addario's believes this is the logical next step to building a future around new plumbing and heating technology.

Addario's is a leader in Massachusetts with the GreenPlumbers' Urban Dam project, a three-phase program to identify residential water and energy savings goals on a house-by-house basis. Each homeowner receives a comprehensive 50-point audit and installation opportunity providing immediate water and energy savings, followed by appliance and fixture change-outs and solar, gray-water and rain-water alternative technologies. The goal is to achieve and sustain water conservation through behavioral change and implementation of new technology.

Steven Addario, Jr., Owner of Addario's, said, "We are thrilled about doing something really positive for our company, our customers and most of all, our planet."

GreenPlumbers is national training and accreditation program that assists plumbers in understanding their role in the environment and public health. The program will result in increased water and energy savings for consumers and businesses, and will create a positive image for thousands of plumbers.

Ferguson honors local HVAC/R dealers

NEWPORT NEWS, VA. — Ferguson, a leading wholesale distributor of heating and cooling equipment, recently honored local HVAC/R dealers for their commitment to providing quality products and services to their customers. Ferguson's Fargo, N.D. branch recently awarded 6 plaques to local York and Luxaire dealers.

This is the inaugural year of Ferguson recognizing these honors.

- Most Improved for York: Connole and Sommerville Heating; Minot, N.D.
- Most Improved for Luxaire: Valley Plumbing; Fargo, N.D.
- Comfort Expert for York: Paul's Electric; Wyndmere, N.D.
- Comfort Expert for Luxaire:

Crossroads Electric, Inc.; Wyndmere, N.D.

- Dealer of the Year for York: Esser Plumbing and Heating; Perham, M.N.
- Dealer of the Year for Luxaire: Paschke Heating and AC; Fargo, N.D.

"Dealers were presented the awards on multiple efficiency improvements, including increases in sales and outstanding service and commitment to the product," said Trent Lee, general manager for Ferguson's Fargo branch. "We are honored to work with all of our dealers and honor these six business partners for their work."

For more information on the Ferguson location nearest you please visit www.ferguson.com.

Moos appointed as California PHCC exec

SACRAMENTO, CALIF. — The Board of Directors of the Plumbing, Heating, and Cooling Contractors of California (CAPHCC) has appointed Harry Moos as their new Executive Vice President. Moos has served as the acting EVP since February, 2009.

He replaces Steve Lehtonen, who served the Association in various capacities for over 30 years. Lehtonen announced his resignation from CAPHCC to concentrate full-time on the continuing development of GreenPlumbers USA.

Moos is familiar with the plumbing industry, having worked with Noveon and Sterling Plumbing Group, besides being active in the Building Industry Association and code organizations. He can be reached at h.moos@phccgsa.org.

"We are embarking on a new era of high efficiency products and we

will need more trained technicians and more knowledgeable contractors," said President Jerry Hotarek of Lutz Plumbing in San Francisco. "Harry Moos will be an asset to PHCC because he has represented manufacturers and has been active with associations. He is a team player who will help our board and association succeed."

Quietside tankless units qualify for Energy Star

SANTA FE SPRING, CALIF. — Quietside Corporation recently announced its PVC vented-on-demand and dual-purpose tankless water heaters are accepted into Energy Star USA and Energy Star Canada. Energy Star's standard for qualification is an energy factor of .82. With energy factors over .92; the Quietside ODW and DPW have exceeded these specifications.

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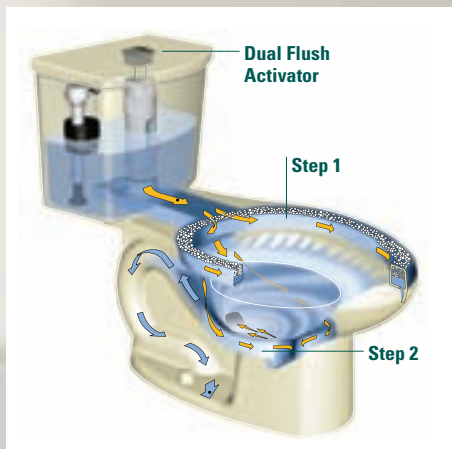
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* MaP testing performed by IAPMO R&T Lab per MaP protocol outlined by Veritec Consulting and Koeller Company.



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Step 2
Jetted siphonic bowl action quickly and completely evacuates bowl contents



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Circle 5 on Reader Reply Card

Plumbing Industry Council assists local families with plumbing repairs

St. LOUIS — Fifty-five families benefited from the time, talent and donations of local union plumbing contractors as part of the Annual Rebuilding Together St. Louis event held on Saturday, May 2nd, 2009. Plumb-

ing Industry Council (PIC) contractors, supplier members and members of Plumbers' and Pipefitters' Local #562 joined together in providing plumbing repairs and home renovations for elderly, low-income and dis-

abled residents in the St. Louis area.

Rebuilding Together St. Louis 2009 is a special event the Plumbing Industry Council and Plumbers' & Pipefitters' Local #562 are proud to take part in as way to give something back to

the community. Contractor members of the Plumbing Industry Council donated fifty plus service trucks loaded with tools. A wide array of plumbing products (sinks, faucets, toilets, etc.) was also donated by Plumbing Industry Council affiliate (supplier) members. Finally, over 250 members of Plumbers' and Pipefitters' Local #562 donated their time and talent to assist those in need.

"The generosity of the local union plumbing industry is an integral part of the success of Rebuilding Together St. Louis," said Lynne Rajani, Executive Director of Rebuilding Together St. Louis. "It is inspiring to know that we can count on them every year to step up and help."

The homes for Rebuilding Together St. Louis are selected after being referred to the program by churches, neighborhood and community service organizations. Individual homeowners can also request services of the program. Applications are prioritized based upon needs and qualifications before final selections are made.

"Rebuilding Together is so much more than just cosmetic work — some of the people we help are living in unhealthy and unsafe conditions," said Marty McClimens, journeyman member, Plumbers' and Pipefitters' Local #562, coordinator of the plumbing portion of Rebuilding Together. "Our members readily volunteer their time, and in some cases when the work is not completed on Rebuilding Together Day, they go back and make sure the project is finished."

G. Raymond Hefner, Executive Vice President of the Plumbing Industry Council echoed McClimens sentiments stating "this is just another way that licensed, union plumbing contractors give something back to the community by providing quality repairs and installations to those who are in some cases living in unsafe conditions. We are proud to participate in this worthwhile event and assist those St. Louisans who would otherwise not be able to afford quality plumbing repairs."

Rebuilding Together is made possible by the extensive volunteer work of many contractor members of the Plumbing Industry Council and Plumbers' and Pipefitters' Local #562. Initially, retired tradespersons go to the properties and evaluate the situation and identify the needs of the homes chosen for the event. A tradesperson is then assigned to each home being renovated as the captain. The captain is charged with buying the materials for the work, ensuring it is delivered on time and supervising the volunteers completing the repairs and renovations.

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Circle 6 on Reader Reply Card

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*Savings may vary based on model selected, hours of operation and geographical location. Example given based on 26-SEER system versus 13-SEER system.



TOOL TIPS with Hackman

Carbide grit edge blades and hole saws

Tool Tips feature trade tips from Lee “HACKMAN” Breton, marketing services manager for LENOX, team HACKMAN event manager and car cutter extraordinaire. Every month, HACKMAN shares insight from his 25+ years in the tool industry.

Fiberglass, ceramic wall tile, cultured marble, clay, brick, laminate, cement board and other abrasive materials can quickly wear down the teeth of standard bi-metal reciprocating saw blades. Instead of using



the wrong blade on these abrasive materials and quickly working through your supply of bi-metal blades, it might be time to try out a carbide grit edge blade and/or hole saw. You'll definitely find that you will get more work from your tools if you use the proper tool for the material.

To make their job easier and their hole saws last longer, fiberglass boat manufacturers use a carbide grit edge hole saws. Spa and hot tub manufactures and installers also use grit edge hole saws to get through the many abrasive materials they encounter on the job. Elec-

tricians find them handy for installing recess lighting fixtures. A carbide grit blade can smoothly get



through the tough materials that resist chip-forming.

Carbide grit edge reciprocating saw blades provide high performance in abrasive materials and are a

great option for cutting fiberglass, ceramic tile, cultured marble, clay pipe, brick, manmade stone and many other abrasive materials. Carbide grit edge reciprocating blades provide smooth, quick cutting without snagging or binding.

If you use a carbide grit edge reciprocating saw blade, jig saw blade or hole saw to cut abrasive materials, you will get a smooth cut every time and avoid the risk of premature blade failure.

If you have any questions or comments for HACKMAN, email him at hackman@lenoxtools.com or visit www.lenoxtools.com.

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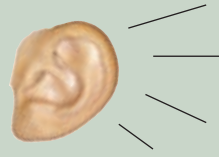
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Circle 8 on Reader Reply Card

Inside the trade

What we're hearing



WaterSense on pace to help builders save money

WASHINGTON — The average newly built, single family home in the U.S. can waste 10,000 gallons of water annually. EPA's WaterSense program soon will make it easier for builders to construct and differentiate homes that use water about 20% more efficiently, once its draft specification is final.

WaterSense has refined its draft labeling specification (initially released in May 2008) for single-family new homes based on comments received from the public and additional research. The revised specification addresses efficient plumbing fixtures, hot water delivery systems, appliances, landscape design and irrigation.

The revised specification will ensure that future WaterSense labeled

homes still use 20% less water than similar new homes, while reducing the burden and cost to the builders. The modifications to the previous draft specification have built in some additional flexibility; the changes include:

- Hot water delivery systems — New performance standards no longer require specific types of hot water delivery systems or insulation of hot water pipes.
- Landscaping — The revised landscaping criteria allow for a wider variety of landscaping options.
- Irrigation systems — Additional requirements for minimum distribution uniformity values and rain shut-off devices increase the efficiency of newly installed irrigation systems.
- Water budget tool — An im-

proved resource, the water budget tool, reflects growing seasons and plant water requirements.

• Inspection guidelines- An optional sampling protocol adds flexibility and streamlines the inspection process for production builders.

Once the specification is finalized, homes built and inspected to the specification will bear the WaterSense label. Homeowners who invest in WaterSense labeled homes will not only save water, but also money on utility bills.

WaterSense labeled new homes should be achievable by builders and affordable to consumers without

compromising water savings. The WaterSense new homes specification will also align with existing green building programs to ease the cost and obstacles to achieving other green labels.

The updated specification for single-family new homes will be available for public comment through July 7, 2009. EPA anticipates releasing the final Water-Efficient Single-Family New Home Specification in late 2009.

EPA welcomes input on the revisions made to the specification, and encourages all interested parties to view the most recent documents and provide comments. In addition, epa plans to hold at least one public meeting on the revisions in June 2009.

For details on the specification, upcoming public meetings, and other program information, visit www.epa.gov/watersense.

Heliodyne intros online solar hot water training

RICHMOND, CALIF. — Solar hot water manufacturer Heliodyne is now offering interactive, web-based solar installation courses for trade professionals interested in installing solar thermal systems.

The beginner's course is intended to educate professionals on solar

hot water theory along with proper installation techniques, and includes topics such as solar hot water fundamentals, sales and quoting, sizing, installation, and service and maintenance.

Interested attendees can register at www.heliodyne.com.

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New England	250.3	↑	New England	243.8	↑
Central Atlantic	248.9	↑	Central Atlantic	245.7	↑
Lower Atlantic	243.0	↑	Lower Atlantic	232.6	↑
Midwest	258.5	↑	Midwest	232.2	↑
Gulf Coast	238.7	↑	Gulf Coast	232.3	↑
Rocky Mountain	242.3	↑	Rocky Mountain	234.3	↑
West Coast	268.2	↑	West Coast	246.0	↑
California	275.6	↑	California	250.2	↑

METALS

Copper	\$2.30/lb.	↑	Aluminum	\$0.65/lb.	↑
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Prices valid as of 6/1/09. Fuel information courtesy of the U.S. Department of Energy <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>. Arrows indicate change from previous issue. * Copper prices according to NYMEX.com. ** Aluminum prices according to metalprices.com.



Circle 9 on Reader Reply Card

Leading water heater companies serve as partners in the Coalition for ENERGY STAR® Water Heaters

BOSTON — Four leading water heater manufacturers — Bradford White Water Heaters, Rheem Water Heating, Rinnai America Corporation, and A. O. Smith Water Heaters — have joined forces with the Consor-

tium for Energy Efficiency (CEE) to become part of the Coalition for ENERGY STAR® Water Heaters.

Beginning January 1, 2009, manufacturers were allowed to apply the ENERGY STAR mark for the first time to

their qualifying models. For a gas-fired water heater to be eligible for ENERGY STAR, it must have a minimum energy factor (EF) of 0.62 for storage water heaters, a minimum EF of 0.80 for condensing storage

water heaters, or a minimum EF of 0.82 for tankless water heaters. The ENERGY STAR criteria for gas-fired storage water heaters will increase to 0.67 on Sept. 1, 2010. Criteria have also been established for heat pump water heaters and solar water heating systems.

To increase awareness of ENERGY STAR water heaters and demand in the market by reaching out to all points on the distribution system, CEE formed the Coalition for ENERGY STAR Water Heaters. The group is comprised of industry associations, efficiency program administrators and water heater manufacturers who are among those offering a variety of ENERGY STAR models.

ENERGY STAR models will continue to advance energy efficiency and will help reduce energy consumption and save money through reduced utility bills. Water heating is typically the second largest home energy expenditure behind heating and cooling. Because it can account for as much as 15 to 17 percent of overall energy use in an average household, switching to an ENERGY STAR water heater can provide homeowners with significant savings.

According to the U.S. Department of Energy projections, Americans using ENERGY STAR qualified water heaters are expected to save approximately \$780 million in utility costs while avoiding 4.2 million tons of carbon dioxide emissions after the first five years of the ENERGY STAR program. For more information on the Coalition for ENERGY STAR Water Heaters, please visit www.eswaterheaters.com

W.E. Bowers named 2009 'Shooting STAR'

ROCKVILLE, MD. — The Mechanical Service Contractors of America (MSCA) announced that W.E. Bowers, Inc., a full service mechanical construction, service and plumbing company located in Beltsville, Md., was awarded the association's "Shooting STAR" Award. The award is given to MSCA STAR contractors who have successfully used the standards-based qualification to promote business success. MSCA STAR contractors have completed a qualification program in order to MSCA STAR Qualified.

"W.E. Bowers is an exemplary member of our industry," said MSCA Board of Managers chairman Jeff McCoy. "The Shooting STAR Award recognizes the company's excellent efforts toward demonstrating that every employee understands MSCA STAR criteria and works to utilize the company's STAR designation."

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Viega honors salespeople with 'Top Gun' Awards

WICHITA, KAN. — At Viega's National Sales Meeting each year, the time comes to recognize the sales people who have ventured beyond traditional boundaries to drive results. This year, nine sales individuals were recognized for their leadership and sales performance at a Viega Top Gun Awards dinner.

On Saturday, April 18, 2009, more than 200 Viega employees from across America, Canada and Mexico attended the awards dinner. Viega's vice president of sales, Dave Garlow, presented the awards. "I am so proud of the quality of sales people we have at Viega. Their commitment and hard work makes it difficult to only select nine recipients of a Top Gun award, but these nine Top Gun recipients have really went above and beyond my expectations," said Garlow.

2008 Top Gun recipients:

- Olivier Roberge, Canada
- Darrell Markley, Inside Sales
- Josh Dimacchia, Northeast Territory
- Wendy Toth, National Accounts



- Ted Atkinson, West Territory
- Jon Miller, Southeast Territory
- Bill Sloan, Industrial Accounts
- Dennis Harvey, Central Territory
- Tara Kemen, national accounts representative, received the high-

est award of the evening – the National Top Gun award. Kemen has worked at Viega for four years. "This may have been a year full of challenges, but more importantly, a year of accomplishments. Tara's

focus on customer service and motivation to drive sales never wavered during these times of economic challenges. I can't think of anyone more deserving of this honor," said Garlow.

Sears Commercial selects new distributor

STERLING, VA. — Sears Commercial and Hot Water Products, LLC, a division of JED Mechanical Contractors, Inc., have entered into a distributorship agreement for Kenmore® water heaters and water treatment products. This marks Sears Commercial's and Kenmore's entry into the wholesale marketplace.

Roughly half of all U.S. households has a Kenmore appliance. As such, this agreement responds to the requests of commercial customers in-

cluding plumbing contractors, who desire Kenmore products for their customers.

Through Hot Water Products' distribution network, water heaters and water treatment products will be available to commercial customers such as property managers and municipalities, plumbing contractors and building trades. "Hot Water Products was chosen by Sears Commercial as a Kenmore distributor based on the company's well-respected position in the Washington D.C. area. They are well known for having a wide customer base, high standards of business integrity and superior levels of customer service," said Betsy Owens, vice president of the Kenmore brand.

Robert J. DiPalma, JED Mechanical owner, said "We are honored to represent the Kenmore brand and look forward to supplying Kenmore products that so many of our customers have asked for. We are excited about this new venture and look forward to a long and successful relationship with the Sears Commercial and Kenmore teams."

JED Mechanical, which is headquartered in Sterling Virginia, has been in the plumbing and gas business since 1949, serving the Wash-

ington, DC metropolitan area.

DiPalma purchased JED Mechanical in 1986 and formed Hot Water Products, LLC specifically for this distribution enterprise. DiPalma is a

master plumber and gas fitter.

As the commercial marketing arm for Sears Holdings, Sears Commercial is a complete appliance and lifestyle product resource designed specifically to meet the needs of today's commercial customer.



Robert J. DiPalma, JED Mechanical owner. JED will distribute Kenmore® water heaters and water treatment products for the commercial trade.

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Circle 11 on Reader Reply Card

PHCC Chapter Excellence Awards announced

FALLS CHURCH, VA. — Plumbing-Heating-Cooling Contractors—National Association president Joe Schmitt presented the Chapter Excellence Awards during the Spring PHCC Leadership and Legislative Conference '09.

The awards recognize outstanding achievement in both management and service to PHCC members, and emphasize performance in five key areas — Programs/Education, Management, Membership Development, Communications, Advocacy and Consumer Awareness.

Top honors this year went to:

- APHCC of Texas for state associations with more than 200 members;
- Greater Indianapolis PHCC for local associations with 26 to 50

members; and

- St. Joe Valley PHCC (Indiana) for local associations with less than 25 members.

In addition, Indiana PHCC received special recognition for innovative programs and services. Also, Florida PHCC, Indiana PHCC and Pinellas PHCC earned PHCC's Distinguished Chapter designation for 2009.

The awards included both a permanent plaque for the chapter and a token of appreciation to the state or local executive director for overall achievement.

The 2009 panel of judges was comprised of chapter relations executives from various construction-related trade associations.

For more information, please visit PHCC online at www.phccweb.org.

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Top engineers visit American Standard



Engineers from top N.Y. engineering firms visited American Standard's New Product Center recently to get the full experience of what it takes to make high performance, high efficiency plumbing products from start to finish.

Representing five different New York-based plumbing engineering companies, 13 engineers were shown how testing is done to ensure that toilets flush and faucets flow to end user satisfaction.

The visitors were all given a free FloWise showerhead to test at home. Four has installed the showerheads with the first month, to unanimous enthusiasm was overwhelming. One of the engineers from Lilker said, "You hit a home run with this!" Another engineer from Syska & Henessy Group said he saw a different American Standard and that the brand is "back in the commercial business."

Charlotte Pipe featured on *This Old House*

CHARLOTTE, N.C. — When popular PBS home improvement series *This Old House* tackled its first-ever New York City project, the contractors chose Charlotte Pipe and Foundry's cast iron pipe and fittings for the plumbing.

Cast iron is a resilient product that has been in use, and in some cases still is in use, for over 100 years. It is manufactured from

100 percent post-consumer recycled scrap iron and steel, and at the end of the life of a building the piping can be recovered and recycled to make new cast iron products.

The *This Old House* episode featuring Charlotte Pipe and Foundry shows plumbing and heating expert Richard Trethewey, a long-time, loyal Charlotte Pipe customer, meeting electrical contractor Vinny Verderosa

for a look at how the new electrical service is set up for the three-family brownstone in Brooklyn. Trethewey also meets local plumbing and heating contractor Randy Gitli for a look at their progress on the cast iron waste piping, and the home's mechanical



room, which contains two complete heating systems, one for the ground floor apartment, and another for the top three floors. For more information about this episode (#2824), visit the *This Old House* website www.thisoldhouse.com/toh/tv/house-project/overview/0,,20238790,00.html and to find scheduled air dates check www.thisoldhouse.com/tvschedule or your local listings.

Missouri governor visits Watts Radiant, recognizes sustainability

SPRINGFIELD, MO. — The newly-elected Governor of Missouri, Jay Nixon, recently visited the 143,000 s.f. manufacturing and office facility of Watts Radiant in Springfield to support his program of promoting sustainable, Missouri-based manufacturing.

Nixon's tour was guided by John Kolson, Watts Radiant's new vice president and general manager, who captured the Governor's attention with compelling insights into parent company Watts Water Technology's deep involvement with innovative "green" building systems that include zero-waste reverse osmosis, lead-free stainless steel backflow prevention and salt-free anti-scale water treatment requiring no backwash.

Nixon, a Democratic governor, was elected on a platform that consisted of, among other things, job creation, support for higher education and development of renewable energy resources.

Accompanying the Governor was the new director of the Department of Natural Resources, Mark Templeton, who has close connections to the Obama administration, and is also a strong supporter of renewable manufacturing jobs.

The Governor learned about Watts Radiant's pursuit of zero waste, a program that has resulted in a 90% reduction in waste removal, due chiefly to improved designs, increased reuse of materials and internal and external recycling.

