

Phc News

plumbing & hydronic contractor news



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- Connects pipe securely without solder or flame
- Adapts to any existing piping system
- Exceeds industry standards

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in plumbing and
heating systems

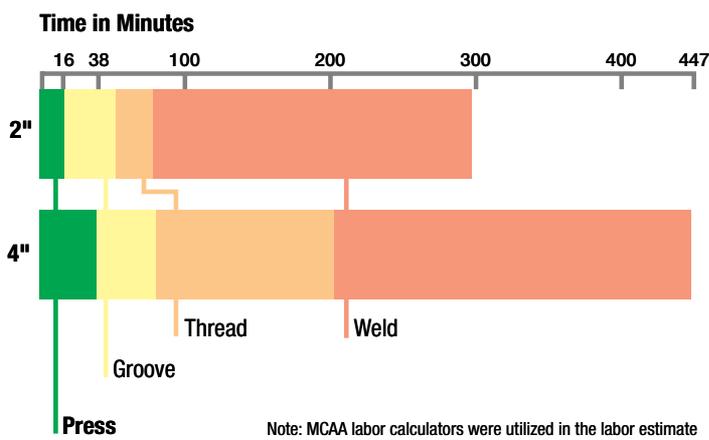
viega

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Viega has the fastest, most reliable method for joining pipes using the patented Smart Connect® feature. The Smart Connect feature is a unique innovation only available with Viega ProPress fittings.

Comparison Using 90° Elbows

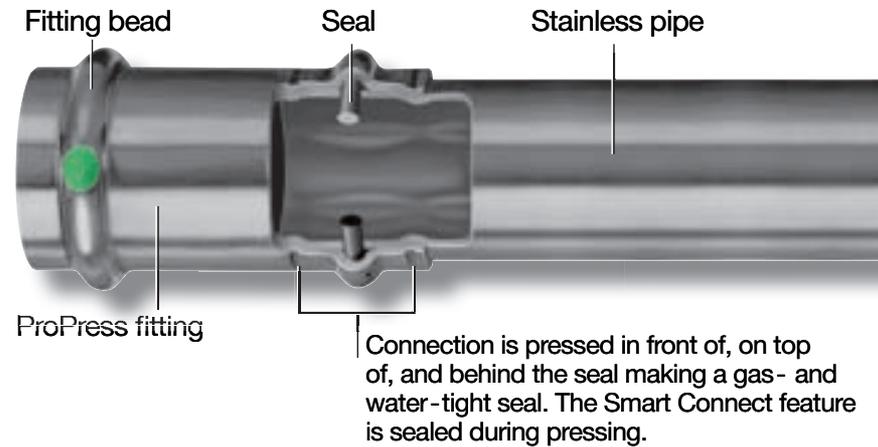


Compare the time required to connect a single press fitting to the time required to connect a single welded, threaded or grooved fitting. Installing Viega fittings provides savings in time and results in reduced labor costs.

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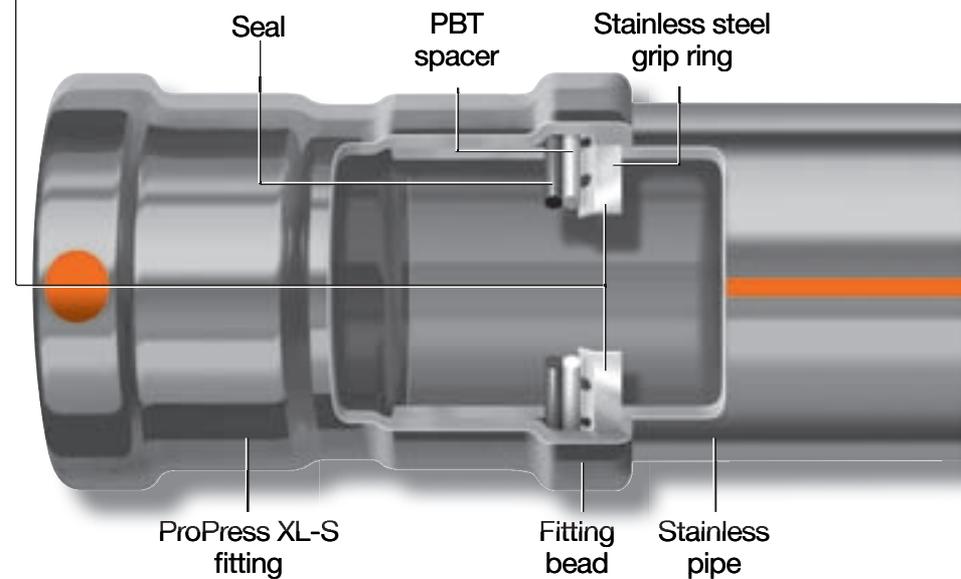
The Smart Connect feature allows liquids and/or air to pass by the sealing element during system test when unpressed.

ProPress Stainless 1/2" to 2" fittings.



ProPress XL-S Stainless 2-1/2" to 4" fittings.

The stainless steel grip ring is pressed on top, forcing the grip ring teeth against the pipe, making a high-strength connection.



Stainless Steel 316 is compliant in CA and VT for potable water systems.

Press technology...
The inside story.

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A TMB Publication

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**Postcards from
the Revolution**



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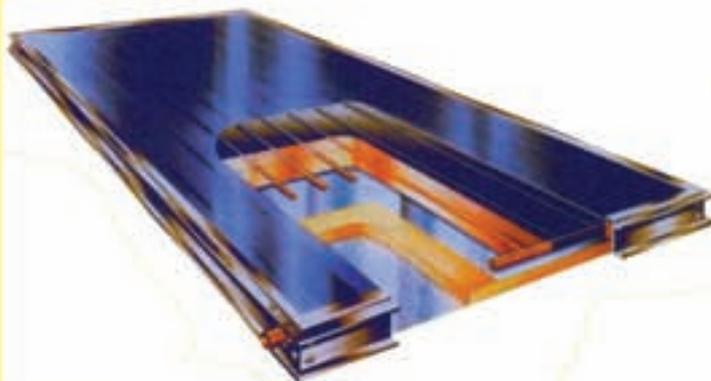
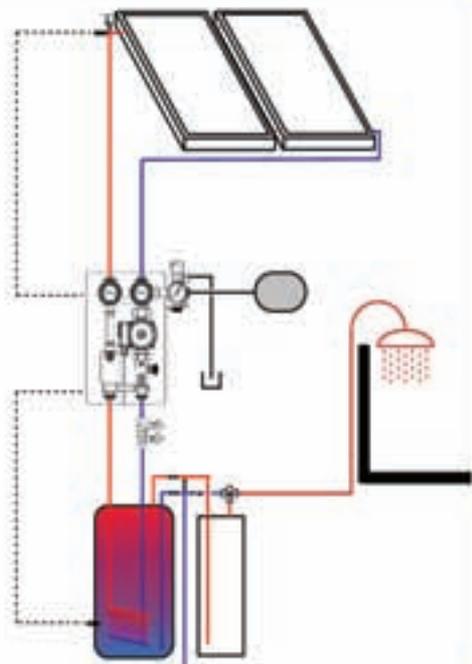
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Energy Systems

Recession Buster Kit



To save the most money on your hot water needs, start with the Oventrop "Recession Buster Kit" — the best deal in solar flat plate hot water kits! These hot water kits have everything you need to get started. In addition, they are SRCC certified so that you can take advantage of federal tax incentives. The Oventrop "Recession Buster Kit" complies with the Buy American Act.

Each kit comes with the following:

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- One Regusol EL-130 pumping station
- One filling and flushing valve
- One flush mounting kit



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On the Cover

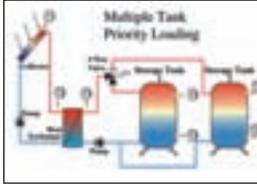
After years of development and implementation, solar energy is taking its place among other forms of energy production. In sunny climates, solar power generation makes especially good sense. Thomas Rooney, president and CEO of SPG Solar, dispels the misinformation surrounding this useful form of energy. See page 50.

Cover photos courtesy of SPG Solar

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46 Solar storage 'batteries'

A solar heating system absorbs a lot of heat when the sun shines, but what to do at night or on cloudy days? Here's a primer on choosing and sizing solar hot water storage tanks to collect and save excess heat "for later."



56 Pipe inspection technology

Inspecting pipes and drains has in recent years become a high-tech aspect of your business, with a wide variety of useful hardware and software to access this most profitable aspect of the trade.



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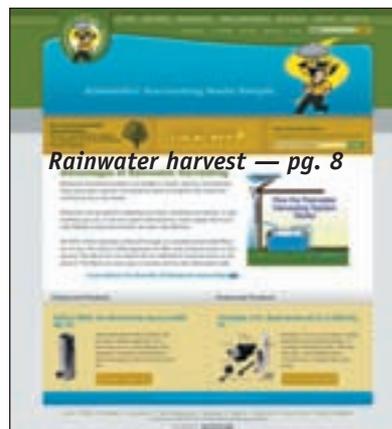
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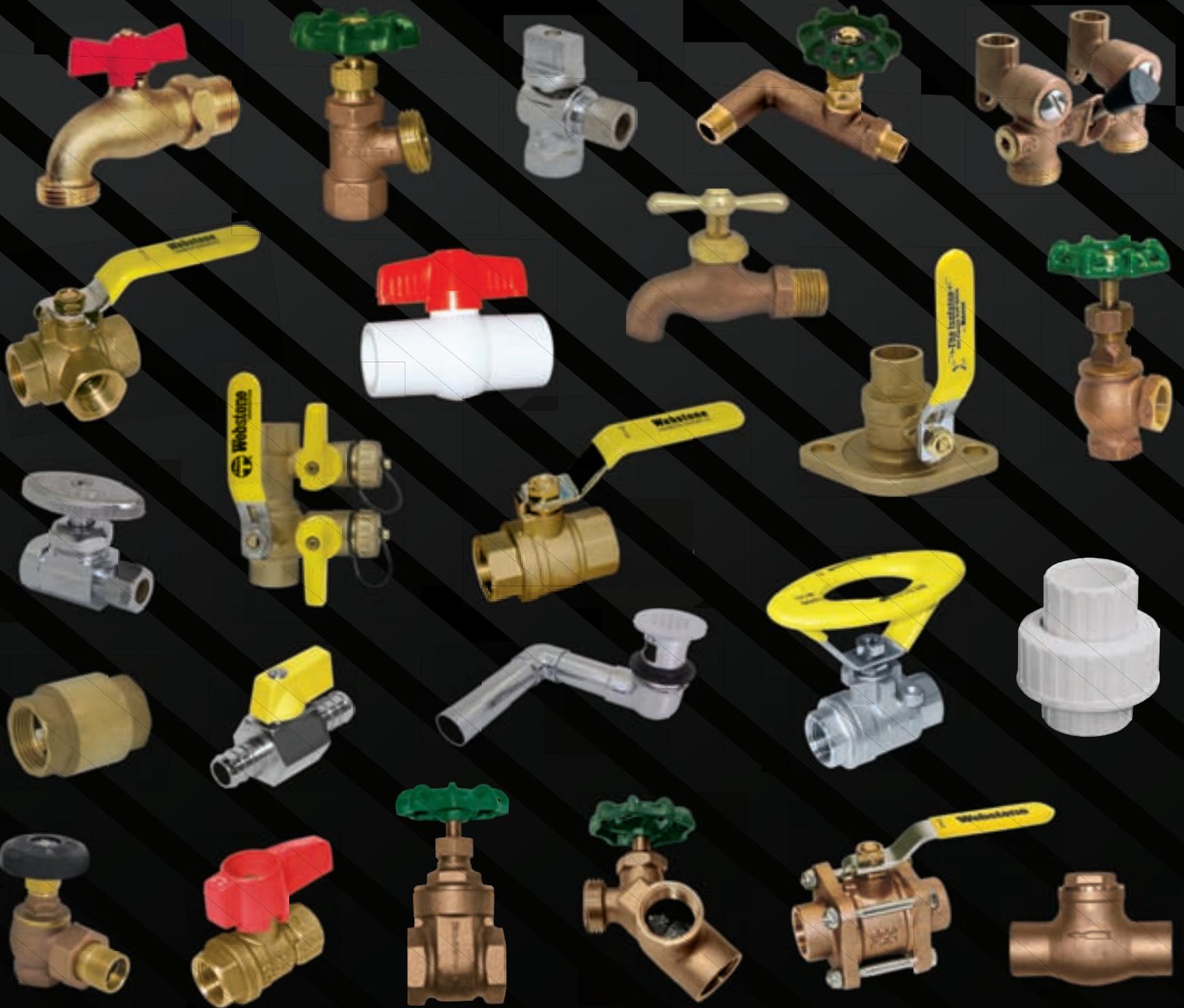
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2010 AHR Expo-Mexico to set new record for Mexico City