An example of this is the firm's manufacturing of bright orange pallet corners from PEX waste, generated when the extrusion line is started. All cardboard, office paper, shrink wrap, pallets, and metal are also reused or recycled.

The Governor showed great interest in Watts Radiant's new line of solar thermal pumping stations, and the new solar control for OEM



Newly-elected Missouri Governor Jay Nixon, tours Watts Radiant's Springfield manufacturing and office facility to support his program of promoting sustainable, Missouri-based manufacturing. John Kolson, Watts Radiant's new vice president and general manager, guided Nixon's tour.

suppliers that monitors and records the actual Btus produced by a solar thermal system.

The tour concluded in the training facility where a wide range of innovative radiant heat and cooling technologies were on display. Of

particular interest were Watts Radiant's HydroNex panels, which enable contractors to rapidly install pre-engineered and tested control panels that can combine solar, geothermal and biomass sources with radiant delivery systems.

Schmidt's Wholesale powers up with Buderus

MONTICELLO, N.Y. — Schmidt's Wholesale announced the completion of the first phase of the panel installation of a new, Buderus Solar Heating Systems Display outside its



Monticello headquarters. "We had it installed last month," said Chris Schmidt, vice president of Schmidt's Wholesale.

"The work was done at no charge by Combined Energy Services and Small's Plumbing & Heating, both Monticello-based companies," said Schmidt. "Now that the panel is installed, we're working on the second phase of making it a fully functional live solar water heating and

storage system."

Buderus Solar Heating Systems are comprised of key components that effectively convert the sun's free energy into practical heat for domestic hot water and space heating applications.

"We are very excited to say we're now in the solar business, and that

we will be selling the Buderus line for DHW Solar," said Schmidt. "Dan Woodruff, our HVAC manager, was key in the decision to offer Buderus' solar heating line. We're responding to the demand for more efficient and environmentally conscience heating alternatives for our customers."

The Soffi-Steel® System awarded UL Listing

JANESVILLE, WIS. — After months of efforts contributed by Grice Engineering, Inc. and Underwriters Laboratories, Inc., the Soffi-Steel® System has added further credentials. Effective early April, The Soffi-Steel System is now listed by

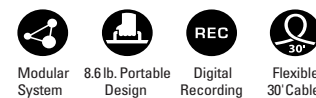


Underwriters Laboratory, Inc. as a decorative cover system for sprinkler piping. This is addition to the ten-year limited warranty provided with every purchase and the Factory Mutual Approval rating it already holds. The Soffi-Steel System is an adaptive, interior soffit that effectively conceals exposed fire sprinkler, hydronic and plumbing piping, along with HVAC and wiring. Light to heavy applications, material is customized to your project's requirements and delivered within 2-3 weeks of ordering nationwide. Visit the website www.soffisteel.com or call 800/800-3213 toll-free for free information, samples and pricing.

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2 major reps to carry Noritz tankless exclusively

FOUNTAIN VALLEY, CALIF. — The Roemer Agency and McKee-Nix and Associates, two of the leading manufacturer's reps for tankless water heaters in the United States, will now carry the Noritz line of tankless water heaters exclusively. Yoshi Asano, Senior Marketing Manager of Noritz America Corp., said the new alliances became effective on May 1, 2009.

G.T. Water Products names Cohen general manager

MOORPARK, CALIF. — G.T. Water Products, Inc. announced that Doug Cohen took the position of General Manager as of February 4, 2009. Cohen has more than 20 years experience in the plumbing wholesale and retail market segments. He most recently served as national sales manager with Waxman In-



Cohen

dustries; and prior to that was director of sales/marketing with Cobra/Speedway.

Oventrop appoints sales mgr.

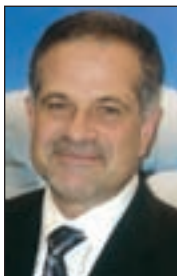
EAST GRANBY, CONN. — Oventrop has appointed Thomas J. Fullerton sales manager. He will work with Oventrop's manufacturers' representatives and coordinate the company's hydronic group. He will be based in Raymond, N.H.



Fullerton

John Guest USA names Artman sales, marketing president

FAIRFIELD, N.J. — John Guest USA has appointed Stan Artman as President of their Sales and Marketing Group located in Fairfield, New Jersey. Artman holds an MBA in



Artman

Marketing Management from City University of New York-Baruch College, and for the past 20 years has successfully led both domestic and international sales organizations in the building products industry.

Enerworks awards employees

DORCHESTER, ONT. — EnerWorks announced the winners of two new employee awards, one of which is named in honor of founder Mike Noble. The "Mike Noble Award" was presented to



Thompson Kless

David Thomson, Production Supervisor, in recognition of his outstanding contribution to EnerWorks over the past year. In addition, "The President's Club Award" was presented to Doug Kless, director of business development, Southeast United States, as the top performing sales representative. Kless's efforts represented approximately one-third of EnerWorks's total revenue for 2008.

Ewing appointed Watts Mid-Atlantic regional sales mgr.

NORTH ANDOVER, MASS. — Watts Water Technologies, Inc., has appointed Stephanie Ewing Mid-Atlantic regional sales manager for the Watts Wholesale Division. She has held various leadership, sales, and business development positions throughout her career. Most recently, she held the position of Managing Director-Residential Strategic Business Unit with Dormont Manufacturing Company (based in Pittsburgh, PA and acquired by Watts Water Technologies in 2005).



Ewing

NY Thermal names sales mgr.

SAINT JOHN, N.B. — NY Thermal Inc (NTI) has appointed Greg Keys regional sales manager. Keys, a graduate of the University of Southern Colorado, most recently was Sales Manager with a major boiler OEM

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THE WALL

Dan Holohan's Web site, HeatingHelp.com, features a message board called "The Wall" where hydronic heating professionals post questions and offer answers of all kinds regarding hydronic heating systems. Dan has kindly allowed Phc News to reprint some of the more interesting postings here each month. This section will surely whet your curiosity, so log on to the web site and click on "The Wall" for a treasure trove of useful and just plain interesting information.

Q: I, along with a number of other people, have been unable to get a Buderus GB boiler to fire on generator AC power. They work fine on grid power, and even on an inverter, but fail to fire when powered by a generator. This of course comes as a great surprise to people who install a backup generator with a goal of maintaining heat during a power outage. I've tried various forms of power conditioning, frequency control, grounding and isolation, etc. with no success. Is anyone out there who has been successful running a Buderus off a generator?
— *Twistedtree*

A: The frequency is the thing that screws up electronics. All the internal "clocks" in circuit boards look for that 60 cycle AC and when it's off by even 2-3% they are often programmed to shut down. You need to get the RPM on the generator dialed in to 3600 exactly and then hope it has a good enough governor to maintain it as loads vary. Often times a portable genset such as found in big-box stores isn't going to cut it. If the owner doesn't want to pop for a home standby unit like a Generac he will have to buy a UPS that is capable of handling the load of the boiler and wire that between the genset and the boiler control. I've run your problem before and that solution works.

Problem is the UPS may cost him more than he spent on the genset depending on the amp draw of his boiler system.
— *S-Ebels*

Q: How can u tell if u have a faulty T&P relief valve?
— *Ken Wagner*

A: If it leaks when both temp and pressure are below the valve specs. Do you have a pressure gauge?
— *Robert O'Brien*

A: Just change it. They cost peanuts. Ultra cheap insurance.
— *Bob Young*

A: The worst way to find out is when you see your water heater on the lawn and a big hole in your roof.
— *Tony*

Q: I have a house now with 2 steam boilers in it totally piped separately. We have to replace one of the boilers due to a leak and I am considering replacing both with 1 and running the two systems separately with a zone thermostat. They heat 2 different floors in the house (bedrooms/living area) We usually have the steam come on upstairs at night and the 1st floor living area during the day. Please give me some opinions on 1 system vs 2. The house is in Scranton and fairly large.
— *Yosef Guttman*

A: The problem would be sizing. Steam boilers are sized to the radiation and in a zoned system the radiation changes as zones open and close. You would have to size for the both zones meaning that most of the time it would be severely over sized.
— *JK*

A: I think you will be better off, and get better heat, with two boilers, nicely sized for their respective circuits. A single boiler is going to be horribly oversized for either circuit alone, if it's properly sized for the whole thing.
— *Jamie Hall*

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Circle 14 on Reader Reply Card





BY DAN HOLOHAN
contributing writer

How are things in Heatingland?

Some wacky things in the news have made me wonder about the current state of Heatingland. For instance, there's a brand-new, 108-bed, National Health Services hospital in Wales (Heatingland extends beyond the shores of the U.S.) that recently opened with a pristine hydronic-radiant-floor heating system. At first glance, this may seem like a wonderfully modern addition and a welcome omen for things to come, but hang on. The folks in charge at the hospital haven't been able to move any patients into the new place because the floor surface temperature is 104° F, and no one seems to know what to do about that. The patients have to remain in the delapidated, Victorian-era hospital over in the next village for the time being. They wait, coughing, hacking and suffering, as the brand-new radiant floor pumps out more heat than Shakira. Leighton Adrews, a Welsh Assembly member said, "This was meant to be one of the most environmentally friendly hospitals because of the nature of the heating system, but the under-floor heating has made the floor too hot to walk on."

After all these years of radiant design throughout Heatingland, this really shouldn't be happening. But maybe they got a great price.

And how about this? Last April, the folks in charge of the Harrisburg, Penn. schools decided to close them all for two days because it got hot outside. Who knew?

It was going to take them at least 48 hours to switch the two-pipe system from heating to cooling and that was just too long for the children of Heatingland to take. Can't have uncomfortable little ones, can we? Of course not.

I hark back to the days when I was a young citizen of Heatingland (and I know this is going to make me sound like an old fogey). When I was a pup, my school's air conditioning was an opened window, if I was lucky enough to be sitting near one, and the cover of my marble composition notebook, which I used for a fan. Heating was a steam radiator that pumped out enough heat to make me vomit (a good reason not to sit near the window).

Oh, and the cracked-opened window was our zone valve. The vicious teachers were our thermostats. We weren't supposed to be comfortable in school. That's what school was for — to make us miserable.

But it's no sweat in Harrisburg. If a kid is uncomfortable, he or she is liable to get on a cell phone and call mom at work. Mom will drive down in the Hummer to pick up the sweaty little brat, but not before consulting her attorney. Heatingland isn't what it once was.

But change isn't bad. Last year, the government of Scotland, working through the Warm Deal Programme, installed insulation in 6,018 private homes where the elderly and poor live. This was up by more than 1,000 over the previous year, and by 2015, they will have insulated all the homes. The government covers the cost of this. Heating is a right for the poor and elderly in Scotland.

As part of the Central Heating Programme, the government of Scotland also installed 14,430 new heating systems for the poor and the elderly, and this was a 61% increase over what they had installed during the previous year. How about that?

Meanwhile, last winter in Bay City, Michigan, a 92-year-old, WWII veteran by the name of Marvin Schur froze to death in his bedroom. The authorities found him on the floor. He was wearing four layers of clothes.

How did that happen? The local power company had installed a limiting device on his electric meter. This thing blows like a fuse if you use more than a certain amount of power. It's supposed to get your attention. You have to reset it by hand. They did this because Mr. Schur, who in

his 90s couldn't think clearly, owed the power company \$1,000. They let him know they were doing this not by knocking on his door and telling him, but by leaving a note taped to his door. The neighbors said Mr. Schur rarely went outside, so he didn't see the note.

When they came to get his body, they found the money clipped to the bill on his kitchen table. Got elderly parents living in Heatingland? Check on them.

Speaking of which, in Cumberland, Rhode Island, a bunch of high-school kids got together and decided to form the Cumberland Youth Commission. They do all sorts of things to raise money so they can help the poor and the elderly pay their oil bills. They do this by granting vouchers, which they then give to the oil company that serves the person in need. Most of these kids don't even have driver's licenses but they are the good citizens of Heatingland and they make me feel great about the future. Tough times bring out the best in some people.

And then there is this from Reuters, which appeared last February: "A study of more than 20,000 people in China has shown that exposure to burning solid fuel indoors for heat and cooking may cause the lung ailment known as chronic obstructive pulmonary disease (COPD). The finding, published in the European Respiratory Journal, is significant because COPD has long been associated with smoking, and very little research has been done to find out why non-smokers also suffer from the disease. COPD includes chronic bronchitis and emphysema."

So I guess you're not supposed to have an open, solid-fuel cooking fire going inside your house when the windows and doors are closed during the winter. I would think that the citizens of Heatingland should have figured that out, but some of our citizens are pretty wacky.

Margaret Write of Ogden, Utah is one of the wacky ones. Margaret is 55 years old. She is a smallish woman and she had a house with old, rather large heating ducts (can you see it coming?). It was a Sunday morning and Margaret decided to vacuum inside the ductwork. I think this is a job for a professional, but, hey, what do I know?

Margaret removed the register from this old, 24-inch wide, six-foot-deep, vertical duct and then reached way in with the vacuum. Way in.

They found her 30 hours later, with just her little feet wagging from the hole in the wall, but she's okay. And that duct sure was clean!

How about this stinker? Stephen Office lives in England and the courts just sentenced him to a good long stretch in the slammer. How come? Because Stephen found his mother Margaret, aged 74, lying unconscious at the bottom of her basement stairs (it's a tough year for the Margarets). Instead of helping her, Stephen turned off the radiator so that she might freeze to death.

Death by radiator. That's cold, Stephen.

Speaking of criminals, The Sofia Central Heating Company (that's in Bulgaria) just got caught stealing a bunch of cash from their customers. Sofia has a hot-water, district-heating system, a remnant of the Soviet days. The company was ripping off 20,000 leva (that's about \$14,000) every month from each block of apartments throughout Sofia. They were doing this by lowering (by about 9° F) the temperature of the hot water they supplied to the radiators. They figured no one would notice, but the Federation of Consumers busted them. The Federation looks out for the citizens of Heatingland, and for that, we can be grateful.

And perhaps you can use that story the next time you're trying to sell outdoor-temperature reset controls. Lower the water temperature. Save leva! ■

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hacking and suffering,
as the brand-new
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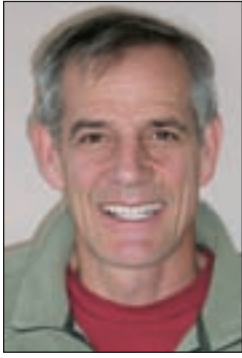
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Circle 15 on Reader Reply Card

Treat Your MVP... Hit the Ultimate Home Run with ECR Brand Products...



BY Bob "hot rod" Rohr
contributing writer

The busiest 'beaver'

world traveler, Clarence and his wife Barbara stopped by our Missouri shop while on their way to a Veterans of Foreign Wars (VFW) gathering. They visited and toured my shop, and he invited me to stop by Salisbury if ever I traveled that road. So I did. I was on a solar tour visiting dealers across the "First in Flight" state.

Over the years, we spoke of solar thermal and its history. Beaver Brothers was founded in 1919 by Clarence's dad and uncle. Driving up to the Beavers Brothers' shop, visitors are greeted by a large solar thermal array at the entry. This 14-flat panel collector array, installed when the shop was built 20 some years ago, still supplies most of the energy for the radiant slab heating system. Simple and efficient, this drainback system has the bare minimum of controls, piping and complexity. It has been virtually untouched since being installed. The age of the radiant system was apparent by the polybutylene tube coming out of the slab!

As with many radiant contractors, designers and suppliers, Clarence realized the perfect match of solar with the low operating temperatures radiant systems require. His location provides a good deal of sunshine to power the heating system.

Turns out, North Carolina is a fairly progressive state in

the thermal solar discipline. The North Carolina Solar Energy Association was formed in 1978, with Clarence as one of the founding members. Located in Raleigh, N.C., the association is known now as the North Carolina Sustainable Energy Association. The association is now managed under the North Carolina State University's College of Engineering at Raleigh, N.C.

Clarence's sons Mike and Trip, third-generation plumbing and HVAC contractors, handle most of the day-to-day operations now. Mike leans toward the hydronic and solar side, while Trip handles the HVAC side of things.

Clarence took me on a tour of Salisbury. Turns out Salisbury is chock full of hydronic and steam systems. As one of the first settlements in N.C., Salisbury is home to many historic mansions, one dating back to 1753!

As we drove through the oldest section of town, Clarence pointed out homes and buildings he had worked in with his dad, mid-1950s. Not surprisingly, we went by a number of homes with solar thermal systems installed by Beaver Brothers, dating as far back as 1970s.

My favorite part of the tour was of Clarence's own home. Built in 1986, it has a very well planned and executed solar thermal component. Drainback panels are flush mounted into a step down section of the roof framing. Very low profile. The piping exits the sides of the array into the side of the rafters. This provided not only a clean mounting for the panels, but a system with no exposed piping, or problems with leaking penetrations.

The mechanical room houses a custom built 300-gallon pressurized drainback tank. The tank, like the one in the shop, is tall and skinny to take advantage of stratification. Notice the connection ports, with heating supply taken from the very top, and warmest portion of the tanks. The collector fluid, plain tap water, is stored in the tank, as is the drain-



Beavers Brothers' shop sports a 14-flat-panel collector array installed 20 years ago that supplies most of the energy for radiant slab heat.

back "space." Pressurizing the drainback tank provides some NPSH for the high head pump and raises the boiling temperature of the fluid. Heat for DHW and radiant is taken from the tank via a plate heat exchanger. An upgrade several years ago included some more up-to-date variable speed mixing methods and upgraded to Tekmar control components.

A Hobart generator fueled by natural gas is located in the mechanical space. A tube and shell HX on the exhaust adds thermal energy to the solar storage tank whenever it is operating.

A mix of generously sized baseboard and radiant floor zones keeps the home comfortable with a solar fraction in excess of 65%. A small mod con boiler provides back up into a primary secondary loop piping layout.

I admire Clarence most for his love of hobbies and the time he makes available to partake in them! A large HO railroad layout greets you as you descend into the basement. RC model airplanes hang from the ceiling joist, some dating back to Clarence's days in Korea as part of the 32nd Engineering Group.

Next room above is headquarters for a ham radio. Clarence keeps in touch with many of his service buddies with ham and also embraces the newer version of communication, Skype. A nice blend of new and old, which is a lot like Clarence himself.

I love learning about cool solar and hydronics systems...especially the older ones...because I get to meet the cool people who created them. With Clarence, I spent time with classic systems and a classy guy! ■



A tall, narrow, custom-built, 300-gallon pressurized drainback tank takes advantage of stratification.

Under the definition of southern gentleman you should find the name Clarence Beaver. Clarence resides in the beautiful and historic area of North Carolina known as Salisbury. I've known Clarence for as many years as I have been a member of the Radiant Panel Association. I've known Beaver Brothers as a hydronic and radiant shop, as well as an HVAC installation and service operation. Over the years, we've chatted casually about wet heat and business in general. A



Clarence built his home in 1986, installing a well-thought-out solar thermal system.

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BY PAUL ROHRS
contributing writer

Doin' the math

Ask me what my least favorite class was in school and without hesitation I would answer math! (Yet, here I am 25 years later doing math.) At the onset of any hydronic job I always do the math. I start with the heat loss, boiler sizing with minimum and maximum radiant loads, what my labor and materials costs are and what to charge for the project. Math, pure and simple. It would be hard to complete a successful boiler change out, let alone a new install without some form of math being successfully completed. Okay, let me modify that last statement a bit: It would be tough to be profitable without doing the math.

So, what now Paul? I can hear the snickering, "That Rohrs guy is on his soapbox about math. Big whoop." I couldn't agree more; but what if we can add a couple of components that will save us time and money? Bear with me and let's do the math together.

I hate air in hydronic systems. My disdain for air-bound systems ranks right up there with, well, math. I know several articles from multiple authors have discussed air-removal and air-separators, but let's talk about components that we can incorporate that will give us an immediate payback. Before I get to the math, let me pose a scenario to you:

Have you ever been in an apartment complex with fin-tube baseboard heat-emitters? You finish the install, re-pipe, or change out and then need to bleed air from each apartment zone. You get your empty plastic Folgers coffee container and your radiator keys and head up to start the bleeding. With no apartment manager on-site, you knock on the first apartment door. Grandma Jones answers and welcomes you in and offers you cookies, tells you about her arthritic knees and tells you that her kids never call. Before she gets to the grandkid stories, you politely kneel down at the first fin-tube access cover to NOT find the radiator 90 with integral bleeder, or the radiator vent. On to the next room in search of the elusive bleeders. Right behind Grandma Jones' stash of Elvis Presley albums, you find the first bleeder and you are well on your way to finishing the first apartment. Twenty minutes — not bad — and three more apartments to go.

Apartment 2, I knock. "Who's there?" comes from behind the door.

"Orange," I say.

"Orange who?"

"Orange you going to let me in so I can bleed your baseboard emitters and get you heat!" After exchanging pleasantries with the tenants, I knock out units 2 and 3. One more apartment to go. No one home in unit 4. Now what? Call the apartment owner/manager again to get access or come back later when they are home. You get the picture, and after



Fig. 1: A few fittings can ultimately save time and money.

one hour of bleeding apartments 1-3, you are unable to finish your task and get on to the next service call.

I have spent an hour bleeding fin-tube and I am still not done. Why not consider changing the game plan? Let's add some ball valves, fittings and boiler drains so that we will never again have to enter a tenant's apartment and we can purge all air from the mechanical room. Figure 1 shows some essential fittings that can be easily incorporated into most hydronic heating systems.

NIBCO makes a C5C5FIP tee that will make it very easy to solder in and then screw in a boiler drain. If you are a ProPress shop, Viega and others make a Press5Press5FIP tee that installs even quicker. We are not going to look at cost savings of ProPress versus sweat fittings in this article

because that could be an article unto itself. So responsibly adding these fittings can enhance a system so that you can purge very easily. In a very basic zone valve system, with the zone valve on the supply and a ball valve on the return, you can purge each apartment from the mechanical room. Manually close the zone valve, close the ball valve on the return, and open the boiler drain to successfully purge each unit.



Figure 2 shows an example of purge the zone valve on the supply and a ball valve on the return, and open the boiler drain to successfully purge each unit.

Okay, let's look at the math for our 4 unit apartment complex. For a baseline, I am going to use \$100.00 an hour for labor. This was on a service call so we also bill for our trip charge:

Okay, let's look at the math for our 4 unit apartment complex. For a baseline, I am going to use \$100.00 an hour for labor. This was on a service call so we also bill for our trip charge:

4- 3/4" CXC ball valves @ \$7.00 each =	\$28.00
4- 3/4 X 3/4 X 1/2 (NIBCO #712 Tee CXCXFIP) @ \$6.50 =	\$26.00
4- 1/2" boiler drains @ \$4.90 =	\$19.60
Material Total =	\$73.60
Labor Total at 30 minutes (\$100.00 hr as rate) =	\$50.00
Total for Labor & Materials = (add for trip charge)	\$123.60

Now with three of the four units purged in one hour and still one more unit to go, this set up is starting to look more and more attractive. Now factor in the next service call at this location when a zone valve goes bad or we have an issue in an individual unit. This has now more than paid for itself in reduced labor costs in the eyes of the owner, and they will be thanking you.

We can look at this from another angle, as well. You will note that properly designed floor heat systems do not have bleeders on individual loops like radiators or fin-tube baseboard emitters. What to do? We incorporate our purge drains on the supply and return with isolation flanges on our zone pumps and ball valves on each return as illustrated in Figure 2. In addition to providing a positive form of air removal in individual zones, the added bonus is that we have isolated the boiler loop with its typical 30psi relief valve. This means that we can use line pressure to fill and purge our floor heat zones, which takes a lot less time. This was new construction so it was easy for me to include this in my proposal.

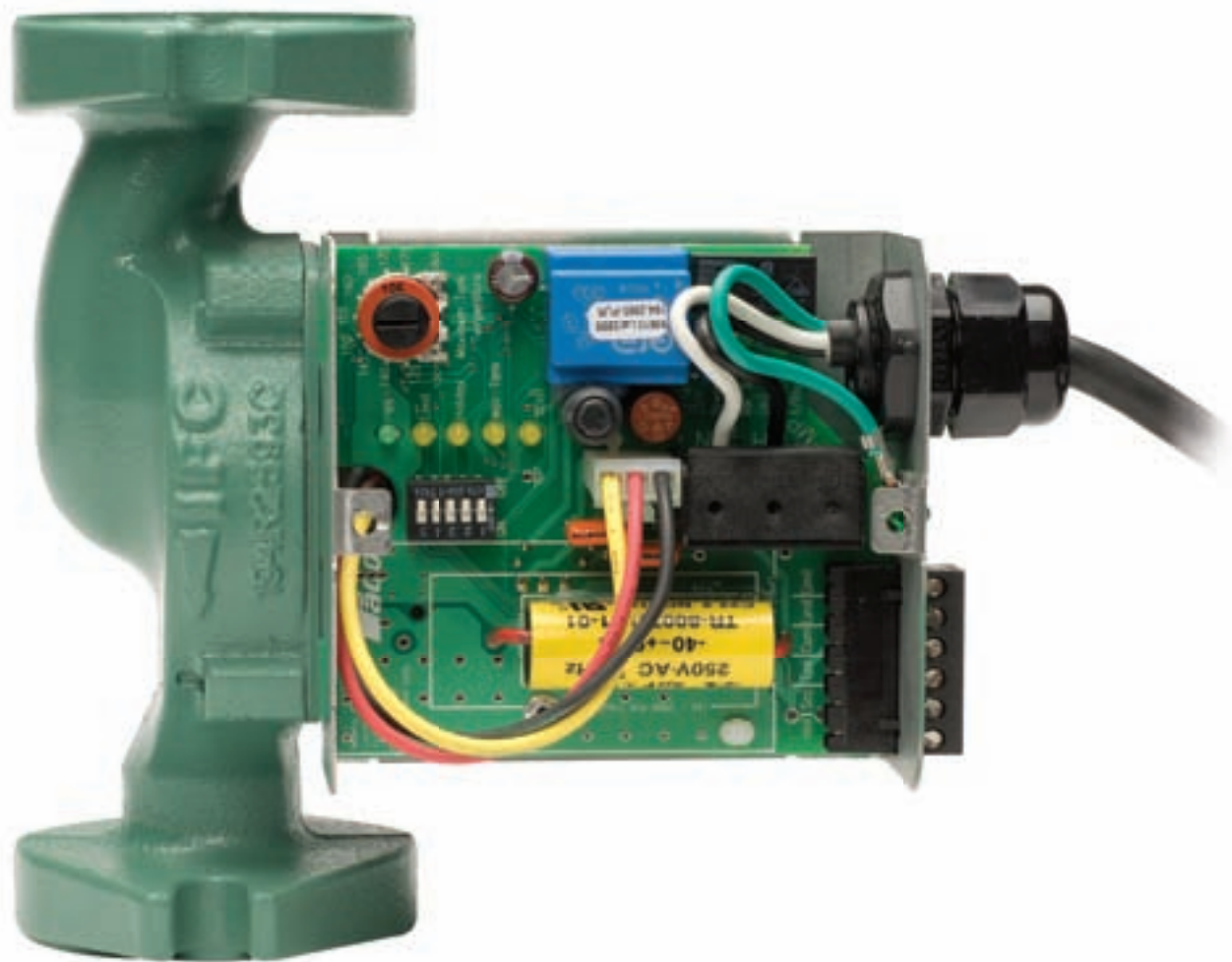
Before any hydronic system is commissioned on start-up, it is air-bound. It is hard to put a price tag on frustration, but the hours of trying to purge a system can easily be calculated as labor rates dictate. Do the math for your own company in adding a few extra purge fittings, factoring in your specific labor rate and trip charge, material costs and the amount of time you estimate for bleeding air from systems. I suspect you will find that the math will be justifiable and your end users will appreciate the extra attention to detail that has enhanced their systems. ■

Paul Rohrs welcomes your comments. Contact Paul at paul@biggerstaffradiantsolutions.com.

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BY ELLEN ROHR
contributing writer

Someone is going to turn the PHC industry on its ear. Someone is going to lay claim to the rooftop and make a whole lot of money doing it. Someone is going to leverage the human potential of this industry and grow a massive empire.

If you were not a plumber...

"Opportunity is as scarce as oxygen; men fairly breathe it and do not know it."

— Doc Sane

What if you weren't a Plumber, and you could look at this industry with fresh eyes? What if you weren't bound by what you know and the inertia of business-as-usual? Here's what you might see...

Mega-opportunity #1: The roof is the place to be

"Green" is the big buzzword. Folks are making themselves crazy trying to define the word "green." Within the industry, blood pressure is rising as the debate rages. Step aside. What is really important here? You and your customers can agree that it makes sense to have the sun heat some water for you, for a bath, the washing machine or the infloor heating system. And you can't know exactly what the payback is going to be because we just don't know how often the sun will shine. Intuitively and logically, solar heated water makes sense. So, give people what they want.

Most of the time, the solar panels are going to go on the roof. Now the roof is an interesting place. There is space up there to do lots of cool things. The HVAC team puts their equipment up there. Smart roofers are working with light, reflective, super durable materials. And, if you travel like I do, you'll notice that an urban landscape has a lot of roof space. Flying into any city unveils a sea of topside opportunity.

What if you laid claim to the roof? You could configure an energy and resources system that includes...

- Rain collection for a gray water system
- Thermal solar and PV solar collection
- Integrated Plumbing and HVAC systems...done the right way, without compromise
- Wind generated power
- Skylights, "solar tube" lights
- Gutters, parapets, privacy fencing
- Living space with a view...gardens...pergolas...sitting areas...workout equipment...artwork...sanctuary!

If you weren't a plumber (or an HVAC or roofing pro) you could see the opportunity on the roof.

Mega-opportunity #2: Consolidation

Over and over, an "outsider" has looked at a highly-fragmented industry and thought, "I could consolidate these mom and pop shops, create some 'economies of scale' and make a lot of money." Waste Management, Inc. was started by a couple of fellows on a homeowners' subdivision board who were trying to create a sound way to remove the trash from the subdivision each week. They discovered lots of waste haulers...and very few doing the job really well. So, they bought mom-and-pop shops and consolidated the industry. From my vantage point, they were well served...and so were hundreds of thousands of consumers. The folks who sold their companies had opportunities to move on to something else, and some realized some wealth for their precious efforts.

The PHC industry hosts over a hundred thousand companies and most of them are 1-3 truck operations. There is nothing wrong with being a small shop, if that is your desire and intention. However, if you are trying to GROW your company, I suggest you start buying companies. It is easier than you may imagine. And it is the best, most cost effective way to grow. Aim only for win-win-win deals...for your company, the seller's and the customers. Acquisition is so much easier than you may imagine. Check out www.growbiginarecession.com

Mega-opportunity #3: Virtual command center

In the book, "The World is Flat," author Thomas Friedman tells of McDonald's using drive-thru service representatives located in India taking orders at restaurants located in the United States. Whether or not you support the idea — maybe it's happening and you can't tell your order is not being taken by the angsty teen at the window — it's fascinating that it can be done. What an amazing time we live in.

Brian Scudamore of 1-800-Got-Junk has created a powerhouse franchise capitalizing on the world flattening effect of technology. Franchisees pay about 17% !! of total sales in exchange for a rockin' call center and dispatch system. All calls to 1.800.Got.Junk are answered in Canada by a fairly accent-neutral person who does a wonderful job lining up service. If there is not a franchise in your area, they offer you a shot at applying to become a franchisee. And the benefit to the franchisee: No need for a person in the office. That may be worth 17% or MORE to someone who wants their own shot at business success without the headache of managing an office team.

There will always be a selling advantage for the Plumbing pro who markets himself as a real life local professional. However, for someone else, someone from outside our industry, this business model could change everything.

Mega-Opportunity #4: A real career ladder

One of the benefits of consolidating companies is that you will meet some really cool people. You may befriend savvy managers, great service techs and rockstar installation crews. Not everyone wants to — or can — be a successful business owner. If you were to take advantage of Mega-Opportunities #1-#3, you could be in a position to really expand Mega-Opportunity #4.

Generally, there is nowhere to go, to grow, in the PHC world. The only choice for an ambitious go-getter is to start his own business when the shop he works for isn't going anywhere. Seven generations and only two trucks? This fellow may hang up his shingle with high hopes and then discover what a ball-and-chain your own business can be. (Sound familiar?) He can gain the business acumen he needs to be successful. Or he can partner up with an owner who intends to expand career and ownership opportunities for extraordinary team members. YOU could be the one expand in a hub-and-spoke way, offering profit sharing and, perhaps, ownership opportunities to high-producing team members. For inspiration and ideas for structuring an industry-revolutionizing career ladder check out Jack Stack's book, "A State in the Outcome." Or email me to discuss. The hub-and-spoke business model has my full attention. contact@barebonesbiz.com

Mega-opportunity #5: Pop culture celebrity

If you lay claim to one or more of these opportunities, you might want to spread the word. Hey, it's of service to know who is doing cool things with earth friendly, energy efficient living systems. It's interesting to know that there are businesses booming in economically challenging times. It's worth mentioning that you are developing careers for your team members, instead of indentured servitude. Why not expand your reach with online videos? You can use a Flip camera <http://www.theflip.com> and document the right way to install a disposer or put on shoe covers. You could use the videos as part of your training. You could film what really happens on a service call. (I advise you to get the customer's written permission be-

(Turn to Ellen Rohr, page 30.)



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BY RICHARD P. DiTOMA, L.M.P.
contributing writer

Bad habits make for bad results

Good habits make your tasks easier to do. They can also help you to be more profitable. I'm sure that earning the reward you deserve for your talents was the main reason you went into business. Unfortunately, bad habits will lead you down the road to high stress and frustration levels while keeping you away from your just reward.

Analyzing the cost you incur after you perform any service for your clientele is a great habit. By doing so, you can compare that which you thought it would cost you to do any job before commencing service with the actual cost you incurred to do that job. Once you start comparing your true cost and quoted selling price of every job, you will have the data needed to know if the quoted selling price for each job was right or wrong.

If your price was right, you can pat yourself on the back. But, if your price was wrong you should amend or change the methodology you used to arrive at the selling price of that job. Every time you use wrong numbers you will get wrong results. If you don't analyze each job's cost to you, you have a bad habit which will destine you to repeat your mistakes. And, you will miss the opportunity to recognize those jobs for which you properly calculated your selling price.

Obviously, the first step needed to quote proper profitable selling prices requires the correct identification and calculation of all your true costs, and, the use of a profit margin that will give you the opportunity to attain your goals.

Next, you must realize that as a human you have the propensity to fool yourself into thinking you can do any job quicker than the task really takes. That's a bad habit. You probably also tend to use methods which will increase your use of your time. That's a good habit. But, when the inclination to fool yourself meets with the tendency to speed up your work habits, the probability of error rears its ugly head.

Rules of thumb can present problems

Quoting prices based on the "by the fixture" method is an example of this occurring in the plumbing industry. Rule of thumb methods can result in inaccuracy as well as teach the next generation to not only perpetuate the erroneous rule of thumb method, but also, extend its potential to do harm with more flawed concepts.

I understand the "by the fixture" method can be helpful when correctly utilized as part of the total estimating process. But, being lazy and not realizing that the "by the fixture" method is only a part of the total estimating process is not only a bad habit, it is the wrong thing to do. It will cause you to omit labor, overhead and material costs which must be considered to correctly arrive at a proper profitable selling price.

The plumbing industry is not the only industry that adopts flawed methodology. A very close friend of mine is a second generation roofing contractor. The roofing industry utilizes a "by the square" method for estimating its costs and selling prices. In a conversation with him regarding his use of the "by the square" method, I asked him to allow me to prove why this method was as wrong as plumbers using the "by the fixture" method. He assured me that if I proved it, he would admit that the "by the square" method was wrong.

I asked him to quote to me a price to redo a 10,000 square foot hot tar roof. He took a calculator and immediately multiplied his selling price per square foot by 10,000 square feet. He then gave me his selling price for

the job.

I told him he had the job and asked him if he would like the address of the building. He said yes and I gave him the address of a skyscraper in New York City. The look on his face alone told me that I had made my point. And, to that he agreed.

There is a great deal of difference between doing that roofing job on a one story strip mall in the suburbs of New York City or doing it on the roof of a skyscraper high above the streets of a busy metropolis like New York.

For plumbers, there is a great deal of difference between doing the plumbing for a three-bath home when the bathrooms are closely clustered or in a sprawled out ranch with the bathrooms at different ends of the building.

Every job must be inspected for the circumstances surrounding that particular job before a price can be quoted correctly. The differences between jobs which are calculated "by the square" or "by the fixture" can be vast. The cost to the contractor who omits labor, overhead and material costs needed to completely do the job can be devastating.

Denial makes matters worse

But, that's not the only problem caused by contractors who utilize these rules of thumb. Those who implement these methods create a concept in which other contractors, who are equally or more unmindful of reality, come to believe that this is the proper way to estimate jobs. Thus, begins the slippery slope which leads contractors into the abyss of low and/or no profits, doing jobs for less than it costs to do them, and/or, working many more hours than estimated to finish the task.

Another bad habit is denial. It too causes contractors to repeat their errors over and over. A contractor seeking my counsel regarding his bathroom remodeling estimates was getting the jobs and moving money, but, his bottom line showed he was not making money on those jobs. I asked if he had done a cost analysis of each remodeling job after completion. He said no.

I analyzed the cost and found the same problem in each instance. The scope of the jobs in each case was identical. The problem did not revolve around the estimated material. The problem was the estimated time to complete the task. He kept estimating the labor time at 90 hours. Yet, each bathroom took 100 to 120 hours.

When I brought this to his attention, he said his technicians were working too slowly. Whose fault is that? He was supervising those technicians on those jobs. Although the jobs took longer than he estimated, he refused to change the time he spent to adjust to the reality.

An old adage says that the only way to eat an elephant is one bite at a time. So, I asked him to sit down at his desk with a pad and pencil and write down each individual step in a bathroom remodeling job from start to finish as a separate task. Then, I told him to put his estimated time to complete each task next to each step.

After completing this exercise, I told him to add up those individual times. He came up with 120 hours. I was sure my point was made. But, when I asked him if he would consider the 120 hours instead of his 90 hour estimate, he remarked, "No! It shouldn't take that long." Denial blinded him from seeing the facts as the reality. It also kept him from making money. As another adage states, "You can lead a horse to water, but, you can't make him drink."

Everyone is ignorant of something because no one
(Turn to *Purging bad habits*, page 30.)

The differences between jobs which are calculated "by the square" or "by the fixture" can be vast. The cost to the contractor who omits labor, overhead and material costs needed to completely do the job can be devastating.

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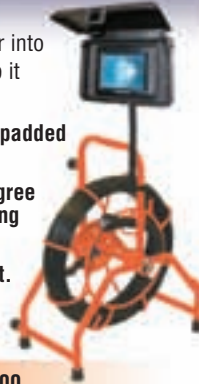
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BY BRISTOL STICKNEY
contributing writer

Bristol's six principles of good solar hydronic design

Solar overheat protection

Solar overheat can be problematic. Even a fully functional closed-loop glycol solar heating system can overheat. This is most likely to happen when there is plenty of sun, but the heat is not being used. This can happen for many reasons, but most commonly when the heat is not needed because all the heating loads are satisfied, or because of a pump failure (or power failure) in the heat storage or distribution system. Heat begins to build up in the solar collector loop when it is not carried away to a useful heating job. Flat plate collector temperatures exceed normal design limits and then eventually reach maximum stagnation conditions unless overheating can be controlled or at least slowed down. The conditions that can initiate overheating may happen only once a year or even less often, but when it does happen, the results can range from annoying inconvenience at best to major heating system failure at worst.

Minor overheating

A minor episode of overheating is often accompanied by the sound of steam hammering in the solar heat collector, the propylene glycol starts to cook and may begin to turn brown in color, a plume of steam may appear at any open float vent and the pressure relief valve may begin to drip or spurt glycol and the temperature and pressure (T&P) valve on the water storage tanks may begin to dribble. The volume of liquid glycol that is displaced by the steam in the collector will try to seek refuge in the glycol expansion tank. If the expansion tank is large enough and was installed with the proper air pressure, this may prevent much of the glycol from leaking out the pressure relief valve. After sunset when the steam condenses, and the air pressure forces the glycol back into the solar loop, the system may actually continue to run normally, so long as the electric power, pumps, valves and controls are not damaged and the glycol pressure has not dropped to zero.

This type of overheating is not uncommon behavior for older solar water heaters when their owners are on vacation. When nobody is using the solar hot water from day to day, there is no cold makeup water provided to cool the water storage tank, which can overheat after a few days of clear, sunny weather.

Major meltdown

It is important to design solar heating systems to prevent these small overheating events because it only takes a few minor events to add up to a major failure. Every time the glycol cooks at stagnation temperatures it becomes a little more acidic. If it is allowed to cook thoroughly, it can turn to the consistency of brown molasses, which can clog the collector tubing. Steam and extremely hot glycol will tend to ruin the rubber seals in the air vents, relief valves, pump gaskets and expansion tanks, resulting in the inevitable glycol leak. If cheap plastic foam pipe insulation is used anywhere near the overheated solar pipes, it will melt and flow off like candle wax. Nearby electrical wires and sensors often are ruined by the high temperatures, and gauges can be ruined as well. If the overheating episodes are allowed to continue (even intermittently), it is only a matter of time before the glycol leaks out, the circulator pumps seize and the catastrophic failure is complete.

The glycol fluid in this system is just as critical as the Freon in a refrigerator. Systems must be designed and installed ideally so that the fluid never leaks out and the flow is never blocked by steam or air. If we make our solar water heaters as reliable as a typical refrigerator, we are doing a

good job. Reliability, in my opinion, is the most important feature required for market acceptance and customer satisfaction, which is why it is listed as "Principle #1."

Past approaches

In the early days of active solar water heaters, the focus was on producing solar heat, not cooling issues. So, when cooling problems cropped up, the reactionary response was an afterthought rather than part of the original design:

- The solar pump shuts off when there is no need for heat and bigger and bigger expansion tanks are added to try to contain the stagnation pressure.
- When the solar water tank gets too hot, the T&P blowoff is used to cool it with make-up water. Cross your fingers and hope the T&P valve stops leaking later.
- Seasonal covers are fabricated to shade the collectors during the hot season. These must be manually installed and removed along with the screens and storm windows, and the annual swamp cooler or air conditioner covers.
- Manual valves or controls are added for night siphoning or heat dumping which must be activated by hand whenever overheating is expected.

While all of these approaches can be made to work, none of these are acceptable under the principles that guide us here, especially Principles 1, 3, & 4. None of these cooling strategies is ultimately Reliable enough, Compatible with customer expectations, or Elegant enough to be widely accepted in today's market.

Improving what you already have

To improve the overheat protection on an existing glycol (flat plate) solar water heater you might first consider using what you have to better effect. If you already have an instant hot water circulator pump, make sure it turns on before the hot water storage tank gets too hot. A thermal snap disk control or set-point thermostat can be used to do this automatically. This can dissipate excess heat from the tank remarkably well. This type of control can also be used to run the flat plate solar collector coolant pump at night automatically.