WESTPORT, CONN. — The largest AHR Expo®-México ever held in Mexico City has already sold out exhibit space in the World Congress Center. From Oct. 26 to 28, 2010, nearly 300 exhibitors will use more than 46,000 square feet of exhibit space to showcase their newest products to the Mexican and Latin American

marketplaces. Participation by manufacturers from 17 different countries makes the exposition truly international.

This year's event will be the 9th AHR Expo-México since its beginning in 1997. During this time, only one other show exceeded the current 46,000 square feet; that was the

2008 exposition in Monterrey.

Besides the wide range of valuable information offered by exhibitors, HVAC professionals who attend the show can also receive an added value by participating in the concurrent educational program developed by the Mexico City Chapter of ASHRAE. Sessions will be practical in nature, covering topics that will be of immediate value to attendees. Thirty educational courses will be presented by such industry leaders as Johnson Controls, McQuay,

Emerson and Honeywell.

Interest in attending the 2010 AHR Expo-Mexico is already run-



ning high. As of mid August, more than 3,500 visitors had already registered to attend. Based on current projections, show management anticipates that the exhibits and educational program will attract an all-time record number of attendees.

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Little Red Schoolhouse finalizes fourth quarter schedule

MORTON GROVE, ILL. — Bell & Gossett, a leader in education for the hydronic heating and plumbing industries, has announced its training course schedule for the fourth quarter of 2010. The free training seminars are offered at the Bell & Gossett Little Red Schoolhouse Education Center in Morton Grove, Ill., and are open to engineers, contractors and facility maintenance professionals.

The seminars are tailored to various industry occupations and cover a wide range of important topics. The lead seminar instructor is LEED certified for all programs. Upon completion of the three-day seminars, CEU credits are awarded to graduates.

The fourth quarter Schoolhouse seminars are as follows.

- Modern Hydronics Basic Seminar, October 4 – 6
- Steam System Operation & Maintenance, October 11 – 13
- Design & Application Seminar, November 1 – 3
- Large Chilled Water Design Seminar, November 15 – 17
- Steam System Design & Application, December 6 – 8
- Modern Hydronics Advanced

Seminar, December 13 – 15

Since 1954, more than 55,000 engineers, contractors and installers have been trained in the Little Red Schoolhouse's fully equipped learning center, while another 135,000 professionals have received training through B&G's "traveling classroom" program. Graduates of the Little Red Schoolhouse can be found in every state in the U.S. as well as in Europe, the Middle East, Asia, Latin America and Australia.

The Bell & Gossett Little Red Schoolhouse is located outside of Chicago, convenient to O'Hare Airport and major highways. Students who attend the Schoolhouse seminars are just minutes away from all that Chicago has to offer, including sporting events, restaurants, shows, shopping, and other attractions.

For complete descriptions and enrollment information for the educational seminars, visit <http://schoolhouse.itt.com>. Seminar reservations must be made through Bell & Gossett representatives. For a complete list of local representatives, including contact names and phone numbers, visit www.bellgossett.com.

ClimateMaster announces sales training

OKLAHOMA CITY — ClimateMaster has set dates for seven new sales training meetings, beginning on September 28. These one-day meetings will take place in the fall of 2010. They will include a discussion about the direction of ClimateMaster for the future and will introduce a new advertising plan and marketing tools for 2010 and 2011. All ClimateMaster distributors are strongly encouraged to attend.

"It is our mission to educate and inform our distributors with an industry leading team having more than 200 years combined geothermal heat pump experience. Atten-

dance at these meetings is essential to the growth of geothermal sales and profits," said John Bailey, senior vice president-sales and marketing at ClimateMaster. "We will strive for perfection in helping our distributors in their endeavors to make their distributorships more profitable. As our industry grows, we will do everything we can to help them grow with it. A distributor sales force that is well trained and informed on ClimateMaster products and our competitive advantages will allow us all to increase sales and profits."

Visit www.climatemaster.com for meeting dates and locations.