It is not a bad idea to install an oversized expansion tank to help prevent glycol loss if and when the collector experiences minor stagnation. The liquid acceptance volume in the tank should be at least equal to the fluid volume of the solar collectors themselves. Keep in mind that repeated stagnation will always result in premature system component failures.

Some newer solar DHW controllers (differential thermostats) have night cooling capability (vacation mode) so make sure yours is programmed to take advantage of this, or consider upgrading your older controller. Keep in mind that night coolant pumping is not effective with most evacuated tube collectors since they are not designed to work in reverse.

The solar coolant pump is the most critical component needed to provide overheat protection to the collectors, so consider making it non-interruptible. We do this by using PV (solar powered) solar circulators, but battery backup systems also could be used like those made for computers. If the solar pump continues to circulate even when the other heat storage and distribution pumps have temporarily stopped, you can gain a vital time delay before the system stagnates.

Our most common strategies

In the past decade I have designed and installed hundreds of solar water heaters and "combi" solar home heat-

Steam and extremely hot glycol will tend to ruin the rubber seals in the air vents, relief valves, pump gaskets and expansion tanks, resulting in the inevitable glycol leak.

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Overheating solar systems

(Continued from page 28.)

ing systems. Most of these were installed in recent years by my company, Cedar Mountain Solar Systems. All of these systems use closed loop propylene glycol piping systems employing photovoltaic (PV) coolant pumps and flat plate solar heat collectors. The combi systems typically include a solar domestic hot water tank and some radiant heated mass floor zones all heated with the same solar collectors (and the same backup hydronic boiler. See previous articles for diagrams). Many of the combi systems also include hydronic baseboard radiator zones, hot tub or heated pools, ice melt zones and other heating loads all connected to the same solar heat collectors.

1. Night collector cooling is used on nearly every glycol water heater, sometimes augmented with instant hot water circulator heat dissipation control. A small DC power supply is switched on to power the PV pump for night circulation. If you lose 20 degrees (e.g. dropping from 170°F down to 150°F) overnight, you are not likely to overheat the next sunny day. Temperature set points and differentials can be adjusted to fit the user's situation.

2. Collector tilt is considered on every combi solar home heating installation, sometimes augmented by a carefully designed roof overhang for summer shading of vertical wall mounts. Seventy-five degrees is a typical south-facing solar collector

tilt for a full combi home system (with no heated pool) in northern New Mexico. This steep tilt favors winter collection and rejects much of the mid-summer heat.

3. Heat banking controls are included on every combi solar heating system, as well as heat dissipation (a.k.a. dumping, shedding) controls. Heat banking controls allow extra solar heat to be stored in the mass floors, water tanks or heated pools only as long as a high-limit comfort temperature is not exceeded. Heat dissipation controls maintain the collectors at a safe high temperature even when the heat is not needed for any useful heating job. Garage floors or ice melt zones are often used for heat dissipation.

Other survival strategies

In addition to our three most com-

making up for his guessed at hourly technician labor/overhead cost. The whole process was not only a bad habit, it was absurd.

But, after I showed him how to identify and calculate his real hourly labor/overhead cost of one technician he still kept part of his bad habit. He multiplied his real hourly technician labor/overhead cost by the same doubled time to do the job.

I explained to him that since he now knew his true cost he could use the true estimated time to calculate his prices. This contractor is much smarter than the other guy because he doesn't blind himself to his reality. When he has a problem he gives me a call. His open minded demeanor allows him to easily solve his problems.

If you would like to set aside ignorance, fear, ego, and denial; develop some good habits; and, solve your business problems, give me a call at 845-639-5050. I would be glad to help get you on the right track. I have the solutions, theories and methods that can solve your contracting business problems. I wish you good health and good fortune. ■

also a bad habit. Another contractor, who is a client of my consulting business and who had already gone through the process of identifying and calculating his true costs called because he was losing some jobs to others because his bids were too high. After speaking with him and asking a few questions I found his problem.

Before becoming one of my clients and finding out his true hourly technician labor/overhead cost, he would arrive at his selling prices by using an hourly technician labor/overhead cost that was based on which way the wind was blowing rather than calculation. Then, he would multiply that hourly cost by twice as much time as he knew the job should take to do. I guess that was his way of

potential of this industry and grow a massive empire. Someone is going to become the face of all the amazing things that the PHC industry does to support the planet and the survivability of mankind on the planet.

If you weren't a plumber, it could be you. Think outside the pipe. ■

"If we are to achieve a victorious standard of living today we must look for the opportunity in every difficulty instead of being paralyzed at the thought of the difficulty in every opportunity."

— Walter E. Cole

Ready to embrace a Mega-Opportunity? Are you doing so already? Reach me at 417.753.1111 or contact@barebonesbiz.com.

Purging those bad habits

(Continued from page 26.)

knows everything. Therefore, ignorance is nothing of which to be ashamed. But, once this contractor saw his own individual estimated times he was no longer ignorant.

Fear of losing the jobs probably added to his flawed estimating technique. His inflexibility also caused him to buy jobs at any cost rather than sell jobs at a profit. Ego obviously kept him from having the courage to admit the error of his ways. In the end his bad habits will always give him the same bad results. He turned his ignorance into stupidity. And, that is something of which to be ashamed.

Logic & an open mind helps

Not looking at the total picture is

Ellen Rohr

(Continued from page 24.)

fore posting that on You Tube!) You could record team members discussing why your company is different and better than any other place they have worked. As you document your business you may capture a wonderfully funny or silly or moving slice of life. It may create a wild-fire, virtual pass-along sensation...starring you. You can leverage 15 minutes of fame into even more opportunity.

Someone is going to turn the PHC industry on its ear. Someone is going to lay claim to the rooftop and make a whole lot of money doing it. Someone is going to leverage the human

mon strategies described above, there are other approaches to overheat protection.

Most of these issues are not inherent to drain-back systems since drain-back collectors fill with liquid only when the solar pump is running. The use of a drain-back system is a valid solution for the installer who wishes to avoid most overheat protection problems altogether. (See previous articles for my reasons for choosing closed loop glycol systems exclusively.)

Ask your preferred solar equipment supplier what is new in cooling. Solar manufacturers have been thinking about this for a while now, and along with new controls, some have come up with other interesting products. For instance, Apricus, Butler Sun Solutions and Zomeworks each manufacture passive heat dissipation equipment that works by thermal expansion fluid diversion into a cooling fin system. They are each very different from one another. The Zomeworks product, called the "Tide Tank," has a long successful track record for use in home water heaters, and a new stainless steel version is now available.

Also, collector manufacturers are beginning to think about cooling. Some vacuum tube collectors (e.g. Thermomax) have a high limit temperature shut-off built into each tube and EnerWorks provides a flat plate collector model that includes a heat activated ventilation system built into the frame.

In general, when choosing critical components for the solar loop like float vents, pressure relief valves and expansion tanks, use only "solar" components rated for high temperature glycol and high pressure survival. Some common hydronic components may leak after the first exposure to solar stagnation.

Choose cooling methods that can be adjusted to keep all valves, seals, pumps and fluids below their maximum operating temperatures. Do not assume what those temperatures are. Look them up in the manufacturer's literature. Use only high temperature resistant brands of propylene glycol manufactured specifically for solar heating systems. Not all glycol is created equal. ■

Bristol Stickney, partner and technical director at Cedar Mountain Solar Systems in Santa Fe, N.M., has been in the solar heating industry in a variety of roles for more than 30 years. His new start-up, SolarLogic LLC, is developing the next generation of solar heating controls.

Richard P. DiToma is a business consultant and contractor with 36 years of experience in the PHC industry. He conducts seminars, evaluates business operations, publishes customized price guides for contractors and offers continuing support.

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Patent Pending

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Drawing off the success of last month's boiler report, *Phc News* offers its Tankless Report in a similar format. The report lends itself to an easy-to-read format, perfect for the busy contractor.

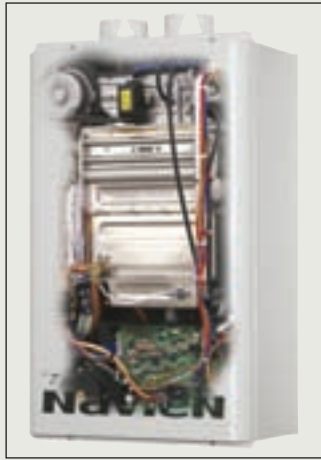
Phc News spoke to the major players in the tankless industry and received their perspective on what is new and topical, the economy and contractor misconceptions regarding tankless. From sizing to scaling to venting, some of the biggest contractor concerns were answered.

Also, with most tankless products, a Federal Tax Credit will be issued to consumer installing such units — with some installations garnering USGBC LEED points.

“Space heating and domestic water heating are the largest portions of all energy bills, and therefore energy usage. WaiWela products, for example, when installed and maintained properly, may reduce carbon emissions and energy usage,” said Neil Greenzweig, CEO, WaiWela brand.

Vendors appear in no particular order.

Navien America, Inc.
1371 Santa Fe Drive
Tustin, CA 92780
(800) 519-8794
www.navienamerica.com



Brief history: In 2006, Navien America, Inc. was established to open new markets in the United States and Canada for their Seoul, Korea parent company KyungDong Navien Co., Ltd. (KD Navien). Since 1978, KD Navien has been a global leader producing the most technologically advanced products to more than 30 countries worldwide. Navien America, Inc. provides a variety of HVAC products and services to North America.

What's new: Navien America, Inc. has recently expanded their North America offices, warehouse, training and tech center to a newly renovated 28,000-square-foot facility, located in Tustin. Besides providing the industry's only 98% efficient condensing gas tankless water heater, Navien America will be expanding its product offering later this year with the first dual purpose boiler. Navien's new condensing dual purpose boiler will be another industry first. The new NCN-30; NCN-35; NCN-40 & NCN-50 models will provide ultra-high efficient condensing dual heating for domestic hot water supply, as well as space and radiant floor heating.

Tax relief: Thirty percent of cost, up to \$1,500. All of Navien America's 98% efficient gas tankless water heater models meet and exceed all criteria for ENERGY STAR requirements of gas tankless water heaters.

Contractor misconception regarding tankless: Tankless water heaters provide instant hot water. **Dispelling the myth:** Navien America, Inc. produces the only tankless water heaters available with a built-in circulator pump for instant hot water delivery and a built-in buffer tank to eliminate “cold water sandwiching.”

The skinny: Navien America's 98% efficient condensing gas tankless water heaters are known in the industry as being the easiest tankless water heater to retrofit from a tank to tankless. Navien's tankless water heaters can be installed using inexpensive Schedule 40 PVC venting, with vertical or horizontal runs up to 100 feet. Navien America's 98% efficient condensing gas tankless water heaters will save more money and use less energy than any other tankless water heater available on the market.

Other unique features of Navien America's 98% efficient gas tankless water heaters include the ability to cascade up to 98 water heaters together with a simple communication quick-link cable. This system will allow for sequencing, full modulation and redundancy. Navien America is the only gas tankless water heater available that provides built-in leak detection as a standard and an optional built-in circulator pump with a buffer storage tank.

Quotables: “Contractors and wholesalers must try and maintain their margins in order to survive during these tough economic times. Navien has established its business model for this purpose. In order to try and help our contractors and wholesalers maintain margins, Navien America will only sell to contractors through the traditional plumbing and HVAC wholesale channel,” said Richard Ponce, owner of GPW Sales, Southern California and southern Nevada manufacturer's sales rep agency for Navien America, Inc.

Navien's "Condensing 98%" is the most environmentally friendly tankless water heater, eliminating more than 85% of the flue gas that standard tankless water heaters waste, reducing CO₂ emissions by at least 420 lbs. less per unit per year.

Takagi Industrial Co. USA, Inc.
5 Whatney, Irvine, CA 92618
(949) 770-7171
www.takagi.com



Brief history: Having made tankless water heaters for more than half a century in Japan, and more than a decade in the United States, Takagi has built a legacy of innovation and dependability with its tankless water heating technology. Takagi provides the U.S. water heating industry with highly energy efficient tankless water heaters that exceed anything else on the market today. Takagi carries a complete residential and commercial line, which consists of five residential models and three commercial units, six of which are ENERGY STAR rated. Takagi's units are also the only ones of its kind to receive the Southern Coast Air Quality management District (SCAQMD) approval for their low emissions of CO₂ and NOx. Takagi is dedicated to creating valuable products that will keep up with the market's constantly changing demands and continuously bring comfort to people's homes.

What's new: Takagi has had quite a few exciting things happening:

- Six of Takagi's tankless water heaters recently received ENERGY STAR rating: the T-H1, T-K3, T-K3-OS, T-K3-SP, T-K Jr. LP, and the T-K3-Pro.
- Takagi just launched the new T-K3-Pro, which is a light commercial, heavy residential version of its hottest selling model, the T-K3.
- Takagi just announced the launch of our new T-H2, a condensing high efficiency (over 93% efficiency) tankless water heater with PVC venting capability, which will be available in the Fall 2009.
- Takagi has a new president, Kimio Mochizuki, appointed in March, 2009.
- Five of Takagi's new commercial tankless water heaters recently received certification by the National Sanitation Foundation (NSF) that they are safe for use in the food industry. The Takagi models that received this certification are Takagi's new T-M50, the T-M50 ASME, the T-M32, the T-M32 ASME, and the T-K3-Pro.
- Takagi also has a new Dallas-Fort Worth office that opened up earlier this year, which brings Takagi to more than eight regional offices in major market areas around the country to better serve our customers.

Tax relief: With the new Energy Bill, homeowners will be able to receive 30% of the full purchase and installation price, or up to \$1,500 total Federal Tax credit, if they purchase and install highly efficient appliances like a whole-home tankless water heater in 2009 and 2010. Takagi has seven models that qualify for this credit: the TH1, TK3Pro, TK3, TK3SP, TK3OS, TK Jr. (LP Only), and TM199.

Contractor misconception regarding tankless: Tankless is no different from tank type water heaters. Some contractors do not pay close attention to how tankless products are built and how they work. Many of them still think it's the same and that a simple swap out is all that is needed. **Dispelling the myth:** Proper installation and sizing are two of the most crucial aspects for any tankless installation. When tankless is installed 'correctly' they do work beautifully and it should last a long time. Therefore, training and educating plumbers and contractors is vital to our industry. Takagi provides high level training at no cost to the installers..

The skinny: Takagi produces a complete line of commercial tankless water heaters for applications ranging from light commercial to heavy duty. The line consists of our new T-K3-Pro, T-M32, and T-M50. They feature thermal efficiencies ranging from 82% to 84%. The heat exchangers are made with HRS35 copper alloy, which is the most advanced copper alloy on the market. This heat-resistant copper alloy is eight times stronger and harder than the standard copper used in most tankless units, so it makes the unit much more resilient against erosions and leaks. This heavy duty copper is now a signature trademark for all of Takagi's commercial products. Our commercial units can also be linked to multiple units for even larger commercial applications. NSF is available on all commercial products and ASME models are available on the T-M50 and T-M32..

Quotables: “During hard economic times, it's important that Takagi's customers know they are there for them, and they care about their business. Takagi provides its contractors and wholesalers with the support and tools they need to be successful, to increase their sales and to better service their customers. Consumers are getting smarter about their purchasing decisions so its important that contractors and wholesalers working with them are well equipped to answer any questions,” said Koji Matsumura, general manager, Takagi.

A new light commercial version of the T-K3, called the T-K3-Pro, incorporates all the popular features of the revolutionary T-K3, but with commercial-grade quality materials so it can withstand light commercial conditions.

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Brief history: Founded in 1998, with headquarters in California, Quietside is the master distributor of Samsung Mini Splits, Samsung DVM system, Quietside Mini Splits and Quietside water heaters to HVACR wholesale distributors throughout North America. Quietside focuses on energy efficient products that are accepted worldwide, yet are niche markets in North America. Currently, Quietside operates from three locations in the U.S.:

Santa Fe Springs Calif.; Carlisle Pa.; and a new facility in Fort Worth, Texas. **What's new:** Quietside recently launched the ODW tankless water heaters and the DPW dual purpose water heaters; later this year will see increased capacity DPW units being released. Quietside also is opening a new facility in Fort Worth, Texas, which also will include a classroom and local tech support capability.

Tax relief: Quietside ODW and DPW units recently were included in the new Energy Star program, and with our Energy Factors on the ODW being >0.9, units easily qualify for many local rebates in addition to the Federal Government Tax credit program.

Contractor misconception regarding tankless: Bigger is better. **Dispelling the myth:** A correctly-sized unit will offer better performance and efficiency than a unit that is oversized.

The skinny: The Quietside ODW is able to vent in Schedule 40 PVC due to its exclusive use of the S Line heat exchangers. A condensing heat exchanger is mounted above the standard heat exchanger and further extracts heat from the flue gas of the unit, increasing its efficiency levels and reducing the flue gas temperature below 130F, allowing the use of the Schedule PVC vent pipe.

Quotables: "Quietside staff and our independent sales reps work hard to ensure the wholesaler/contractor have all the tools necessary to both sell and support the products we carry. Our training program has been increased this year to provide additional opportunities. We also have increased the value provided with our unit by including a set of isolation valves free of charge with every ODW and DPW purchased," said John Miles, vice president of sales and engineering, Quietside.



Tankless units are approximately 50% less expensive to operate compared to conventional tank-types. The Quietside unit is one of the most efficient tankless products available in North America, with Energy Factors greater than 0.9.

Stiebel Eltron, Inc.

17 West St.
West Hatfield, MA 01088
(413) 247-3380
(800) 582-8423
www.stiebel-eltron-usa.com

Brief history: Stiebel Eltron was founded in 1924 by Dr. Theodore Stiebel in Berlin. Initially, the company concentrated on the manufacture of electric water heaters for the German market. In the decades that followed, Stiebel Eltron branched out into additional products and pioneered the development of tankless electric water heaters starting in the 1950s. Today, Stiebel Eltron is the largest manufacturer of tankless electric water heaters in the world. The sales and service operation for the North American market is located in West Hatfield, Mass. There, Stiebel Eltron maintains a sales, service, distribution and spare parts facility. It has been located in North America since 1980.

What's new: The next generation Temptra® and new Temptra® Plus tankless electric water heaters include: water output temp to 140°, upgraded heavy-duty electronics, single flow sensor, easy access hinged cover, larger inlet filter screen. Temptra® Plus models have a digital display for °F or °C readout and Advanced Flow Control™ to automatically adjust the flow rate in order to maintain set-point temperature. Temptra® series is an ideal backup for solar thermal systems.

Contractor misconception regarding tankless: Tankless water heaters cannot provide enough hot water. **Dispelling the myth:** Correct sizing of the tankless heater is key. Use the TEMPRA sizing chart that is on our website and in the TEMPRA literature. Once you know which model you need, check with your electrician to make sure the size of the electric service is sufficient. In some cases, the size of the electrical service has to be increased to accommodate the additional load that is created by the electric tankless unit.

Quotables: "If contractors research the proper sizing for the application at hand, they should be perfectly content with a tankless water heater. As tankless water heaters are heating cold water as it passes through the unit from a city or well source, there is logically a finite gpm flow rate in order to heat the water to your target temperature — usually 110F. Tankless units are dependent on the amount of water flow (gpm), and the amount of temperature rise required (difference between incoming water temp and outgoing temp from unit). The larger the temperature rise required, the fewer number of gpm's can be heated to the set-point temperature," said Bill Riley, sales and marketing specialist, Stiebel Eltron.



New Temptra® Plus includes: output to 140°; upgraded heavy-duty electronics; single flow sensor; easy access hinged cover; and a larger inlet filter screen.

Bosch Thermotechnology Corp.

50 Wentworth Ave.
Londonderry, NH 03053
(800) 354-4838
www.BoschPro.com
www.BoschTaxCredit.com

Brief history: Bosch has been selling and manufacturing tankless water heaters for over 75 years and has 30 years experience in the U.S. Bosch is a leader in manufacturing of heat exchangers and is driving the innovation and efficiency in condensing technology for tankless water heaters.

What's new: The new Bosch GWH 920ES series is a 225,000 Btu condensing tankless water heater with high output capabilities (9.2gpm). The new 920 offers high efficiency (94% Thermal Efficiency) and is fully certified by ASME. Bosch's condensing technology has allowed Bosch to be the only manufacturer to satisfy the 2012 SCAQMD Emissions (California's South Coast Air Quality Management District) for NOx levels below 20ppm, which is the benchmark in efficiency for the U.S. Because of the unique up-fire negative pressure combustion system and superior heat exchanger design, Bosch's condensing technology is able to capture 10% more latent heat in the exhaust. The secondary heat exchanger is constructed of aluminum and copper which is completely unique to Bosch and represents the forefront of integrating heat transfer and durability.

Also, new for the 2009 is the ENERGY STAR program for tankless water heaters. Bosch has a total of six units that are ENERGY STAR qualified. The importance of the ENERGY STAR program for the entire tankless market is that it legitimizes the technology as being an established and highly efficient option for water heating. Many Bosch tankless models are designed to work in conjunction with solar or geothermal systems as a back up solution that would also provide energy efficient hot water when the main system is not capable of meeting demand.



The GWH 920 comes in residential (ES) and commercial (ESC) configurations. The 920 ESC Commercial unit can reach output temperatures of 180°F. Both the GWH 920ES and 920ESC are vented with 3" or 4" PVC pipe with zero clearance to combustibles. Venting options include: Single pipe exhaust, direct vent dual pipe or concentric and outdoor.



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Noritz America Corp.
 11160 Grace Ave.
 Fountain Valley, CA 92708
 (866) 766-7489
 www.Noritz.com

Brief history: Noritz started in 1951 in Kobe, Japan and since then continue to design and manufacture high quality tankless water heaters, and other gas appliances. Noritz America established its first U.S. office in 2002 at Lake Forest, Calif., and has expanded to five showroom locations across the U.S. — Southern California, Chicago, Atlanta, Dallas, New York. Each location features a state-of-the-art facility, plumber training centers, showroom area showcasing possible installation locations and working units. Southern California headquarters location has a R&D facility where new products are designed and tested. Noritz has only been in the United States for a short period of time and it already has gained a significant market share in the tankless water heater segment.

What's new: Noritz America is innovating and constantly offering new and improved tankless technology to the home owners. Currently, Noritz has the largest tankless lineup in the industry and offers the most selection of tankless with ENERGY STAR certification. Noritz recently introduced a more affordable version of the popular 94% condensing tankless,

which can be vented with schedule 40 pvc. Noritz continues to offer training classes to local contractors, installers and plumbers in all five showroom locations. There are different levels of training class, from basic installation to troubleshooting. Recently, a new Hands-On Workshop has been created to further educate installers who already completed level 1 training; however, all installers are welcome to join to learn more about Noritz products. The Hands-On work shop covers various spectrum, from marketing 101 to venting options to component breakdowns and proper heater installation. At this type of training, installers are able to see more, in detail, and actually install a heater. Noritz also is involved in charitable contributions helping people in need — *Extreme Make Over 2008 - 2009* season, Brad Pitt's Make It Right Foundation in Louisiana and Leonardo DiCaprio's Greenburg in Kansas.

Tax relief: Currently, there is a great Federal Tax Credit for anyone installing tankless water heaters. It is part of President Obama's restructuring plan by offering tax credit to energy efficient products. Any Noritz's tankless that is under the 200,000 Btu range qualify for this program. The tax credit is 30% of the total invoice cost (unit(s) + installation) from the installer up to \$1,500. It is a dramatic increase from the previous \$300 tax credit in 2007.

Contractor misconception regarding tankless: All

tankless manufacturers are the same. Contractors assume all technology and functionality are exactly the same, therefore having the same performance. **Dispelling the myth:** Noritz America dispels the difference by establishing the five state-of-the-art showrooms and training facilities to educate contractors, plumbers, and homeowners — the difference between Noritz and the rest. Secondly, Noritz continues to develop better quality parts, such as using K-copper heat exchangers in residential models, re-designed dual flame burner for better thermal efficiency to eliminate cold water sandwich and provide a stable and comfortable temperature.



Currently, there are many chain restaurants, hotels and resorts that are currently using Noritz Tankless for their hot water needs. Noritz commercial units can be linked side-by-side up to 24 units to generate 316 gallons per minute. Noritz commercial tankless meets all demands.

All gas powered tankless has similar technology; however, it is the quality of parts and craftsmanship that sets Noritz apart from the rest. Noritz America is here to be the dominant player and leader in the tankless market.

The skinny: Noritz has a full line of commercial tankless that are ASME rated. Noritz is the first tankless manufacturer that offers a true tankless line-up with the largest unit in the industry at 13.2 gpm. Besides the ASME certification required to be a true commercial rating, all Noritz commercial units are in stainless steel casing to differentiate the look and quality of Noritz commercial tankless.

Quotables: "Noritz has always valued the importance of installers; that has been the motto since the founding fathers of Noritz, and it has carried over to the States, selling only through professional distributors — not through the retail channels or Internet. Because of the relationship between Noritz and installers, Noritz has created the Pro-Card program. The program is design to track installations, and, at the same time, offer rebate checks to installers based on a points system. For every heater installed — depending on the model — points will accumulate, and a rebate check will be mailed back to the installer.

"By offering specialty training and a rebate program, as well as referrals from visitors to the five showrooms, Noritz generates loyalty among its customers," said Jerry Pan, marketing coordinator, Noritz.

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Efficient Technology Sales, LLC
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 (303) 339-4900
 (800) 605-6542
 www.waiwela.com

Brief history: ETS began selling tankless water heaters in 1977 in Camden, Maine, at the time of the oil embargo. ETS pioneered the use and development of tankless water heaters in the United States. Currently, ETS is involved with WaiWela gas tankless and its integration with solar thermal.

What's new: ETS will begin construction of a mezzanine within its current 25,000-sq.-ft. warehouse this month to provide classrooms and a training facility for solar installers and technicians. This addition will feature roof access where it will install solar thermal equipment for evaluation and to monitor the performance of solar equipment in the Mile High City.

ETS recently established a relationship with SunEarth, Inc. of Fontana, Calif. to provide solar thermal panels throughout the state of Colorado.

Tankless supplier is Paloma Industries of Nagoya, Japan. Paloma will introduce a high efficiency condensing tankless gas water heater by year end. It will carry the WaiWela brand name. New to the WaiWela family of products is the 6.6 Series gas tankless water heaters.

Tax relief: All of the 5.3 Series, 6.6 Series and 7.4 Series tankless water heaters are ENERGY STAR rated and qualify for a federal tax credit of up to \$1,500.

Contractor misconception regarding tankless: Contractors believe tankless water heaters do not — or cannot — provide enough hot water for large projects. **Dispelling the myth:** ETS works with contractors to design hot water systems that are

capable of producing endless hot water for almost any application. WaiWela tankless water heaters are unique in that they can combine up to 20 units with one controller to do most residential and commercial apps. Units are serviceable, so in the event one unit needs service, the other units in the systems are still operational, producing enough hot water.

The skinny: All market participants offer competitive pricing so it is important to distinguish ourselves through the exceptional services we provide. The relationship ETS creates with our customers is one of exceptional, individualized service. ETS understands that “time is money” to the contractor/wholesaler so we offer personalized engineering and technical support before and after a sale, in addition to free lifetime technical support.

Quotables: “Recognizing the need to actively reduce carbon emissions, ETS is stepping forward as a leader in green building products. Specifically, the WaiWela Mini Tanks to conserve water by reducing the wasteful run while waiting for hot water at a sink. Space heating and domestic water heating are the largest portions of all energy bills, and therefore energy usage. WaiWela products, when installed and maintained properly, may reduce carbon emissions and energy usage,” said Neil Greenzweig, CEO WaiWela brand.



At 11,000 to 180,000 BTU/hour range, the 6.6 Series carries a 12-year warranty on the heat exchanger, five years on parts and one year on labor. A digital remote is included with each unit.

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Rheem Water Heating
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Montgomery, AL 36117-4305
(866) 720-2076
www.rheem.com

Brief history: Rheem is a privately held manufacturing company that began operation in 1927 as a supplier of packaging to the petroleum industry. In the 1930s, Rheem began manufacturing water heaters, and in 1947 began manufacturing warm air furnaces. In 1959, the company acquired Ruud Manufacturing Company, a pioneer in the industry with a well-regarded product line and a distribution network throughout North America. In subsequent years, Rheem entered the heating and air conditioning market and expanded in the late 1960s and 1970s with the rapid growth of the central air conditioning industry. In 1985, the company acquired Raypak, a leading producer of copper tube boilers used for swimming pool heating and commercial hot water supply and hydronic heating.

Today, Rheem is a leading North American producer of (tankless) water heaters, central warm air furnaces and air conditioners, and swimming pool heaters and commercial boilers.

What's new: Rheem currently offers 30 natural gas atmospheric products that meet the Phase I EnergyStar criteria for tank water heaters providing the plumbing industry an economical green replacement product for their customers, including our new 40-gallon short high EF (.62) atmospheric tank water heater. Rheem also introduced a new solar water heating product line that includes both active and passive systems. Rheem continues to offer some of the best training and support in the industry: local field training, new solar training program, or Commercial Institute and Tankless Business College.

Tax relief: There are two Federal Tax Credits.

Contractor misconception regarding tankless: Untrained in tankless technology, contractors often try to size the system based on the Btu input of the system they are replacing or GPH recovery, and neither of these play a part in the sizing or applications of tankless water heating. In addition, not understanding how tankless systems are promoted between manufacturers' can often lead to undersized systems. Many contractors also try to install it like a tank, and therefore they and their customers miss the many advantages tankless technology can offer them. Probably the biggest misconception is simply that it is not a tank and it cannot be installed like a tank. **Dispelling the myth:** Tankless require different venting, and, more than likely, they will require a higher peak fuel demand. Also, don't wait until you get a call for a failed tank. Be proactive and get into the consumers' home or business before a tank fails.

Quotables: "As an industry, we are changing; and as an industry we must recognize these changes and we must embrace them to ensure the success of our individual companies. Tankless water heaters are an excellent example.

"We must always remember that even in a down market, 70-75% of all water heaters sold are in the replacement market, and that is a great opportunity for tankless water heaters and the contractors who pursue it," said Walter B. "Butch" Aikens, tankless resource manager, Rheem.



RTG-66 - 180,000 Btu tankless product now offers a field conversion kit to allow it meet the demands of smaller commercial applications where larger commercial tankless products may not be the answer.

Eemax Tankless Water Heaters
353 Christian Street
Oxford, CT 06478
(800) 543-6163
www.eemax.com



Brief history: Eemax is a U.S. manufacturer of the most comprehensive line of "green friendly" electric tankless and mini-tank water heaters available; designed for industrial, commercial and residential applications. Eemax was founded in 1987, and for the past 20 years has achieved industry leadership by providing the broadest line of reliable and well-engineered tankless water heaters. Eemax pioneering sophisticated thermostatic controls, easy installation, advanced safety features and large capacities. Eemax water heaters range from .5 gpm for code compliant hand washing, to the super powerful 25 gpm commercial units.

A full line of electric tankless water heaters for whole house feature the most powerful unit on the market (38kW). Rated 99% efficient, ruggedly constructed to last, save energy, water, space and money.

What's new: In September 2008, Eemax Inc. announced that the Riverside Company has become a new equity partner. Riverside is a private equity firm investing in premier companies, focusing on high growth, industry-leading manufacturers. Riverside currently has over two billion dollars in capital under management. Riverside's resources will enable Eemax to further build its dominance in the electric tankless market, focusing on product innovation, customer support and business expansion.

For summer 2009, Eemax will launch a new full line of premium residential electric tankless water heaters. Features include: stainless steel cover; adjustable temperature control with temperature display; and diagnostic interface. Models will range from 1.5 gpm to 6 gpm for apartments, condos, pool houses, cabins, vacation homes and whole house heaters with up to three-shower capacity.

Tax relief: Electric tankless water heaters do count toward additional LEED points that can be added to qualify for tax incentives for efficient building design.

Contractor misconception regarding tankless: Electric tankless water heaters are for low volume point-of-use hand washing only. **Dispelling the myth:** If sized correctly, electric tankless water heaters can provide a variety of high-flow applications, including whole-house and commercial up to 25 gpm. Make sure you get the right heater for the application. Tankless water heaters create hot water rather than storing hot water as storage tanks do. This is an advantage for tankless because they only use power when hot water is needed, and there is no storage to run out. Make sure that you take incoming water temperature into account, as well as the flow rate (how many fixtures, kitchen faucet, lavatory, washers and shower). Once you determine the capacity, you will need to select the correct kW or powered heater you need to meet the demand.

The skinny: The Eemax distribution channel is strictly through the plumbing wholesaler, and Eemax builds on the wholesaler relationship by supporting wholesale "buying groups" and participation in corporate vendor programs. Eemax also supports the ASA and regularly appears in industry shows. Eemax also supports the PHCC for contractors and has initiated a "Certified Eemax Contractor" program providing training and support.

Quotables: "Eemax builds the most comprehensive line of commercial electric tankless water heaters available with flow rates up to 25 gpm. Tankless eliminates the need to reticulate water from a centralized hot water source and provides hot water solutions for all building types," said Aaron Siegel, vice president sales and marketing, Eemax.

Grand Hall USA, Inc.
3838 W. Miller Rd.
Garland, TX 75041
(866) 946-1096
www.eternalwaterheater.com

Brief history: Headquartered in Taipei, Taiwan since 1976, and with the U.S. office operating out of Dallas since 1985, Grand Hall serves as the leading manufacturer of innovative gas appliances and components for more than 30 years. Grand Hall's top award-winning product — the Eternal Hybrid Water Heater — introduced in 2006, has received industry accolades.

What's new: Eternal is experiencing rapid growth, even in a down economy, and has planned to expand its staff accordingly. In addition to growth, Eternal has a contractor rebate program in place, service contractor program established, and lastly, it has built a new contractor website.

Tax relief: Select Eternal models qualify for up to \$1,500 or 30% of total installed cost Federal Tax Credit.

Contractor misconception regarding tankless: In Eternal Hybrid's case, the biggest misconception is cost. **Dispelling the myth:** When you consider the high flow capacity, PVC venting for easy installation, and one of the industry's strongest warranty, Eternal is no more expensive than having the use multiple water heaters together to achieve the same result as just one Eternal.

Quotables: "We back the units with a 20-year, no-leak warranty on residential jobs and 10-year, no-leak warranty on commercial jobs. The heat exchanger is made of stainless steel with patented self-cleaning to ensure long lasting, efficient service," said Paul Home, director of product and marketing, Grand Hall USA, Inc.



Hybrid units are designed to be heavy residential or light commercial, especially with recirculation since the units have built-in small storage.

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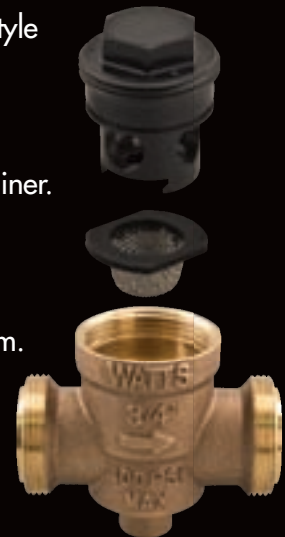
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Iowa plumber promotes tankless to energy conscious consumers

WEST DES MOINES, IOWA — There's no denying it: the world is going green, and in a hurry. Home service providers in virtually every sector — from manufacturers to builders to contractors to designers — are re-

sponding to consumers' rapidly growing demand for products and services that conserve on resources and utility expenses. In an uncertain economy beset by rising energy prices, consumers want eco-friendly decisions to be cost-efficient.

Offering a reliably high performance and an energy-efficient design, gas-fired tankless water heaters provide exactly the kind of environmental and economic benefits homeowners are looking for. Smart plumbers are getting in on

for three months over the winter," said Vorhees, explaining she didn't want a tank-type water heater that would heat water even when there was no demand for it. "So when we picked out our plumbing fixtures at Cook Plumbing, we also asked for a tankless heater."

The majority of Cook Plumbing's tankless installation work has been in new home construction, but more recently retrofit installations — replacing existing tank-type heaters — account for about 20 percent of the business. Michael Riesberg, one of Cook's retrofit customers, first heard about tankless technology from radio advertising.

"I did a fairly extensive search of all the brands I could find on the 'net, along with looking at the local retailers," he said. "I found that



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John Buttz of Cook Plumbing believes it's more important than ever to give consumers plumbing solutions that save both kinds of green — energy and money.

that action and promoting tankless technology on their service calls and in their shops and showrooms.

Immediate, positive impact: Cook Plumbing Corporation of West Des Moines, Iowa, has been an exclusive dealer for Rheem Water Heating only since autumn 2007, but the move is already paying off. Plumbing contractor John Buttz, who oversees Cook's residential installations, said offering tankless water heaters has made a quick and positive impact on the business.

"Within the last 12 months, we've installed 40 Rheem tankless units in homes," Buttz said, adding that most of his customers opt in specifically for the cost-savings. He believes it's becoming more important than ever for the plumbing industry to deliver solutions that reflect customers' needs and values, and that includes saving both kinds of green — energy and money.

Show me the money: "It was the money savings," confirms homeowner Kris Vorhees, a Cook customer who chose a tankless water heater when her new home was built this year. "We thought it was a good idea, since we're gone

the Rheem unit would give me the needed gallons per minute, even in the coldest time of the year here in Iowa."

Cost savings were the driving factor, Riesberg said. "Like most people, I had a budget. John came to my home and did a great job of explaining the differences among several of the competing units and why his brand was the

It's becoming more important than ever for the plumbing industry to deliver solutions that reflect customers' needs and values, and that includes saving both kinds of green — energy and money.

best water heater for the money. The unit has delivered all the hot water my wife and kids and a dog could soak up — and without a hiccup."

Cost-conscious: Buttz is proactive in educating both new and retrofit customers about tankless benefits, and he is careful to explain the need for proper sizing. He also spells out the difference in upfront costs, noting that Cook

Plumbing's new tankless installations typically run between \$1,400-\$1,600, while retrofits range from \$1,600 to \$2,200.

"I try to see if there is a good place to put the new tankless to make it less expensive for the homeowner and easier for us with the piping," he said of retrofit installations. "I warn the customer if we must boost the gas pressure, run longer gas or water lines, or run extra metal flue piping, because all of that adds to the cost."

Buttz also uses his own positive experience with tankless technology to make a strong statement to his customers. "I tell them I have one at my own house and how well it works."

Buttz converted from a tank water heater to a tankless unit for the same reasons as his customers: to minimize energy usage and operating costs. "We kept running out of hot water," he said, noting that he initially added a 40-gallon tank water heater and tied in a recirculation unit, but found that it simply wasn't

cost-effective. So he installed a Rheem tankless unit with a flow rate of 7.4 gallons per minute (at a 45°F

rise in water temperature from the cold-water inlet of the water heater to its hot-water outlet). Today, he

couldn't be happier.

"A little over a year ago, we hosted seven bikers who were participating in a race across the state. We have three tub-showers, and they used them all. We didn't have any issues with hot water. That was a good test!"

Feel-good purchase: As a true believer in tankless technology, Buttz actively promotes the benefits to his customers. "They are willing to pay a little bit more up front if they feel they are doing something good for the environment," he said.

Tankless offers plenty to feel good about. More energy efficient than conventional tank heaters, tankless water heaters provide a continuous supply of hot water, but only on demand. As a result, no energy is burned to continuously heat stored water during idle periods.

"We're really happy with Rheem tankless," Buttz said, adding that Cook Plumbing has yet to receive a single callback or complaint. ■



Isolation valves such as these are used by Cook Plumbing to service tankless units, such as for flushing the system of lime deposits. The frequency of this procedure depends on the hardness of the water in a locale.

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Most activity slow for near future

The following report was compiled by 2009 Piping & Equipment, Inc. This report is published as a service to the PVF Industry indicating the direction of prices, lead times and market conditions reported by various domestic and import manufacturers as they believe the direction the market is heading each quarter.

STAINLESS STEEL PIPE

Pricing ↓ Stainless Steel Pipe manufacturers forecast a decrease of 3% - 5% during the second quarter due to raw material costs, oversupply, lack of demand, competition, the financial crisis, and gas/oil prices.

Lead Times: Lead times are forecast for 4 - 8 weeks for material not shipping from factory stock. Fill rates are 40% - 50%. Inventories are building at the mill level, as service centers are moving as much higher priced metal out as possible. Replacement orders are few and far between and generally very small. Exotic alloys are especially hard hit because of their higher price point.

Comments: One manufacturer comments that there should be dumping suits because pipe mills throughout the world are selling highly specialized material into the U.S. market at clearly predatory pricing. There is clearly an oversupply situation with most alloying elements despite significant cutbacks in production. The demand drop-off has been greater than the cutbacks. Please refer to the dumping suits listed under Carbon Steel Pipe section.

STAINLESS STEEL WELD FITTINGS, 150 & HI-PRESSURE FITTINGS

Pricing → ↓ One stainless steel fitting manufacturer indicates pricing to remain stable thru the 2nd quarter of 2009, while another indicates a 3% - 5% decrease due to oversupply, foreign pressure, and supply. The industry is still experiencing soft demand and inventory is substantial.

Lead Times: Domestic fittings are shipping in 2 - 4 weeks with fill rates from inventory of 80% - 90%. Large od and specialty items are forecast for 4 to 6 weeks or more.

Comments: Manufacturers comment that with the over capacity in the global markets, dumping is still occurring quite regularly in the U.S. 2009 will remain a cautious year for most as inventory balancing has af-

ected prices and lead to a more conservative and cautious customer. Activity is moderate to slow at this time. There is a large supply of material in stock at the distributor and master-distributor level in both import and domestic fittings. Projects are being downsized or cancelled altogether. Limited orders, but excessive quoting is taking place in today's market. Therefore, from a manufacturing standpoint, it will be the last quarter of 2009 before they expect any relief. They plan to pursue the specials and quick turnaround business until the situation improves.

Virtually all of the key global producers of nickel and the other key inputs of stainless steel have radically reduced production. Some producers continue to cut supplies to get more in line with demand levels and/or until the international prices become more favorable.

STAINLESS STEEL FLANGES

Pricing ↓ Stainless steel flange manufacturers forecast price decreases of approximately 5% on stainless and up to 10% down on special alloys — 7% due to raw material costs, supply, demand, foreign pressure, competition, and the ongoing financial crisis.

Lead Times: Lead times are forecast for 3 - 4 weeks with fill rates of 30% to 50% shipping from inventory. High nickel or specialty items are forecast for 6 - 12 week deliveries.

Comments: One flange manufacturer indicates that sales are down

portunity for end users, but they may be waiting for the bottom before placing the orders. The most volatile issues in the market remains the depressed economy, diminished pricing and high cost inventories.