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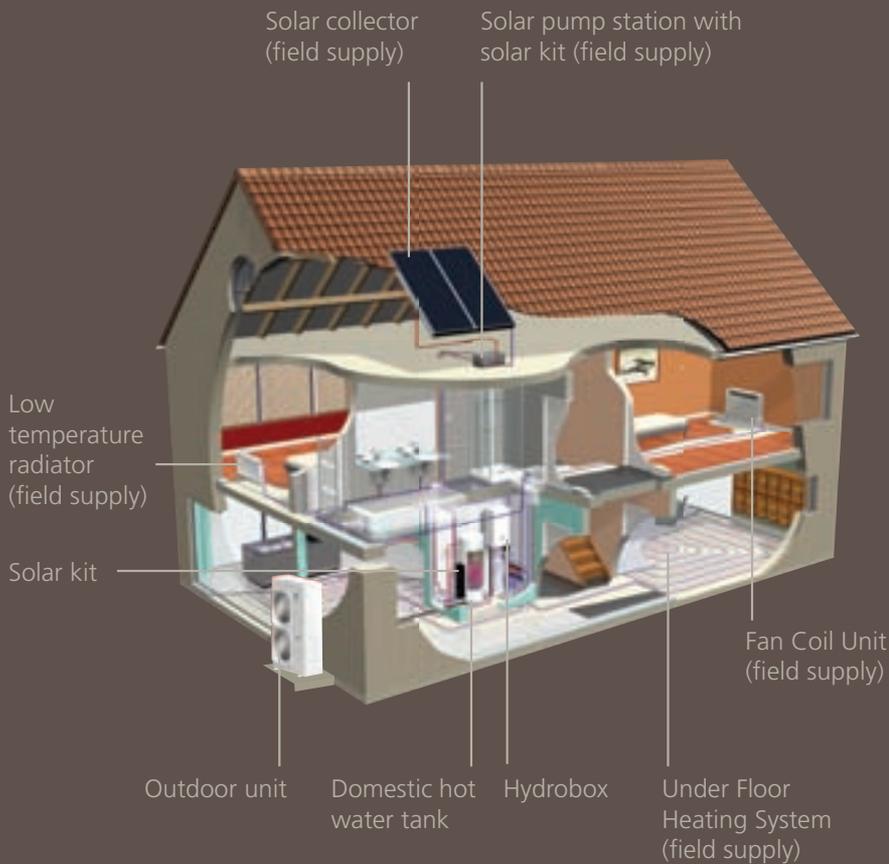
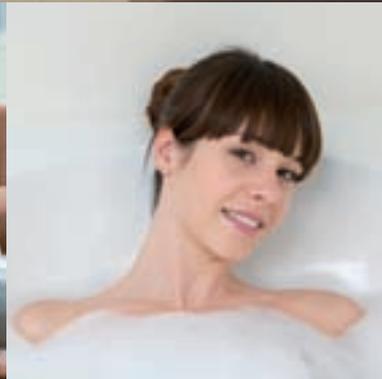


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- Also suitable for urban applications



Daikin Altherma does it better

Daikin Altherma uses inverter compressor technology capable of a heating output precisely matched to required capacity. Commonly reduces power consumption up to 30% compared with traditional on/off systems.

Daikin Altherma is a total heating system. Using a built-in backup heater, the system achieves the best balance between investment and running costs.

Optional domestic hot water is available, as well as optional cooling for year round comfort.

Integration with solar technology is an option, providing additional savings and reinforcing overall reduction of CO₂ emissions.



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For more information, visit www.daikinac.com/altherma or contact a Daikin Altherma Specialist at altherma@daikinac.com.

Website educates consumers about benefits of rainwater harvesting

MONTGOMERY, ALA. — In cooperation with WISY AG and Rainwater Management Solutions, Jay R. Smith Mfg. Co. introduces residential rainwater harvesting products under the aegis of Rainmond's Rainwater Harvesting.

Rainmond's online Web store, www.rainwaterharvestingstore.com, is devoted entirely to residential rainwater harvesting filters and accessories. The store allows customers to order products and educate themselves on rainwater harvesting products and solutions with the use of videos, pictures, drawings, installation guides, case studies and other tools. Rainmond's Rainwater Harvesting Products Store will assist in finding the correct situation for the application. From downspout filters to storage tank

components, Rainmond offers a wide range of reliable and low maintenance products.

Rainwater harvesting technology is simple to install, operate, and maintain. It is convenient in the sense that it provides water at the point of consumption and operating costs are negligible. Water collected from the roof catchment is available for use in non-potable applications such as toilets and urinal flushing, laundries, mechanical systems, custodial uses, and for site irrigation.

Benefits of using rainwater

- It is free; the only cost is for collection and use.
- It lessens demand on the municipal water supply.
- It saves money on utility bills.

- It makes efficient use of a valuable resource.

- It diminishes flooding, erosion, and the flow to stormwater drains.

- It reduces the contamination of surface water with sediments, fertilizers and pesticides from rainwater run-off resulting in cleaner lakes, rivers, oceans and other receivers of stormwater.

- It can be used to recharge groundwater.

- It is good for irrigation and plants thrive because stored rainwater is free from pollutants as well as salts, minerals, and other natural and man made contaminants.

- It is good for laundry use as rainwater is soft and lowers the need for detergents.



- It adds life to equipment dependent on water to operate, as rainwater does not produce corrosion or scale like hard water.

- A 1,000 square foot roof collects 620 gallons of water during a one-inch rainfall.

Blackman acquires Ridgewood Corporation

BAYPORT, N.Y. — Blackman Plumbing Supply, one of the nation's leading distributors of plumbing, heating and cooling supplies since 1921, has acquired Ridgewood Corporation, a supplier of similar products, based in Ridgewood, New Jersey.