CARBON STEEL PIPE — SEAMLESS, ERW AND CONTINUOUS WELD

Pricing: Seamless → Welded ↓ Carbon Steel seamless pipe manufacturers are forecasting no change

CARBON STEEL WELD FITTINGS AND FLANGES

Pricing: Fittings and Flanges → ↓ Some manufacturers indicate a fore-

Preliminary Phase	Investigation	Start Date	End Date
Oil Country Tubular Goods from China	701-TA-460-461	4/08/2009	6/02/2009
Final Phase	Investigation		
Circular Welded Carbon Steel Line Pipe from China and Korea	701-TA-455 and 731-TA-1149-1150	9/09/2008	1/07/2009 CVD 5/06/2009 AD
Steel Threaded Rod from China	731-TA-1145	10/08/2008	4/06/2009
Welded Stainless Steel Pressure Pipe from China	701-TA-454 and 731-TA-1144	7/10/2008	3/02/2009

for this quarter. However, the bottom has dropped out on Carbon Steel erw pipe with the price falling from \$2,000 per ton to \$1,350 per ton. Some mills have been closed and bookings are slim.

Lead Times: Fill rates for carbon steel is running about 40% - 50% with lead times up in the air due to lack of orders, but it is reasonable to see 8 - 12 weeks. We may be experiencing some holes in inventory because few orders have been placed with mills during the first quarter of 2009.

Comments: The steel industry is experiencing trouble in the overseas markets, as well as the domestic market. Raw steel production at U.S. mills has fallen to less than half of the 2008 weekly output. Ed Scott reported in the March *ASA Materials Market Digest* that the production for the first eight weeks of 2009 was 7.6 million tons, less than half of the comparable 2008 period. And this year's operating rate has yet to top 45% of capacity while last year American mills routinely functioned at 90% or better. U. S. Steel has padlocked the Lone Star Steel plant in Texas. Tmk Ipsco announced significant cutbacks in its two octg plants in western Pennsylvania.

The Department of Commerce International Trade Commission unanimously found that Chinese pipe imports were injuring domestic producers of comparable products involving circular welded steel pipe,

small diameter line pipe, light-walled rectangular tubing and most recently, stainless steel pipe. The manufacturers in the Oil Country Tubular filing listed below include United States Steel of Pittsburgh, Pa.; Evraz Rocky Mountain Steel of Pueblo, Colo.; Tmk Ipsco of Downers Grove, Ill.; V&M Steel and V&M TCO of Houston, Texas; and Wheatland Tube of Beachwood, Ohio. Investigations or Dumping Suits in progress are noted in the chart below.

The steel industry is experiencing trouble in the overseas markets, as well as the domestic market. Raw steel production at U.S. mills has fallen to less than half of the 2008 weekly output.

considerably when compared to the average 2008 monthly sale as a result of diminished pricing and less demand. Consequently, quoting activity is good, but fewer quotes are turning into orders. It is a buying op-

cast decrease in pricing of approximately 5% - 10% due to raw material costs and foreign competition, while others indicate pricing to remain stable thru the second quarter.

Lead Times: Lead times for commodity material is forecast for 1 - 2 weeks with fill rates of 90% - 95%. Lead times for non-stock specials are forecast for delivery in 2 - 3 weeks.

Comments: The Asian foreign manufacturers, in conjunction with their master distributors and private labeling networks have continued to be an issue in the market place. The massive inventories complied with softening sales volumes have created a deflation scenario with the import fittings. By using price as a leading marketing tool to sustain inventory turns, deflation has occurred. These practices have prompted the reduction in domestic pricing.

Demand is softening somewhat yet raw material costs for seamless pipe and raw forgings have remained stable enough to hold current market levels. The market for commodity carbon steel fittings and forged steel flanges continues to remain at a steady pace while showing softness in various market places. This is due to a backlog of projects that have been initiated and that are funded through the third quarter of 2009. Liquidity in the financial markets will be playing a significant role as to (Turn to PVF Industry, page 44.)

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PVF Industry

(Continued from page 42.)

how the commercial construction market will respond in the fourth quarter of 2009 and into 2010. Government stimulus spending will be a factor as we move through the year and see how well the mechanical contractors will be impacted. The big issue is the ability to obtain adequate financing for projects that are planned and need to have the funds to proceed.

FORGED STEEL FITTINGS

Pricing ↓ Forged steel fitting manufacturers forecast reductions of 5% - 10% for the second quarter 2009 due to foreign pressure.

Lead Times: Fill rates remain in the area of 90% - 95%. Deliveries are

The ball valve manufacturers are dealing with the declines in day-to-day business in all market areas. The declining oil prices, reduction in the petro-chemical and chemical business, and a slump in the downstream industries are all factors.

forecast for 1 - 2 weeks for commodity forged steel material not in stock. Specials are forecast for 2 - 3 weeks.

Comments: The continued de-

cline in oil patch has restricted volume of forged steel fittings. The rig count has dropped from nearly 2,000 to a current level of 1,043. The depressed natural gas and oil prices, as a result of lower demand, are forecast to continue through the third quarter of this year. The abrupt decline in the oil patch caught distributors with high inventories. The distributor continues to work these inventories down, reducing replen-

2008	Jan	Feb	Mar	Apr	May	Jun
	208.0	214.7	214.9	215.0	215.6	218.3
2009	Jul	Aug	Sep	Oct	Nov	Dec
	222.0	219.9	219.1	219.3	223.4 P	223.1 P
2009	Jan	Feb				
	220.8 P	220.9 P				

ishment orders. The high inventories combined with depressed business levels have resulted in a 20 - 25% decrease. Manufacturers report reduced production in an effort to decrease inventories and parallel manufacturing with the current level of demand. It's a continuous battle to adjust inventories and production rates to new demand levels.

STAINLESS STEEL GATES, GLOBES, CHECK VALVES

Pricing ↘ Manufacturers of stainless steel gate, globe and check valves forecast for a 1% - 2% decrease due to raw material costs.

Lead Times: Deliveries for commodity items continues to be forecast for 6 - 12 weeks with fill rates remaining at 60% - 70%. Non-stock

specials are forecast for 12 - 20 weeks or more.

Comments: Producer Price Index Industry Data and released by the Bureau of Labor Statistics released data for 2008 through February 2009 for industrial valve manufacturing for gates, globes and checks (P is preliminary data subject to revision 4 months after original publication.) Series ID:PCU3329113329111/ Industrial Valve Manufacturing:

BRONZE AND IRON GATES, GLOBES AND CHECK VALVES

Pricing ➡ Bronze and Iron valve manufacturers forecast their pricing to remain stable thru the second quarter of 2009.

Lead Times: Orders continue to ship in 4 - 6 weeks for bronze and iron valves. Fill rates remain constant for bronze valves at 60% - 70%, and iron valves at 80% - 90%. Non-stock specials are forecast for 12 - 20 weeks for iron valves and 8 - 16 weeks for bronze valves.

Comments: The scrap raw material costs on iron valves is stable in the market.

CAST STEEL GATES, GLOBE AND CHECK VALVES

Pricing ↘ ➡ Manufacturers of cast steel valves are forecasting a downward trend of 1% - 2% in pricing due to raw material costs and others indicate no change in pricing.

Lead Times: Fill rates are 60% -

market for the 1st quarter of 2009.

Lead Times: Forged steel valves are shipping in 4 - 8 weeks. Fill rates are running 60% - 70%. Deliveries of special non-stock forged valves are forecast for 12 - 20 weeks or more.

QUARTER TURN VALVES — BALL AND WAFER

Pricing ➡ The steel quarter turn valve market is not forecast to change during the second quarter '09. Manufacturers comment that they are doing their best to protect the pricing situation in view of business being down in spite of the overwhelming factors presented to them such as the financial crisis, gas and oil prices, labor rate, capacity, and competition.

Lead Times: Fill rates remain at 20% - 30% for commodity material with lead times of 2 - 3 weeks. Non-stock specials are forecast for 12 - 16 weeks or more depending on the material.

Comments: The ball valve manufacturers are dealing with the declines in day-to-day business in all market areas. The declining oil prices, reduction in the petro-chemical and chemical business, and a slump in the downstream industries are all factors concerning valve manufacturers. The Producer Price Index Industry Data and released by the Bureau of Labor Statistics has released the following data for 2008 thru February 2009 for Industrial Valve Manufacturing of ball valves (all metals, pressures, and types): (P indicates preliminary data subject to revision four months after original publication.) Series ID: PCU3329113329111C / Industrial Valve Manufacturing:

2008	Jan	Feb	Mar	Apr	May	Jun
	174.9	176.6	175.7	175.9	180.3	180.7
2009	Jul	Aug	Sep	Oct	Nov	Dec
	182.7	183.2	183.9	183.9	184.3 P	184.3 P
2009	Jan	Feb				
	184.3 P	183.4 P				

70% for commodity cast steel valves with deliveries forecast for 4 - 8 weeks on commodity cast steel with specialty cast steel valves still running 16 - 20 weeks or more.

Comments: See the Producers Price Index noted above for Stainless gate, globe and check valves. Those numbers include the cast steel commodity as well.

FORGED STEEL GATES, GLOBES AND CHECK VALVES

Pricing ➡ Pricing is forecast to remain stable in the forged steel valves

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This report is published as a service to the PVF Industry indicating the direction of prices, lead times, and market conditions reported by various domestic and import manufacturers as they believe the direction the market is heading each quarter.



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Circle 31 on Reader Reply Card

PHCP Industry piping systems expand into broader markets

Despite the ravages of the ongoing deep recession, which has hit the construction sector especially hard, the role of expanded piping systems continues to strengthen its importance as part of the mechanical contractor's contribution to the current and future development of construction as a whole.

With accelerating technological developments imparting such diverse end-use factors as power generation, residential-commercial-industrial heating and cooling, transmission of oil and natural gas, as well as the refining and blending of gasoline, the position of the mechanical contractor will increase in relative importance to future projects and their subsequent maintenance and enhancement.

Despite the impact of the ongoing credit crunch on much of current commercial development, the greater complexity of piping systems can only be resolved by the expertise of the mechanically savvy industry contractor, as these systems become imperative as part of the overall project development.

The expertise of the plumbing-heating-cooling-piping contractor is increasingly being recognized by an expanded segment of the PHCP sector.

Whereas the industry's mechanical contractor's role was rarely recognized in the wider scope of industrial applications, especially energy, in the past, an increasing number of such well-trained experts, emanating from the commercial end of our business, are finding their capabilities sought after by a broadening gamut of industrial project developments.

Part of this is due to the decrease of current opportunities in available PHCP projects. But the reputation of our industry's mechanical expertise, and its practitioners is being increasingly appreciated by such major turnkey constructors as Fluor, Bechtel, Brown and Root, and Halliburton.

The respect reflected in the work already performed in the industrial arena by mechanical contractors has opened doors, previously not available due to the limited understanding of the sophistication and engineering knowhow that these highly trained mechanical experts bring to the table.

As the economy in general evolves out of its current morass, the expansion of renewable energy programs, in addition to a comeback in conventional fossil fuels, will put an even

greater demand on the capability of our industry's mechanical experts.

The current malaise from which the PHCP sector is suffering may turn out to be the springboard for a more permanent position of the mechanical contractor in the growing expansion of energy usage and its increasing piping system complexity.

It's a prime example of where a temporary setback has created opportunities for the superb mechanical knowhow of our industry and expanded it into arenas where their previous involvements had been few and far between.

Global electricity usage decline first since 1945

Global electricity usage, which has been playing catch-up early in this decade, will fall by 3.5% in 2009, according to the Paris-based Inter-

national Energy Agency.

Even China, the world's leading growth economy this year, will experience a 2% fall in electricity by 2% in comparison with 2008. This is in face of an 8% total economic expansion this year, as reported by Beijing's officialdom. Russia, experiencing a major letdown anticipates a severe electrical cutback of 10%. Simultaneously, countries in the Organization for Economic Cooperation & Development will experience a fall of almost 5%.

Seventy-five percent of the global decline in consumption is accounted for by industrial, rather than household demand, reflecting China's drop in industrial activity for export. India, which is on a solid uptick, is actually increasing its consumption by more than one percent this year.

Despite the volatile nature of oil demand, and that of other commodi-



BY MORRIS BESCHLOSS,
PVF and economic analyst emeritus

ties during times of severe recession, a reversal in electrical usage has never occurred since the end of World War II. In fact, forecasts of electricity usage before the current local crisis had been projected at an increase of 32.5% between 2006 and 2015. World electricity increase actually grew by 25% between 2000 and 2006. In 2007, it rose 4.7%, and before the current financial crisis broke out, it had enough momentum (Turn to PHCP... page 46.)

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PHCP expansion

(Continued from page 44.)

to end the year with a 2.5% increase.

The International Energy Agency is on board with the renewable energy concept, but believes that plans in that direction by the world's G20 nations are totally inadequate. The IEA is particularly disappointed that concern about greenhouse gas and CO₂ emissions by most developing nations is not even in the embryonic stage.

The Agency believes that United Nations renewable energy targets have no chance of being met under present conditions. It also predicted that a new oil supply squeeze will make itself felt by 2012. It cited a drop in availability, currently at two million barrels per day and another 4.2 million barrels per day delayed by at least 18 months.

Clean Energy and Security Act readied for congressional action

At a time when the American

economy is struggling to extricate itself from its recessionary morass, Congress is moving to push through an ill-conceived, ill-considered energy bill, whose end result could become catastrophic.

Echoing Obama's Chief of Staff Rahm Emmanuel's admonition,

Despite the impact of the ongoing credit crunch on much of current commercial development, the greater complexity of piping systems can only be resolved by the expertise of the mechanically savvy industry contractor, as these systems become imperative as part of the overall project development.

"never miss an opportunity to take advantage of a crisis," the President's Administration is moving aggressively forward to turn America's energy industry upside down to accommodate the environmentalists and would-be climatologists.

Key to this misbegotten bill is the odious cap-and-trade initiative,

which would drive businesses and power generators to use less oil and coal to slash emissions. According to the Waxman-Markey Bill (named after its Congressional authors), it would make businesses acquire pollution permits to cover their emissions and sell any spares.

No less a leading economic expert than Harvard professor Martin Feldstein, has voiced his concern regarding the ultimate effect on the consumer's pocketbook.

A Congressional Budget Office analysis of climate change policy estimated that price increases associated with a 15% cut in carbon

dioxide emissions would cost the average U.S. household about \$1600 a year. The CBO analysis said low income householders would shoulder a larger burden, as would families in coal dependent regions such as the Ohio Valley.

Additionally, the Waxman-Markey Bill is more than just cap and trade. The proposal would establish requirements that utilities buy at least 12% of their electricity from renewable sources such as windmills, solar panels, and geothermal technology.

Another section of the bill promotes 'large scale' programs to spur demand for electric vehicles with incentives for buying plug-in cars and building charging stations.

The act, if approved, would order the Department of Energy to amend building codes, making new buildings 20% more efficient by 2010, and 50% more efficient by 2016.

If the bill is approved in its present form, get ready to pay handsomely on your future electric bills. Would you believe a possible 50% increase?

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Energy conference exudes guarded optimism

A short, but productive, three-day sojourn in the world's energy capital, Houston, culminated in a gathering of 200 manufacturers, distributors, turnkey contractors, specifiers and fabricators. This was one of four meetings a year of the Pipe-Valve-Fitting Roundtable, of which I have just been selected as board member emeritus.

The key event of the evening was the induction of two leading manufacturers and one outstanding distributor into the PVF Hall of Fame. This illustrious industry hallmark has chosen relatively few prestigious industry companies and individuals to focus on the significant strides made by this energy-related sector, serving all aspects of energy development, transmission, refining, construction, and maintenance. The Hall of Fame was founded seven years ago by the Wholesaler Publication, of which I am chief economist and industry analyst.

The theme running through the intense networking preceding the Roundtable Hall of Fame awards, and a comprehensive presentation on export procedures and regulations, was guarded optimism regarding the increasing activity in power generation, as well as the expected comeback in oil and natural gas expansion by early next year.

Inventory heavy master distributors who service conventional wholesalers and the national gamut of pipe-valve-fitting specialists

seemed to agree that an uptick in business was drawing more goods out of inventory than were being replenished. Among manufacturers, who admitted to substantial reduction from last year's record revenue pace, there were practically no plans for capital expansion, due to the low capacity utilization being used at this time.

One exception was a fast-growing energy industry specialty manufacturer who has become active in the Canadian oil sands projects. Welding Outlets Inc. President Sheryl Michalak, who had just returned from a business evaluation in the oil-rich Alberta tar sands region, related a strong outlook for further oil-producing projects next year. At present, she commented, current projects are being maintained. But future major development awaits expected demand comeback and price increase activity, she added.

This coincides with announced anticipation that 25% of America's

oil needs will be met from Canada's tar sands projects within the next three years.

With India's expansion facilitated by favorable political developments, and the new Tata automobile producer, and China aggressively encompassing a greater percentage of its consumer sector into the modern arena, slackening of American demand, if it occurs, will be more than offset by the two dynamic Asian giants' purchases.

Capital spending continues downward spiral

Despite the green shoots of recovery popping increasingly through the dark soil bed of recession, no such hope is emanating from capital spending, the real indicator of a solid business turnaround.

In fact, most companies are still in the process of cutting costs as they attempt to reduce production and overhead expenses to maintain meager profits, while demand is still in

an embryonic recovery stage.

Latest statistics support this adverse reaction. After a long run of quarter annual gains, capital spending took a 20% plus dive in business outlays in 2008's fourth quarter, and an even worse plunge of a high 30's percentage in this year's first quarter.

The reduced spending outlays for a range of products from forklift trucks on the shop floor to computers in increasingly empty office space accounted for a major portion of the 6.1% annualized decline in first quarter gross domestic product. It's estimated that the precipitous capital spending drop since the end of last year's third quarter is the worst since the 1930's Depression days.

Hit hardest in the most recent quarter were expenditures for industrial machinery, which came close to a 50% drop on a year-to-year annualized basis. Even data processing equipment was not spared, dropping more than at the time of the technol-

ogy bubble bust in 2001.

Also hit hard have been transportation equipment and construction machinery, reaching levels close to a 50% drop-off from a year ago.

Although credit availability has eased markedly since last fall, businesses are loath to tool up for expansion as they face an over capacity that will take a long time to absorb existing production capability.

Capacity utilization of America's industrial plants fell to a record low 65.8% in March, far below the historical average of close to 80%. Not insubstantial as part of this current gloomy capital spending outlook is the U.S. Government's warnings of higher taxes and a cutback in production incentives in the months and years to come. ■

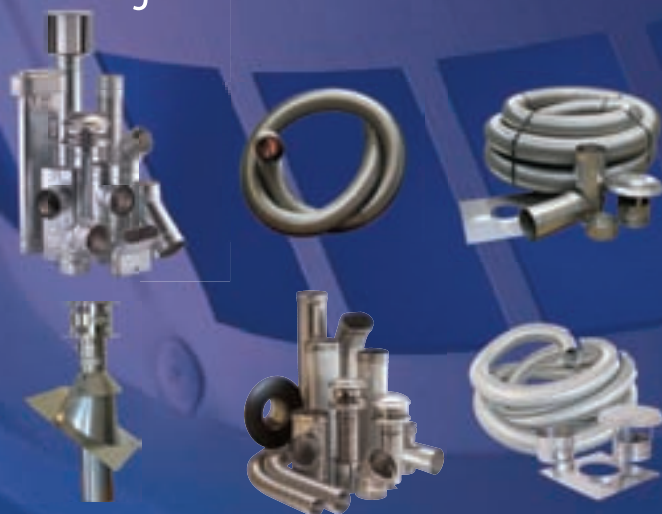
Morris Beschloss, a 49-year veteran of the pipe, valves and fittings industry, serves as PVF and economic analyst for Phc News and The Wholesaler.

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Joists underslab – reliable, economical and time-saving (if you use the right material)

Proven reliability of CPVC joining system allows plumbers to enjoy the benefits of joints underslab with confidence.

The concept of installing joints underslab in new construction isn't novel for Steve Medland.

Medland, vice president at Advantage Plumbing, in Sanford, Fla., has tackled this simple, proven method of plumbing for slab-based housing using FlowGuard Gold® chlorinated polyvinyl chloride (CPVC) pipe and fittings, which has been in the Florida plumbing code for over 25 years. In fact, his firm does most of its work in underslab applications.

"I've always liked CPVC even before I started using it for joints underslab work," says the 20-year-plus industry veteran, noting that the fact CPVC pipe and fittings join easily and permanently with solvent cement is a big benefit of this kind of piping system for both traditional plumbing and underslab applications.

"I don't like mechanical fittings. They're too weak and prone to failure," he says.

For this reason, among others, Medland says he never would go back to trying to do underslab work using copper pipe or other piping

materials. He ran into too many problems, both during installation and afterwards.

Seeking underslab solutions

Joists underslab installation has grown in popularity due to new housing construction trends. Construction of basements in American homes is on the decline thanks to housing booms in the southern and western United States, where the majority of homes are built on a slab. Although basements remain popular in the Midwest and Northeast, as much as 20 percent of new homes in

these regions are even being built on slabs due to cost considerations.

As a result, plumbers face increasingly more of what many in the industry perceive to be the most challenging installation — plumbing under a concrete slab. Numerous horror stories surround product failures that occur beneath the slab — not only because they're costly but also inconvenient.

Historically, plumbers have tried several different installation methods when faced with designing and installing systems for slab homes. Many have opted to run plumbing in the walls and overhead to bypass the slab and any potential problems that could occur beneath it. This method, however, results in added cost because of the dramatic increase in labor and material usage.

Coils, whether plastic or metal, ini-

tially appeared to be attractive. Many of them have since proven to be cumbersome and unyielding. Additionally, contractors experienced spikes in material waste because, as the coil became smaller, the remaining material often was tossed in favor of a new, larger and easier-to-manuever coil.

Some underground PEX pipe installations also have resulted in a questionable track record, largely as a result of permeation concerns. PEX is known for its susceptibility to penetration from harmful chemicals that could be in the ground, such as pesticides and other petroleum products. It is for this reason that California, when choosing to revise its plumbing code to allow the use of PEX in the state (starting August 2009), requires that PEX installed underground must be protected in an "approved" sleeve.

The other method, joints underslab, has traditionally left contractors skeptical about its dependability and financial viability. Copper has a track record of problems due in part to its reaction with the components that comprise concrete. Corrosive soil conditions, particularly in coastal areas, have led to a significant increase in metallic pipe failures and costly underslab repairs. Copper is also a prime target for job-site theft, thanks to escalating prices.

Despite these problems, many contractors still view joints underslab as a preferred, cost-effective, time-saving installation method, as long as the material being installed has a dependable joining system and is not prone to corrosion or pitting. All major plumbing codes, including the Uniform Plumbing Code (UPC) and the International Plumbing Code (IPC), permit the use of CPVC joints underslab. And plumbing contractors use this method all over the U.S. where approved by local code jurisdictions.

Why? CPVC is immune to the corrosive effects of both water and soil. It does not pit, scale or corrode, regardless of the environment. Consequently, it's ideal for use in soil conditions too harsh for copper or even with the salty air of coastal environments.

More importantly, CPVC piping systems have highly reliable joints. In metallic systems, the joint is the weakest link and very often the place where leaks start. Solvent-cemented CPVC joints actually are stronger than the pipe or fitting alone, an important consideration in boosting the confidence of a building contractor deciding to approve the use of joints underslab.

In Central Florida, Shawn Scott of Ocala-based Mike Scott Plumbing has been installing CPVC joints underslab,



The combined benefits of durable CPVC pipe and fittings make such systems an ideal choice for joints underslab installation.

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using FlowGuard Gold pipe and fittings, for more than 10 years after switching over from copper, which frequently leaked under the slab.

“We were putting in copper, and it was making us look bad,” Scott said. “We started looking for an alternative product and moved onto FlowGuard Gold CPVC pipe and fittings because we didn’t have to solder and realized the joint was stronger. Installation was less labor intensive than with copper.”

Medland agreed. “You get a far better joint with CPVC pipe and fittings than you do with metallic systems,” he said, adding that it’s one of the reasons his company does 99 percent of its work with CPVC joints underslab.

Scott said his firm still handles at least five to 10 re-piping jobs each month where they are replacing copper joints underslab because of leaks. “It’s a copper failure, not an installer’s failure,” he said.

Besides the strength of the joint, there are numerous other reasons for installing CPVC joints underslab, including:

- **Material savings.** There’s less material waste during installation of rigid FlowGuard Gold CPVC pipe. Additionally, fewer feet of pipe are required for underslab installation compared to overhead installations.

- **Labor savings.** A one-step joining system using solvent cement eliminates the need to roll, manifold, flux and solder. This makes FlowGuard Gold CPVC pipe faster and easier to install than metal pipe or even CPVC coils.

“There’s definitely a noticeable labor savings with FlowGuard CPVC pipe and fittings,” Scott said. “There’s no sanding, no fluxing and no soldering. That keeps us on the fast track. You can save roughly two hours per job.”

- **Better insulation.** CPVC pipe offers superior insulating properties compared to copper pipe.

“It requires much less insulation on the recirculation lines,” Scott says. “The insulating factor is what convinced our builders to let us install FlowGuard Gold CPVC pipe using joints underslab.”

- **No conflict with other trades.** Before the slab is poured, there are fewer contractors on the job site. This gives the plumbing crew more space and flexibility for installation. Once the slab is in, other trades start their work, as well, meaning plumbers would have to work around electricians, HVAC professionals and numerous other tradesmen.

Pricing also comes into play. Unlike copper, which is subject to pricing fluctuations, CPVC product pricing is more stable. ■

How to achieve sustainability through mechanical grooved piping systems

BY LARRY THAU

In 1989, the United Nations defined sustainability as the ability “to meet the needs of the present without compromising the ability of future generations to meet their own needs.” With buildings consuming an estimated 40 percent of all energy used in the United States today, building owners, architects and other stakeholders are discovering significant economic and social advantages to designing and building for a healthier planet.

Sustainable (green) development starts with the following commitments on the part of the building owner: to minimize site impact by preserving trees and wetlands; to conserve energy, water and other resources; to reduce dust, noise and air pollution; to use renewable materials and to plan for the impact of transportation and parking on the surrounding neighborhoods.

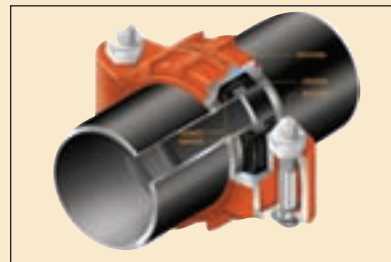
In addition to promoting aesthetic and social harmony, green buildings provide real cost savings for owners, during initial construction, as well as over a structure’s life cycle, through savings in energy consumption and maintenance. Sustainable design involves more than just site orientation and energy-saving construction techniques. What goes into a building in the way of infrastructure is equally important. Well-planned HVAC, plumbing and other mechanical engineering systems are essential to making a building sustainable throughout its life cycle.

Sustainability is an ongoing process in which every manufacturer and fabricator of building systems plays a key role. This article will describe how grooved mechanical piping systems promote sustainability and a future of safe and efficient operations, from manufacture and installation through operations and maintenance.

Mechanical grooved piping systems rooted in sustainability

Grooved mechanical piping was invented in 1925 and was used during World War I to rapidly deploy essential resources such as fuel and water to the Allies. Through the years, mechanical piping systems were increasingly used on HVAC, plumbing and fire protection applications, due to the time and labor savings associated with installation. Today, grooved piping systems are an excellent alternative to soldering and brazing for potable water distribution, equipment connections on pumps, water softeners and filters, as well as drain, waste and vent piping.

Grooved systems employ a proven roll grooving process to join piping, valves and other components. Using a simple, two-bolt coupling design, pipefitters can make rugged, secure joints quickly and easily, using only basic hand tools. With a union at every joint, contractors have maximum field flexibility for on-site decision making. All



The flame-free installation of mechanical pipe joints is inherently safer and easier to work with, leading to safer job sites for workers and the environment.

couplings are sealed for optimum integrity by means of a durable elastomeric gasket designed to withstand years of sustained high compressive and cyclical loads.

Grooved joining technology is rooted in sustainability; its inherent qualities naturally make it environmentally friendly. Even before the evolution of the green building trend the grooved piping system provided a more efficient, cleaner and safer system versus other pipe joining methods, such as welding, soldering or brazing.

Reducing the need for welding, soldering or brazing means better air quality, less particulate matter released into the atmosphere and decreased fire risk. There also is less material waste, reducing site impact. Indoor and outdoor air quality are preserved because there are no fumes or particulate matter to endanger workers or the environment. Finally, highly recoverable material content is used during the manufacturing of grooved piping system components.

Products made from natural resources

Most top-of-the-line manufacturers have in place processes that help to reduce dependency on natural resources, promoting sustainable manufacturing. The manufacturers of grooved mechanical piping systems are without exception. Most grooved products use recycled steel, and the products are manufactured using the natural elements of fire, sand, water and air. Products may be painted using a dip coating application, which, unlike spray painting, does not atomize, so it is not a source of regulated pollutant emissions. In addition, dip coating eliminates the need for volatile solvents that are used to thin paints in the spray painting process.

The manufacture of mechanical systems requires the use of sand molds. The re-use of sand for the molding of (Turn to Grooved Piping, page 51.)



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Bonding all metallic systems for better lightning safety

Lightning is a highly destructive force. Even a nearby lightning strike that does not strike a structure directly can cause systems in the structure to become electrically energized. Lightning strikes vary in strength from 1,000 amps at the low end to 200,000 amps peak; a typical strike contains 10,000 - 20,000 amps.

Despite the damaging nature of lightning, lightning protection systems are generally not required. The National Electric Code (NEC) and the National Fuel Gas Code do not consider lightning protection within their scope and, instead, rely on the electrical grounding system, which is not designed to handle current from lightning strikes.

Differences in potential between systems may cause the charge to arc between systems. In fact, all metallic



Certain areas of the United States have a higher risk of lightning strikes. Areas include Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, New Mexico, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia and West Virginia.

systems (the electrical, plumbing and heating and air conditioning, for example) can be affected by lightning

strikes. Safety isn't just about how each system is installed; it's about how each installation relates to other metallic systems.

Such arcing can cause damage to corrugated stainless steel tubing (CSST) and other systems. Bonding and grounding should reduce the risk of arcing and related damage. NEC Section 250.104b notes that "bonding all piping and metal air ducts within the premises will provide additional safety."

All continuous metallic systems in a multi-unit home or commercial building should be bonded and grounded for addi-

tional lightning safety. The owner should confirm with an electrical or construction specialist that each continuous metallic system in a structure has been bonded and grounded by an electrical professional, in accordance with local building codes. This should include, but is not limited to, metallic chimney liners, metallic chimney liners, metallic appliance vents, metallic ducting and piping, electrical cables and structural steel.

Care should be taken when installing any type of fuel gas piping (including CSST, iron or copper) to maintain as much separation as reasonably possible from other electrically conductive systems in the building. Refer to section 4.3, Routing, in the Gastite Design and Installation Guide for proper installation techniques.

Consult local building codes

Local building codes are controlling. As a general practice, however, fuel gas piping, including CSST, should not be installed within a chase or enclosure that houses a metallic chimney liner or appliance vent that protrudes through the roof. In the event that such an installation is necessary and conforms to the local building codes, the metallic chimney liner or vent must be bonded and grounded by a qualified electrical professional. A separation distance, as specifically permitted by the applicable local building code between the CSST and the metallic chimney liner or vent is required. Physical contact between the metallic chimney liner and/or the vent is prohibited. If this physical separation cannot be specifically identified in the local building code and achieved or if any local building code requirements cannot be met along the entire length, the rerouting of the CSST is required, unless such installation is specifically permitted by the local building inspector.

Bonding and grounding should reduce the risk of arcing and related damage. The builder owner should confirm that a qualified contractor has properly bonded the CSST gas system to the grounding electrode system of the premises.

Ensuring lightning safety is very important for engineers and designers of a HVAC and electrical systems. It is essential to understand that all metallic systems within a home can be affected by lightning strikes. Looking at all the systems and how they relate to each other is the only way to ensure lightning safety. ■

Dave Burke is applications engineering manager for Gastite.

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Grooved Piping

(Continued from page 49.)

products limits the use of additional raw materials, and sand reclamation programs significantly reduce the amount of sand being sent to landfills each year.

Sustainable job sites

During installation, mechanical grooved piping systems significantly reduce or eliminate waste, emissions and noise pollution on the job site, providing a safer and healthier environment.

The reduced need for soldering reduces emissions on the job site. Byproducts of solder fumes can contain lead oxide, carbon monoxide, V.O.C. (volatile organic compounds) and hydrochloric acid, in addition to many other harmful particles and gases. The elimination of these harmful pollutants means less airborne pollution, providing not only for a more sustainable environment but also for a safer job site during construction, maintenance or retrofit work.

A grooved mechanical pipe joint does not require the use of electricity during installation, reducing the draw on burdened power resources. Pipes that are joined by welding or soldering require the use of vast amounts of

to seal the joint, which must be flushed and cleaned from the system prior to operation. Additionally, soldered systems often require as much as 35% re-work for failures discovered when pressurizing and testing the completed system, which requires additional re-

Pipes that are joined by welding or soldering require the use of vast amounts of electricity for prolonged periods of time consuming up to 4,000 watts of energy per hour on an eight-inch joint.

sources. Grooved mechanical pipe joints can be visually inspected for proper installation, so re-work is minimal, saving energy, resources and time on the job.

Sustainability for the future of a building

Energy costs typically represent 30% of a building's annual budget and are the single largest operating cost (Energy Star). The Energy Systems Lab at Texas A&M University indicated that energy use in buildings



Grooved piping systems have a union at every joint for easy re-routing during system expansion.

electricity for prolonged periods of time consuming up to 4,000 watts of energy per hour on an eight-inch joint.

The installation of a grooved mechanical joint is cleaner than the installation of soldered joints, thus reducing on-site job waste. Unlike soldering and brazing methods, grooved mechanical joints do not require flux

could be reduced from 10 to 40% by improving operational strategies in buildings, including maintenance strategies.

In a plumbing system, booster pumps and strainers need routine maintenance to operate efficiently; less deferred maintenance means a higher level of energy efficiency. With (Turn to Sustainability... page 60.)



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Circle 38 on Reader Reply Card



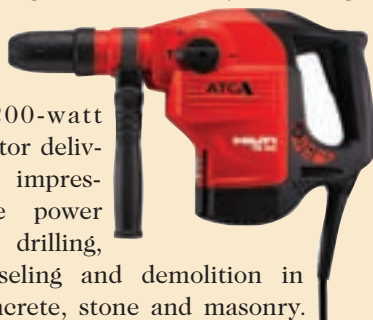
Sawzall diamond blades

Diamond Grit Torch™ Sawzall® Blades offer extended life and improved performance in cast iron; feature coarse industrial diamond grit embedded in high strength nickel alloy braze. Blades last up to 30X longer and cut up to 2X faster than traditional carbide grit blades. A 1" tall profile delivers straight, clean cuts. Available in 9" and 6" lengths. Milwaukee Electric Tool Corp.

Circle 101 on Reader Reply Card

Combihammer

The TE 60 Combihammer combines power and control for heavy-duty drilling with added safety. Its strong



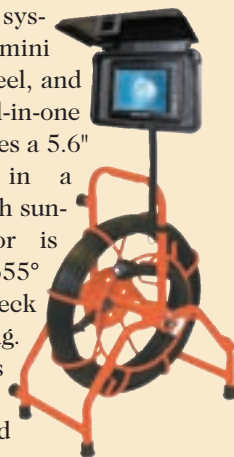
1,200-watt motor delivers impressive power for drilling,

chiseling and demolition in concrete, stone and masonry. The available TE 60 ATC-AVR adds Active Torque Control and Active Vibration Reduction. An optimized mechanical clutch delivers maximum torque and the best power-to-weight ratio in the class for drilling holes for rebar dowels and anchor bolts, through-hole coring, chiseling concrete and much more. Hilti.

Circle 102 on Reader Reply Card

Video inspection system

The economical Gen-Eye POD™ integral camera system combines mini color camera, reel, and monitor in an all-in-one package. Features a 5.6" LCD monitor in a padded case with sun-screen. Monitor is mounted on a 355° swivel gooseneck for easy viewing. Mini-reel carries 125 ft. or 175 ft. of push rod and the color mini-camera



is small enough to troubleshoot 2" to 4" lines. Video out connection lets you record to external device. An optional 512 Hz transmitter is available. General Pipe Cleaners, a division of General Wire Spring.

Circle 103 on Reader Reply Card

★ Phc News tool pick of the month ★



SeeSnake® microDrain™ Inspection System

The SeeSnake® microDrain™ inspection system allows for quick inspection in places previously difficult to inspect, providing accessibility, efficiency and reduced job time. The compact microDrain inspection system features a 30-foot flexible cable and a small 22-millimeter diameter camera head that allows for access through many toilet traps and small P traps without the need to disassemble or dismantle plumbing fixtures. RIDGID.

Circle 100 on Reader Reply Card



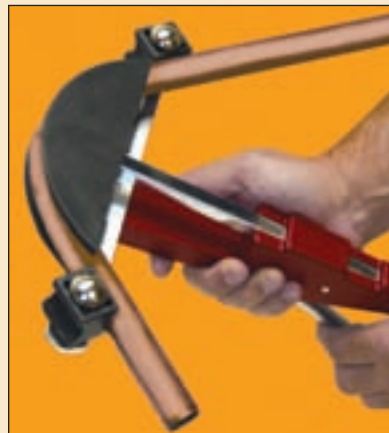
Bi-metal ship auger bit

This bi-metal ship auger bit has a unique bi-metal construction that allows the bit to outlast the competition. Uses the same technology as reciprocating saw blades; its hard, high speed steel screw tip and cutting edges give the bit much longer tool life in tough applications, including nail encounters that can damage or break competitive ship auger bits. LENOX.

Circle 104 on Reader Reply Card

Tube bender

The new "CrossBow" ratchet tube bender creates precision bends to



90° on soft copper and aluminum tubing. Low friction mandrels and rotating side bending blocks produce smooth, accurate bending in restricted spaces. Achieves minimum distortion bends for optimal flow. Produces repeated alternate angled bends. Uniweld Products, Inc.

Circle 105 on Reader Reply Card



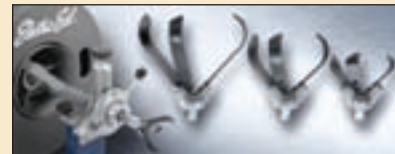
Handheld pressing tool

The M20+ and the P20+ professional-grade pressing machines are bringing increased productivity, time savings and ease of job execution to the skilled plumber and pipe tradesman. VIRAX M20+ is a compact pistol grip pressing machine the size of a cordless drill. Stanley VIRAX.

Circle 106 on Reader Reply Card

Expansion tools

Three special expansion cleaning tools have been added to company's



accessory kit for mainline machines. The 3-bladed tools are available in 3 sizes: 3"-4", 4"-6" and 4"-8" and are constructed of heavy-duty heat-treated steel for longer life. Blades can be replaced separately for cost savings and the expansion tools all feature the snap-lock quick connect coupling. Electric Eel Mfg. Co.

Circle 107 on Reader Reply Card

Fast-acting drain cleaner

Green-Blaster is specifically formulated for use by professional plumbing maintenance personnel working in hotels, restaurants, apartment and condominium complexes, nursing homes and schools. Opens drains clogged by grease, hair and other organic matter, controls root growth, and opens grease traps fast without the dangers associated with acid type drain openers. J.C. Whitlam Mfg. Co.



Circle 108 on Reader Reply Card

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Circle 38 on Reader Reply Card



Low-VOC solvent cements

In response to increasing public concern, requests from contractors and the requirements of government agencies in some areas of the U.S., company has added low-VOC solvent cements, primers and cleaners to its' line of products, in a variety of formulations and sizes, for use with PVC, ABS and CPVC pipe. These low-VOC products meet the requirements for LEED accredited projects and areas of the country where the use of low-VOC products is required. **Rectorseal.**

Circle 110 on Reader Reply Card

Hi output residential gas water heaters

The M-I 60-gallon and M-4 60-gallon models offer a 40,000 Btu/hr input



with a 90-gallon first hour delivery. These high-volume, high-output conventional-vent residential products provide more hot water and are available in both natural and LP gas models. They feature the Defender Safety System® flammable vapor ignition resistant technology. **Hydrojet® Total Performance cleaning system** helps reduce sediment build-up, increases first-hour delivery, minimizes thermal stratification. **Bradford White.**

Circle 111 on Reader Reply Card

SloanStone® solid surface lav system

Vandal-resistant sinks stand up to high-use commercial restroom use. Concave basins with slightly pitched counter



space between each basin keep water from pooling; sloped, one-piece molded surface provides a sleek, clean, level appearance. Bio-Deck lav styles are made from ground-up corn cobs that replace petroleum-based materials. Bio-Line lavatories come with either oval-shaped, drop-in stainless-steel bowls or undermount porcelain bowls. **Sloan Valve Co.**

Circle 112 on Reader Reply Card

★ Phc News product of the month ★



See for yourself with the VIS Series miniature camera

The pan-and-tilt miniature camera and LED light provide an all-encompassing view of even the darkest spaces. Equipped with a TFT color monitor, the VIS Series will give you brilliant and recordable images of spaces to show your customers and prove what needs to be done. Analyze defects in water pipes and inspect flue-gas lines, chimneys, heating lines, ducts, and more. **Wohler.**

Circle 109 on Reader Reply Card

Solar X-Pump Block

The popular, all-in-one X-Pump Block now meets solar thermal applications

as a complete solar mixing system, combining a variable speed solar mixing control, heat source circulator and heat exchanger into a single unit. Stainless steel, brazed plate counterflow style heat exchanger isolates the heat creation source side of the system (solar collector) and the heat sink side (storage tank). Maintains a setpoint differential between the solar collector and a primary and optional auxiliary storage tank; it can support a booster pump as part of a drainback system, and features an intelligent heat dump option and freeze protection for open systems. **Taco Inc.**

Circle 113 on Reader Reply Card

FreeHand™ high efficiency flush valves

Easy-to-operate FreeHand™ high efficiency flush valves promote water

and energy savings by using an infrared sensor beam to activate a flush cycle when a user is in range, ensuring efficient water use and the ultimate in sanitary protection. FreeHand high efficiency flush valves also help promote water savings with new low flow rates. Water closet flush valves feature a flow rate of 1.28 gpm, a 20% savings from the industry standard of 1.6 gpm. FreeHand high efficiency urinal flush valves feature a flow rate of 0.5 gpm, a 50% savings from the industry standard of 1.0 gpm. **Moen Incorporated's Commercial Division.**

Circle 114 on Reader Reply Card

Waterless urinal

This manufacturer understands the importance in preserving our natural resources by using eco-friendly materials, so it has introduced its waterless urinal. The urinal is designed to combine attractive looks, vandal resistance and versatility. Constructed of 95% recycled stainless steel material, the urinal requires no water and has a removable strainer. Options include ADA rim height, black matte, white gloss or other custom powder coat finishes to match your environment. **Acorn Engineering.**



Circle 115 on Reader Reply Card

Roof pipe support

C-PORT roof pipe support product is engineered to be installed onto roofs without any penetration and to sup-



port the load of pipes used with various rooftop equipment. Made from recycled tires, which makes them an easy way to earn LEED points. The rubber composition of the product also provides vibration damping and long life. In stock at the company's Chicago head office, in addition to select distribution centers throughout the country. **MIFAB.**