"The acquisition of Ridgewood will allow Blackman to effectively expand our operations throughout New Jersey, from the suburbs of

Philadelphia to the lower Hudson Valley in New York State," said Robert Mannheimer, Blackman's president and CEO. "We're very excited to offer trade professionals and consumers in these areas the same level of excellence in product inventory, service and sales support that we've been providing throughout the metropolitan New York City area for 90 years."

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Hydrant Assembly, Jay R. Smith Mfg. Co.®

For more than 80 years Jay R. Smith Mfg. Co.® has focused on offering products that we would want to use ourselves, products that meet the demands of today's job site. A variety of hydrants are vital due to the differences in construction requirements.

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Cored Hole Hydrant Box,
Fig. #5509QTBASS-R



Non-Freeze Boxed Wall Hydrant,
Fig. #5509QT



Guardian Dual Check® Hydrant,
Fig. #5519

To learn more, visit www.jrsmith.com.



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New England	2.676	↓	New England	2.996	↓
Central Atlantic	2.639	↓	Central Atlantic	3.020	↓
Lower Atlantic	2.563	↓	Lower Atlantic	2.886	↓
Midwest	2.636	↑	Midwest	2.909	↓
Gulf Coast	2.527	↓	Gulf Coast	2.888	↓
Rocky Mountain	2.820	↑	Rocky Mountain	3.019	↑
West Coast	3.038	↓	West Coast	3.101	↓
California	3.092	↓	California	3.150	↓

METALS

*Copper	\$3.34/lb.	↑	*Aluminum	\$.93/lb.	↓
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Prices valid as of 8/2/10. 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 & Aluminum prices according to metalprices.com.

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Circle 9 on Reader Reply Card

Patrick B. Armstrong named corporate president and CEO of Armstrong International

THREE RIVERS, MICH. — Armstrong International announces that Patrick B. Armstrong has been named its corporate president and CEO. He succeeds David M. Armstrong who passed away on July 15, 2010.

John Guest® USA hires West Coast regional sales manager

FAIRFIELD, N.J. — Tommy Avery has joined John Guest® USA as its new West Coast regional sales manager, the Fairfield, N.J.-based company has announced. Avery's sales territory will cover eight Pacific and Western states, to include Washington, Oregon, Idaho, California, Nevada (minus



Avery

Clark County), Utah, Alaska and Hawaii.

CRT adds two staff members



Dunagin

pleased to announce the hiring of two staff members, Jonathan Dunagin as marketing director and Kristen Burgess as client services rep.

SHELBY, N.C. — Controlled Release Technologies, Inc. (CRT), a leading manufacturer of HVAC maintenance products and chemicals, is



Burgess

Noble Company announces new representative

GRAND HAVEN, MICH. — Noble Company announced the addition of Bai-

ley Sales & Associates (Seattle) as its new Division 15 Representative for the states of Washington, Oregon, Alaska, and Northern Idaho. Bailey Sales & Associates, incorporated in 1973, will represent Noble Company brands, including Noburst®, Fire-Fighter®, Chloraloy®, ProBase®, ProSlope™, and FreeStyle Linear Drains™ in their respective markets to plumbing, fire protection, and HVAC distributors and their customers.

CBPCA elects executive director

OAKLAND CALIF. — Conrad Asper was recently selected and confirmed as executive director for the California Building Performance Contractor's Assoc. (CBPCA). CBPCA is a leading California nonprofit building performance contractor's association focused on the new home energy efficiency



Asper

industry and helping contractors in the industry become successful.

Triangle Tube names vice president of engineering

BLACKWOOD, N.J. — Triangle Tube announced the appointment of Dr. Lou Vorsteveld as vice president of engineering and quality control.

The company also announced the appointment of Gerry Clisham as director of marketing. Clisham will be responsible for designing and coordinating all marketing materials, maintaining the Triangle Tube website, and establishing marketing plans for all Triangle Tube products and services.



Vorsteveld



Clisham

INTRODUCING THE ACCELERA® 300 HEAT PUMP WATER HEATER: ACCELERATE YOUR SAVINGS!

New!



Energy from nature.

The new Accelera® 300 can extract up to 80% of its energy requirements from the air around it. Heat pumps have been around for decades, but a heat pump water heater is a brand new concept. The Accelera® 300 works like an air conditioner - but instead of dumping the heat outdoors, it puts it into the water.

The Accelera's compressor and fan consume only 1 kWh of electricity to generate the heat equivalent of 3 - 5 kWh. The efficiency of the unit goes up with increasing ambient air temperatures. This ground breaking efficiency redefines what a water heater is capable of, and what savings can really mean!

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Circle 10 on Reader Reply Card

Copper alternative joining systems get an A+

NEW YORK — In today's economy, educational districts and facilities are facing tough choices in providing programs and facilities that offer better educational opportunities at lower costs. When it comes to facilities construction and maintenance,



that decision doesn't have to come at the sacrifice of quality. Lower overall construction materials costs and new technologies can deliver reliable, long lasting facilities that will serve long into the future.

Do you remember standing on your tiptoes for a drink from that water fountain in the hallway? Copper has long been the preferred piping material chosen to deliver safe, potable water for that and many other uses within a school building. For new construction or repairs, copper is still the benchmark for plumbing and heating systems, due to its reliability, long life and overall value. With today's new joining methods, copper can continue to offer school districts a lifetime of safety and value while cutting down on installation, labor and future repair costs.

Alternative "solderless" joining

systems rely on push-connect or press-connect fittings, which are suitable for most plumbing applications and are capable of withstanding the pressure and temperature ranges common to both residential and commercial building systems. Another advantage of solderless joining systems is the ability for "wet repairs," which can be done immediately, without draining the system.

"When it's time to install a copper system, it's not just soldering and brazing anymore," said Andy Kireta Jr., vice president of the Copper Development Association (CDA). "Between the quality of copper and the advantages that these alternative joining systems offer, it's hard not to choose copper for any construction project, especially for facilities as valuable to our communities as schools. We want these facilities to last a lifetime or more, and we need to use quality materials like copper piping to insure that they do."

Robert Hall, who is the national technical consultant for Viega, which specializes in plumbing and heating technology, acknowledges the role of copper in commercial buildings, including educational facilities. "Copper has the track

record, and it's still a mainstay in construction in the U.S.," Hall said. "Copper has always been known for its performance."

The principal advantage of solderless joining for many commercial projects, especially educational facilities, is faster installation. When you have a scheduled project that has a deadline quickly approaching, copper can offer the quick high-quality fix.

"Alternative joining systems bring projects in on time, and there are very few callbacks after the installation," Hall said. "Contractors learn pretty quickly that callbacks hurt the bottom line. Solderless joining systems are attractive to them and to engineers when they are looking for value that will reduce the overall costs."

Glen Urquhart Private Elementary School, in Beverly, Mass., broke

ground in November 2006 and had problems completing the plumbing and heating portion of the project by October 2007 — the scheduled deadline. They turned to an alternative press-connect joining system for speed of installation, while feeling assured that the overall copper system was a product they can rely on for decades to come.

"When you have a flameless system, there is no need for burn permits, especially in renovation and repair applications," Hall said. "It's fast, clean and green. These are highly engineered systems but, at the same time, they are very simple. It revolutionizes joining technology."

The longevity, sustainability and workability of copper remain unmatched when talking about alternative joining systems. "When designers want a building to last 100 years," Hall said, "copper will be their product of choice."

For more info, www.copper.org.

HydrationStation™ GreenSpec listed

SPARKS, NEV. — Haws® Corporation announced the recent GreenSpec listing of their innovative water delivery system, the HydrationStation. GreenSpec, an exclusive online directory of environmentally friendly products, researches and evaluates qualifying products based on how the product addresses key environmental issues and specific criteria.

The HydrationStation was assessed under a wide range of environmental qualities and was listed as an innovative product because it allows users to reduce their dependency on single-use plastic water bottles. On average, the HydrationStation saves more than 37,800, 16.9 oz. single-use plastic water bottles a year from entering landfills.

The HydrationStation has received various accolades from sustainability groups across North America. The product has been on the market for over a year and has been installed in a variety of applications from universities to ski resorts, including the School of the Art Institute of Chicago, City of Rancho Cucamonga, Monarch Mountain Ski Resort in Colorado and more.

Casey Hayes, Haws Corporation's director of engineered solutions, pre-

sented a workshop titled "ANSI Z358.1-2009 Emergency Eye-wash/Showers — Tepid Water in the Workplace" at the Voluntary Protection Programs Participants' Association conference in August. The presentation included information about the newly updated Z358.1-2009 standard, studies on tepid water and solutions for market needs.

Hayes has been with Haws for more than 20 years and has served on a wide variety of industry standard development committees, as well as having authored several hundred trade press articles and papers over the past ten years. As director of engineered solutions he organizes a complete line of custom engineered mixing valves, tempered water solutions, recirculation systems, air-charged systems and alarms and has a wide breath of knowledge and experience with ANSI Standards.

To learn more, visit www.stayhydrated.net.



Casey Hayes

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40%	-7°F	-15°F	-60°F
35%	0°F	-10°F	-60°F

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Circle 11 on Reader Reply Card

ICC signs MOU with U.K. association

LONDON — The International Code Council (ICC) has signed a Memorandum of Understanding (MOU) with the Association of Plumbing & Heating Contractors of England and Wales (APHC). The MOU calls for both organizations to work together to advance the plumbing industry overall, including myriad mutual goals on local, national and global levels.

This union will serve to share APHC and the Code Council's respective and combined expertise to help plumbing professionals advance their trade through education about new techniques and technologies. Another key goal outlined in the MOU is to dramatically enhance perceptions among consumers and businesses of the important role that the

plumbing industry plays in providing proper sanitation to communities throughout their respective countries.

While access to proper sanitation isn't an issue in either of these well developed nations, an additional key focus of both organizations is to join forces towards advancing proper sanitation efforts to assist the 2.6 billion people who do not currently have access to proper sanitation.

"Plumbing is one of the most important industries in the world. Good plumbing saves countless lives every single day. People working in the industry are rightly proud of what they do," said Clive Dicken, chief executive officer of APHC. "However, we face two issues: firstly, in the developed world, peo-

ple have become complacent about sanitation and how their health depends on it; secondly, many parts of the developing world still do not have the luxury of decent sanitation, and 4,000 children die each day because of this."

The APHC and ICC will collaborate on efforts independent of and alongside other sanitation-related organizations to advance global sanitation standards. One example of how the Code Council is already sharing their knowledge towards this goal is their extensive work serving on the committee that is developing the Global Guidelines for



Proper Toilet Design. Working collaboratively with the World Toilet Organization (WTO) and other global sanitation organizations that focus on the global sanitation crisis, this document will serve to standardize the design, installation and maintenance of toilets throughout the world, making it easier for less developed nations to adopt and enforce code provisions.

New rewards at the right time

MINNEAPOLIS — BI, a provider of integrated performance, productivity and engagement solutions, has launched Contractor Rewards, the latest addition to its roster of successful rewards programs. This is the only coalition rewards program to target professional builders, remodelers and contractors in the residential, commercial and industrial construction industries in the United States. Manufacturers including A.O. Smith, Edwards Signaling, Matheson, GE, GAF Materials Cor-

poration and DuPont, among others, have already signed on as participating sponsors of Contractor Rewards.