Circle 116 on Reader Reply Card

Master tempering valve series

Series N170-M3, the next generation of master tempering valves for hot water distribution in commercial and institutional facilities, includes five valves (3/4", 1", 1 1/4", 1 1/2" and 2"), and is listed to ASSE 1017 and replaces the current Series N170-M2. Complies with CSA B125.3 through IAPMO and carries the CUPC seal. Although the N170-M3 has been re-engineered, it maintains the exact roughing-in dimensions of its Series M2 predecessor for trouble-free direct replacement. **Watts.**

Circle 117 on Reader Reply Card





Extra heavy seamless pipe nipples

Company has expanded its steel pipe nipple product line; extra heavy black seamless nipples range from 1/8" to 4" diameter, and up to 12" in length. They meet or exceed all ASTM and ANSI standards, to include ASTM A-106 Gr. B, for material and ANSI B1.20.1 for threading. For high pressure industrial applications such as hydraulic, petrochemical and refinery operations and other markets for which higher pressure applications are necessary. **Matco-Norca.**

Circle 119 on Reader Reply Card

Hand washing sink

The WS-1100 all-in-one hand washing sink is easy to install. Under one model number, the kit has an integrated back splash, single-hole faucet mount, drain assembly kit and wall-mount bracket. Made for use with the ChekPoint EC-3101 electronic faucet and may qualify towards credits for LEED certification through water conservation. Ideal for restaurants, hospitals, schools and institutions where hand washing is frequent. **T&S Brass.**



Circle 120 on Reader Reply

Wall-mounted condensing boiler

Wall-mounted Vitodens 200 modulated condensing boiler offers superb efficiency and reliability. The Inox-Radial heat exchanger surface of



high-alloy stainless steel and the modulating MatriX-compact gas burner make for maximum energy usage with minimum emissions and small space requirements. Up to 98% efficient with full modulation and

95.2% AFUE on all models and top heat exchanger reliability. Compact and lightweight with multiple venting options; runs quietly, can be installed in living areas. **Viessmann.**

Circle 121 on Reader Reply

★ Phc News product of the month ★



New generation of circulators slashes energy consumption

ALPHA is an energy-optimized, 115-volt circulator featuring a permanent magnet motor design that will cut power consumption by a minimum of 50%, as compared with other circulators in its class. Designed for hydronic heating applications in residential and light-commercial applications, the compact ALPHA is equipped with the manufacturer's unique AUTOADAPT function that automatically modulates circulator performance to match ever-changing system demand. **Grundfos Pumps.**

Circle 118 on Reader Reply Card



Just-Lift commercial fastening system

Designed specifically for the hospitality and healthcare industries, the Just-Lift hinge enables the seat to be pulled straight up from the open position, creating a 1.5" gap between the seat and bowl for more thorough cleaning than traditional hinges allow. After cleaning, the seat is just pushed down, making the hinge flush with the bowl. The Just-Lift hinge system has been teamed up with Sta-Tite® Commercial Fastening System™, which delivers faster installation speeds while eliminating the need for labor-intensive retightening of loose seats. **Bemis Mfg.**

Circle 122 on Reader Reply

UltraPress ball valves

The UltraPress™ full port brass ball valves is designed for use in press-



connection systems. The valve is available in both Press-to-Press (BA-480B) and Threaded-to-Press (BA-490B) ends. Designed for potable water, mechanical HVAC and process water apps, UltraPress offers a faster installation alternative to traditional solder or threaded joints. The Ultra-Press ends are designed to work with compression tools and equipment commonly used in the plumbing and HVAC contractor communities. **Milwaukee Valve.**

Circle 123 on Reader Reply



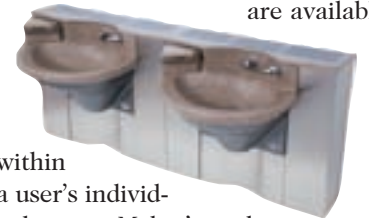
Seismic bracing attachment

Fast Clamp offers 12" of overall adjustment for rough-in style installation, taking the guess work out of cut lengths. "Fast Attach" yoke design is easy to install for multiple hanger rod sizes. Figure 985 fits trapeze-style or single pipe hangers and is available in two sizes: 3/8" - 5/8" hanger rod size and 3/4" - 7/8" hanger rod size. Fig. 986 comes in a standard 1/2" rod size (other sizes available), and is designed to be the upper or structural attachment. **TOLCO, a division of NIBCO Inc.**

Circle 124 on Reader Reply

Advocate™ Lavatory System

A personal handwashing station provides an all-in-one experience, since access to water, soap and hand dryer are available



within a user's individual space. Maker's exclusive and contemporary-looking design keeps all handwashing elements in immediate reach, so the user doesn't need to move, minimizing dripping water on the floor and wasted paper towels. **Bradley Corp.**

Circle 125 on Reader Reply

Hybrid boiler control

The Mini-MOD-CNC lets owners effectively and efficiently control a boiler system that



utilizes both condensing and non-condensing boilers. Automatically mixes and matches non-condensing boiler operation and condensing boiler operation to optimize efficiency of a combined system. It also allows mixed control of modulating and staging boilers. Faster ROI; automatically switches to high mass boilers when the heat requirements approach design loads. **Heat-Timer Corp.**

Circle 126 on Reader Reply



Automatic explosion proof pumps

High head pumps for submersible sewage or dewatering applications. Motors FM listed for Class 1, Division 1, Group C and D environments. Durable cast iron cover, motor adapter and pump housing with stainless steel parts. In 2" or 3" NPT flange discharge. **Zoeller Pump Co.**

Circle 150 on Reader Reply Card



Z-one™ zone valves

Updated 6-page brochure conveys specification data including performance, material and dimensional information specific to Z-one™ zone valves, used to automatically shut-off the flow or redirect hot and chilled water in hydronic heating and air conditioning systems. **Caleffi.**

Circle 151 on Reader Reply Card



SYNC™ condensing boiler

The new SYNC condensing boiler equipped with the advanced SMART TOUCH touchscreen control system. Stainless steel heat exchanger and modulating/condensing combustion deliver thermal efficiency as high as 98% in low water temperature operations. **Lochinvar Corp.**

Circle 152 on Reader Reply Card



Temperature limiting valves

4-page color brochure describes temperature limiting valves. Model 170 single outlet mixing valves for lavatories and sinks, and Models 270 & 370 for single or multiple outlet mixing valves, for lavatories, sinks or small hot water heater applications are featured. **Leonard Valve Co.**

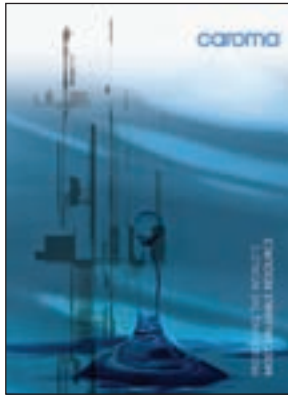
Circle 153 on Reader Reply Card



Medical industry piping brochure

Providing Safe, Reliable and Cost-Effective Piping Solutions for the Medical Industry brochure highlights the BlazeMaster CPVC fire sprinkler system, combination Flow-Guard Gold/Corzan CPVC plumbing system and Corzan CPVC chemical waste drainage system. **Lubrizol.**

Circle 154 on Reader Reply



High-efficiency products brochure

Providing high efficiency dual flush toilets, high efficiency and waterless urinals and stylish bathroom sinks, this multifold brochure contains all products available, water savings potential compared to other toilets and an explanation of siphonic versus washdown technology. **Caroma.**

Circle 155 on Reader Reply



Labor Saver® fixture support

Figure number 0710 has been designed to speed installation by using a one-piece rigid frame, pre-assembled steel construction. Oxbow symmetrically designed fixture support allows room for the waste piping and features horizontal and vertical adjustability. **Jay R. Smith Mfg. Co.**

Circle 156 on Reader Reply Card



Fire sprinkler piping guide

Company has published its new comprehensive 72-page CPVC Fire Sprinkler Piping Installation Guide to provide the fire sprinkler industry with its most comprehensive printed resource for technical data on installing CPVC fire sprinkler systems. **Harvel Plastics, Inc.**

Circle 157 on Reader Reply



Commercial products catalog

Commercial Division announces the its 2009 commercial products catalog, featuring products that are "Built for the Real World." Comprehensive, easy-to-use guide details look at Moen Commercial products that offer durability, vandal resistance and energy efficiency. **Moen.**

Circle 158 on Reader Reply



RIDGID product catalog

The 234-page color full-line catalog includes new products and reader-friendly features to help guide customers in choosing products. A visual product index divides the catalog into 13 product categories to enhance the overall navigation of the catalog. **RIDGID.**

Circle 159 on Reader Reply Card



Hydronic systems & components

Features hydronics equipment and accessories for residential/commercial apps, including circulators; electronic controls, air elimination products, valves, radiant systems and water recirculation. Also info on the contractor development and training program FloPro. **Taco, Inc.**

Circle 160 on Reader Reply Card



ProRadiant line's Climate Mat

Pre-fabricated Climate Mat system is a roll-up assembly with tandem supply and return headers and 1/2" tubing. Made in two separate 5' sections; may be unrolled one at a time or simultaneously. Lay 20,000 sq.ft. of evenly spaced radiant tubing in only eight hours. **Viega.**

Circle 161 on Reader Reply Card

SHARKBITTEN.



INTRODUCING CASH ACME VALVES WITH SHARKBITE® CONNECTORS.

It's an open-and-shut case for plumbing efficiency. The SharkBite® Connection System now offers thermostatic,



regulator, and ball valves with integral or union type push-fittings, for fast and easy installation in copper, CPVC or PEX pipe plumbing systems. Just insert the pipe and the stainless steel teeth bite down and grip tight – with no soldering, clamps, unions or glue. Disassembly is just

as fast using the simple disconnect tool. So valves can easily be changed and reused. Valves can even be rotated after assembly for easier installation in tight spaces.



From thermostatic mixing valves to pressure regulators, SharkBite connectors make installation fast.

The SharkBite Connection System, now with a wide range of easy-to-install push-fit valves. Just another way Cash Acme gives you a grip on increased plumbing sales.



OVERBUILT IS AN UNDERSTATEMENT.®

Securing new business during the recession

BY JENNIFER MALONEY

Securing new business is critical during an economic downturn. With traditional means of marketing and advertising becom-



Customers can trust a 1-800-PLUMBER franchise partner has had a full background check, will arrive promptly, be upfront with rates and professionally dressed in uniform. The work done by 1-800-PLUMBER is fully guaranteed.

ing less effective, plumbing, heating and cooling contractors are finding new ways to market their businesses and ride out the recession.

Jim Pierce, president and CEO of 1-800-PLUMBER, knew there would be tough economic challenges when he launched the new plumbing franchise on the brink of an economic downturn. In order to give franchise partners the best possible competitive advantage, 1-800-PLUMBER's marketing team had to think outside of traditional advertising and appeal to consumers who are concerned about stretching their dollars and getting the most value for what they do spend. Here are a few ways



the company suggests staying ahead of the curve.

1. Increase your company's online presence.

The Yellow Pages used to be plumbing, heating, and cooling contractors' main source for advertising to both home and business owners. With the world's online population growing rapidly year after year, however, companies that don't have an online presence are missing out on a huge share of potential customers.

Pierce suggests working with a team of web and search engine specialists to optimize the company's website. A website must be user friendly for consumers as well as the search engines themselves. Search engines look for certain content found in sites to determine how valuable the site may be to the person searching.

If a site is not built with search engine optimization in mind, it can be the most beautiful site online, but it won't generate the traffic that is nec-

essary to grow a business. Companies should consider dedicating a percentage of their advertising budget to online, which can often be less expensive and very effective at reaching target customers.

Another benefit of using the Internet as a lead source is the ability to easily track its effectiveness. Most online advertising programs are fully trackable allowing the company to know the effectiveness of their online investment. In fact, many online campaigns are based on pay per click or even pay per call basis, which means businesses only pay if the program is successful.

2. Show long-term value.

Every financial decision is carefully scrutinized when the economy is unstable. If contractors can find ways to save customers money in the long-run, it's much easier to justify their services and close a sale.

One way 1-800-PLUMBER suggests showing long-term value is to use cameras for drain cleaning in-



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Circle 41 on Reader Reply Card

spections. This allows contractors to diagnose the true cause of drain failure; actually show the customer the problem inside the drain validating that what they are saying is correct. This in turn makes it easier to recommend long-term solutions that will save clients money down the road. Proving value is also a great way to get word-of-mouth referrals.

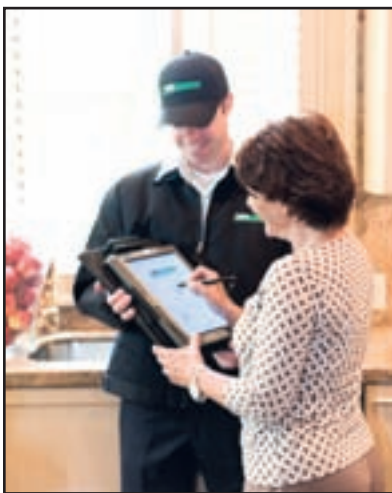
3. Know your competitive advantage and communicate it.

With a large number of qualified contractors bidding for a finite number of jobs, it's important for business owners to know what makes their company stand out from the competition. This is the first step in establishing a brand.

Whether it's the price point, professional service standards, or an ability to guarantee work that sets a business apart, carving out a niche can help contractors land competitive jobs. Pierce suggests business owners brainstorm company values.

Once contractors know what core values they want to align themselves with, they should write them into a mission statement. All staff should embody the company's core values and communicate them through their actions and language.

For example, one of the values 1-800-PLUMBER chose was professionalism. When a franchise partner arrives at a job, customers know they have gone through a full background check, they will be on-time, upfront with rates and professionally dressed in uniform. In addition, cus-



Using technology such as online billing via notebook keeps 1-800-PLUMBER franchisees a step ahead.

tomers can rest easier knowing that the work done by 1-800-PLUMBER is fully guaranteed. Customers who value professionalism and are willing to stand behind their work are more likely to chose the company for these reasons.

4. Embrace technology.

Technology is always advancing so it can be hard to know what investments will actually improve efficiency and help both a company and customer's bottom line. Pierce suggests putting technology investments through an evaluation process. Asking questions like: will this technology improve the overall customer experience? Will it give the company a competitive advantage?

What is the upfront investment? What is the long-term return? This simple evaluation process can help contractors determine whether or not an investment is the right one for them.

Not all plumbing, heating and cooling contractors have the time or expertise to keep up with a strong advertising plan. However there are lots of simple, low-cost, innovative

ways to market a business that can help land customers when times are slow. It just takes a little planning and discipline. The contractors who take the time to execute effective marketing campaigns will be at a greater advantage, particularly when times are tough. For more information on 1-800-PLUMBER or to inquire about a franchise visit: www.1800plumber.com. ■

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Circle 42 on Reader Reply Card

Sustainability through grooved piping systems

(Continued from page 51.)

soldered or brazed piping systems, accessing valves, strainers, pumps and water softeners is often a time consuming and inconvenient process, due to the necessity of system shutdown and drainage. The more difficult the process, the more likely the maintenance will be deferred.

Mechanical piping joining systems provide an optimal way to effectively maintain piping systems in structures, thereby reducing the deferral of maintenance and promoting operating efficiency and money savings. Their ease of installation and the ability to disassemble and reinstall the same components make them a simple solution for the frequent performance of both routine and irregular maintenance. For access to a grooved piping system, a maintenance person simply loosens the two coupling bolts, without having to shut down the entire system. To speed the maintenance process, grooved piping systems can also be installed wet or dry. These systems are a safe alternative in specialty facilities, where open flames could potentially create a hazardous environment.

Aside from routine maintenance, it is sometimes necessary to join two existing systems within a structure. In retrofit and adaptability projects, the grooved system is easily re-routed, due to a union at every joint. Grooved mechanical pipe joints can be installed on wet lines; this saves the time required to drain the piping system. Because properly placed butterfly valves provide "dead-end" shut-off service for isolation, operating efficiency can be maintained during retrofit work, and systems can remain live. Additionally, because mechanical grooved piping re-work does not negatively affect indoor air quality or introduce a fire hazard, owners can engage in retrofit projects in occupied buildings without having to vacate the space.

LEED: A blueprint for green development

To better assist owners and architectural design teams in achieving sustainable development goals, the U.S. Green Building Council (USGBC) has codified guidelines through its Leadership in Energy and Environmental Design (LEED) rating program.

LEED is a growing effort worldwide to promote sustainable development. Under the program, developers can earn LEED rating points in six key areas: proper site orientation; water ef-

iciency; energy and atmosphere; materials and resources; indoor environmental quality and innovation and design process.

In addition to promoting sustainability, incorporating grooved piping systems into a building's design can help earn LEED points in a number of ways. Since grooved piping system fabrication requires no welding, fewer workers are needed for a shorter duration and there is less material waste, reducing site impact. Indoor and outdoor air quality is preserved, since there are no fumes or particulate matter to endanger workers or the environment. Simple, rugged design combined with the ability to resist

Since grooved piping system fabrication requires no welding, fewer workers are needed for a shorter duration and there is less material waste, reducing site impact.

seismic moments makes grooved pipe joinery ideal for collection and distribution of gray water and for reducing the possibility of potential contamination of water supplies on or near the site. Finally, the use of highly-recoverable material content during the manufacturing of grooved mechanical piping system components can help contribute to LEED certification points in the Materials and Resources (MR) category.

Building owners, consulting engineers and contractors currently using grooved piping readily acknowledge its superior value and performance in the design of sustainable plumbing, HVAC and other systems. Many owners are already reaping benefits through savings in construction time and costs, reduced waste, advancement of environmental goals and improvements in personnel safety and comfort. Equally important, the resulting long-term efficiency and maintainability will continue to pay dividends over the building's life cycle. ■

Larry Thau is chief technical officer for Victaulic Company Inc. A practicing mechanical engineer for 35 years, he holds more than 35 patents and lectures on piping technology around the world.

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Are we willing to harness the sun?

BY JIM SCHAIBLE,
managing editor

From mid-August 1984 to late '87 I lived in the Phoenix area, known for an obvious reason as the Valley of the Sun.

Each year the area sees about 335 clear days, and during the hot months, and the relentless sunshine is nearly a physical presence. It's paradise for all kinds of solar energy projects.

However, in '84 the solar-energy industry still was getting its footing, and schemes to harness the sun's power came and went regularly. In an area where space heating is a minor factor, DHW was the main thrust of the solar business. Solar-energy businesses sprang up like mushrooms, offering myriad means of harnessing sunlight, many of them not very well thought out. As I traveled around the Valley I saw piled in trash dumpsters the debris and wreckage of solar-panel installations that hadn't worked very well or failed altogether.

Still, many rooftops sprouted solar panels of all descriptions, and Valley residents and businesses made good use of the sun's free power. Solar energy was growing out of its early, hippie-like phase and becoming a legitimate alternative to municipal utilities. It stood poised to go mainstream.

Now, as Ellen Rohr points out on page 24 of this issue, solar power of all types is ready to take off and become the Next Big Thing. It's not there yet, but people with vision finally see where it's headed. Thousands of installations across the globe are proving its value.

The secret to a pervasive solar-energy industry is invisibility. As Bristol Stickney has been preaching in our last six issues, a solar installation must oper-

ate as easily and reliably as any other fixture like a boiler or water heater. The consumer ideally shouldn't even know it's there. The controls and materials to make this a reality now are coming onto the market, and an intelligent contractor can provide customers with solar heating that quietly and unobtrusively does its job.

I believe we're seeing the beginnings of a solar revolution. The sun's constant supply of thermonuclear energy provides vast and, for the most part, untapped power. Solar energy accounts for a minute fraction of total usage, but its potential is unbounded. In an era of diminishing energy resources, the sun is the most logical replacement.

When even Middle-Eastern nations floating on crude oil are pursuing nuclear power generation, you know something is up. It signifies they see their supplies of easily available energy drying up. Sure, there is plenty of crude oil left in the world, but the days of simply sucking it from the ground are limited. As it becomes harder to obtain, it becomes more expensive. It's time to leave it all behind and go for something new.

We know how to harness the sun for space and water heating, but using it for electrical power has its limits. Obviously, the sun doesn't always shine, but a proposed national electrical grid and preliminary storage schemes promise to alleviate much of the problem. Efficiency still lags, but researchers now see ways of improving photovoltaic efficiency many times over. Prototypes are operating that require lead as a component, but alternative materials are in the works.

Electric storage also needs improvement, but recent experiments are showing how to greatly improve both capacity and charging time for batteries. The talk is to marry electric cars, charged by PV panels, to the power grid so thousands of individual car batteries can store sufficient electric power to carry a

municipality through the night or cloudy days.

As I write this, Americans are commemorating the 65th anniversary of the D-Day invasion that marked the beginning of the end for Nazi Germany and the Axis powers. That effort was a massive undertaking requiring the coordination of the Army and Navy, untold armaments and transport plus thousands of men. It seemed impossible, yet nobody who was involved doubted its success. They had the will, plus the political support they needed to pull it off.

Nations again face a D-Day of sorts; a battle against dwindling energy resources. The technologies are converging to generate and store most of the energy we need via solar power. Millions of efficient rooftop solar and PV panels providing heat and electrical power would eliminate a nation's dependence on fossil energy. We see the way ahead. All we need is the industrial and political will to do it. ■

Size matters?

I'm sure by now you have noticed the size of *Phc News*. The staff at TMB Publishing hopes you like the new format. Don't fret, the editorial content will remain the same! Considerable thought was put into the decision, and the consensus was that the new format is tailored perfectly for the busy, on-the-go contractor. The new issue makes *Phc News* highly portable, and it may even fit into your mailbox!

Let us know what you think. Send comments to editor John Mesenbrink at editor@phenews.com.

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