"These category-leading brands were eager to sign on with Contractor Rewards because it gives them the ability to identify and maintain a persistent voice with their professional trade customers," said John Pierson, division vice president of coalition marketing for BI. "Contractor Rewards gives their customers the ability to combine their point earnings from multiple manufactur-

ers to earn rewards faster, which builds increased brand loyalty and customer satisfaction."

Coalition marketing rewards programs such as Contractor Rewards offer a unique benefit over stand-alone loyalty programs for manufacturers and their customers alike. A participating manufacturer can expect to increase sales by incentivizing purchase of its products, while also gaining valuable marketing insight



about its customers, including brand preferences and other purchasing

habits that may not have been otherwise accessible. Manufacturers can use this information to acquire new customers and to expand relationships with existing customers. For the participating customer, a coalition rewards program offers increased earning power by combining rewards points from different manufacturers.

HOLDRITE changes name, launches website

VISTA, CALIF. — HOLDRITE®, a premier manufacturer of construction products for both residential and commercial markets, announced



that the company, formerly known as Hubbard Enterprises/HOLDRITE, will now be known as HOLDRITE.

"The HOLDRITE name clearly defines each of our product lines under one uniform brand," said Tim McConnell, VP of Sales and Marketing at HOLDRITE. "The name change allows us to continue to leverage our innovative products and services in our constant pursuit of solving customer's problems and accelerating our growth in the marketplace."

In addition to the name change, HOLDRITE has launched a newly redesigned website focused on improved navigation, customer driven content and highly dynamic search capabilities. The site, www.holdrite.com,

features more than 650 products in such categories as pipe and equipment support systems, acoustical plumbing solutions, water heater accessories, and water and firestop sleeving systems.

The website has an all-new look, with updated graphics and layouts, but the real improvements can be seen in the customer-focused pages. Clear navigational pathways have been incorporated to assist HOLDRITE's audiences in quickly finding content and solutions that apply to their specific needs. Advanced product search fields now allow customers to shop for product by model number, material type and application or by entering keywords.

To celebrate the name change, launch of the new website and updated logo, HOLDRITE will be giving away a choice of \$1,000 worth of HOLDRITE product or an Apple iPad. Visit www.holdrite.com and become a preferred customer by October 31, 2010, and you will be automatically entered to win.

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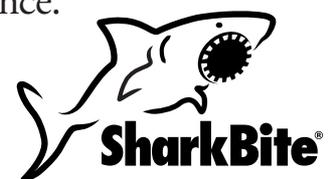
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push-fit fittings and PEX tubing, and a wide range of valves with integral SharkBite connectors.

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Bill Bragg Plumbing wins freedom award

ARLINGTON, VA. — The Department of Defense announced that Bill Bragg Plumbing of San Francisco, Calif., one of 15 employers from across the nation selected to receive the 2010 Secretary of Defense Employer Support Freedom Award. This award is the highest recogni-

tion given by the U.S. Government to employers for their outstanding support of employees who serve in the Guard and Reserve.

Almost 2,500 Guard and Reserve members or their family members, from across the country, nominated employers for exceptional support,

which included providing full salary, continuation of benefits, care packages and even family support to employees fulfilling their military obligation. On behalf of Secretary of Defense Robert Gates, a national selection board comprised of senior defense officials, business leaders

and prior Freedom Award recipients selected the 2010 Freedom Award honorees. The award will be presented to Bill Bragg Plumbing during a formal ceremony on September 23, 2010, at the Ronald Reagan Building and International Trade Center in Washington, D.C.

The 2010 Secretary of Defense Employer Support Freedom Award recipients are:

- Bill Bragg Plumbing – San Francisco.
- City of Irvine Police Department – Irvine, Calif.
- Dollar General Corporation – Goodlettsville, Tenn.
- East Carolina University – Greenville, N.C.
- Food Lion – Salisbury, N.C.
- Franklin's Printing – Murfreesboro, Tenn.
- Hawaii State Government – Honolulu
- Intuit – Mountain View, Calif.
- Legacy Sports International – Reno, Nev.
- Logistics Health Inc. – La Crosse, Wis.
- MERCK and Company Inc. – Whitehouse Station, N.J.
- Michigan Department of State Police – Lansing, Mich.
- Newmont Mining Corporation – Denver.
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- Yerecic Label – New Kensington, Pa.



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Trimble acquires Accubid assets

SUNNYVALE, CALIF. — Trimble has acquired the assets of privately held Accubid Systems based in Concord, Ontario, Canada. Accubid is a leading provider of estimating, project management and service management software and services for electrical and mechanical contractors. Financial terms were not disclosed.

Accubid's family of software products allow electrical and mechanical contractors to analyze their estimates in great detail, including CAD-based estimating and takeoff, and then export the data into project management, accounting and procurement applications. The acquisition of Accubid broadens Trimble's industry leading "BIM to field" solutions for mechanical, electrical and plumbing (MEP) contractors to automate project estimating and management, modeling, detailing, layout and construction.



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Using energy efficiency to run a better business

How industry professionals are adapting to market trends



BY KARA RODGERS

With the market's increasing focus on high-efficiency technology, there's a lot of opportunity for businesses to help homeowners save energy. As consumers seek out energy-saving appliances, a number of companies are finding ways to thrive by adapting to the changing market.

The water heater market is changing in the face of this trend as well. Tankless water heaters have gained popularity over the past several years because they offer consumers both energy savings and a continuous flow of hot water, and solar water heaters have been on the market for several years. There are now even more options available with the new higher efficiency gas storage and electric heat pump water heaters. All these highly efficient options are easily recognized by the ENERGY STAR® label. Be sure to work with your customers to identify their hot water needs and to make well-informed decisions on which unit best meets their needs. Offering ENERGY STAR water heaters is just one part of taking advantage of the trend towards efficiency.

Challenges in the face of change

Although businesses are developing various ways to work within a changing marketplace, industry professionals across the country are encountering similar challenges along the way.

• Meeting the needs of the energy-conscious consumer

Local utilities, state governments and even the federal government are making efforts to educate consumers about the benefits of energy efficiency, and the spikes in energy prices over the past few years have helped to get their attention. "A large majority of our customers are aware of energy savings," said Sean McDonald, the program support manager of New Business Development for Public Service Electric & Gas in New Jersey. "When you have educated customers, you have to have the answers." To meet the needs of customers seeking higher efficiency water heaters, McDonald not only provides the latest models but he also explains the benefits.

Some customers will say that they want to go "green," which can mean a lot of things to a lot of different people. It can mean saving water and other natural resources or it can mean seeking to reduce your carbon footprint. It can also mean being energy efficient, although those same customers interested in energy efficiency may be more motivated by the notions of saving money or energy independence. No matter what your customers' motivations, incorporating highly efficient models and high quality installation into your business can help you meet the needs of these demanding customers.

• Facing resistance to change

Although customers may be seeking energy

savings, many may be resistant to purchasing higher efficiency water heaters once they are faced with the difference in price points. Dick Wilcox, the supervisor of the Design Build Department at Vermont Heating and Ventilating, has seen the struggle firsthand. "Everybody is thinking green. Everybody wants green," Wilcox said. "Unfortunately, there can be cost ramifications associated with green technology."

This resistance to change isn't limited to customers. As installers are finding innovative ways for their companies to adapt to the increased attention to energy efficiency, many are facing resistance from their employees and technicians. Angela Hines, vice president of Rubino Service Company, decided to take the plunge into high efficiency and earn certification from the Building Performance Institute (BPI). "It was originally hard to convince the company that it was the right thing to do," Hines said. "There was pushback at first as to why we were doing this and whether there was too much work involved. I overcame the objections by changing the corporate culture, the way we handle business."

• Meeting the challenges of the new market

In the face of the changing market, some companies are adjusting their business model to provide their customers with energy efficiency. Hines has taken the whole-home approach, selling high efficiency water heaters as only one part of a whole-home solution.

"I knew this was the right thing to do, not only for the customer but also for the future of my business — to be able to take it to the next level," Hines said. "When customers call to have their equipment replaced, we're educating them about the whole-home approach and about having an energy audit done before installing the equipment."

• In-house education and training

You don't have to redefine your business to thrive in the new marketplace and to offer your customers energy efficiency. Taking steps toward self-education and company-wide education as well as understanding newer models can help you sell higher-efficiency, higher-profit units. Part of that education is learning the newer installation and venting techniques and educating your technicians on these changes.

For Vermont Heating and Ventilating, education is a top-down process. "With the new technology, we're trying to stay ahead of the curve," Wilcox said. "We keep a pulse on the industry to see what the newest equipment is." Professionals like Wilcox are making self-education a

top priority by actively seeking information. Keeping an eye on legislation, trade journals, manufacturer's new products and local changes and rebates will help you stay up-to-date on the latest in the industry.

As you educate your employees, you can overcome resistance to change by reminding them of the benefits of incorporating higher efficiency technologies into your business. Not only does it mean more money for the company but it is also an opportunity for them to gain knowledge and for the customer to be more satisfied. In addition to in-house training, a number of businesses are also seeking certification, giving them a competitive edge over other companies in their area. As they invest in education, gaining certification assures their customers of their expertise.

• Customer education

Equipping yourself and your employees with these tools makes it easy to help customers understand the benefits of higher efficiency technologies. Fred Hutchinson, CEO of Hutchinson Plumbing Heating Cooling, breaks the savings down by month for his customers rather than projecting just lifetime savings. "Some models can save seven, eight, nine cents of every dollar spent to heat water," Hutchinson said. "Those are strong numbers, and people hear them."

How the efficiency trend helps you

As you begin to provide higher efficiency technologies to your customers, you will be able to position your company as a leader in your market. Certification and in-house training can help set you apart from your competition by allowing you to offer your customers knowledge they can trust when it comes to energy efficiency.

By keeping an eye on the latest technology, you can also provide your customers with more options. "This is a more dynamic industry. It gives customers more choices, providing different types of water heaters and a variety of venting options," McDonald with PSE&G said. "It gives us more business. It's a win-win for customers and companies. Businesses benefit from higher profit and customers get more choices."

Hutchinson Plumbing Heating Cooling has already seen significant growth since it began adapting to the changing market. "The industry has dropped 24 percent in the past two years," Hutchinson said. "But we have grown by 26 percent. Adopting a whole-home approach

has given us more opportunities and more revenue."

The future looks energy efficient

It's not too late to start bringing energy efficiency into your own business. Education and training are the first steps toward new business opportunities.

"I feel that the green movement

will not be slowing down," Hines said. "My company's already being educated, trained and certified to be able to offer this will put us ahead of the curve and our competitors.

"It does take a lot of time and money to make changes, but in the end, if you believe in it, it will work. During the last year and a half, my business has gone through its biggest growth in our history. Why? Because

we found a way to have homeowners want our products and services, and we have made ourselves one of the select few able to offer them." ■

Kara Rodgers is Natural Gas senior program manager for CEE and directs a three-person natural gas team responsible for guiding and growing CEE's initiatives focused on natural gas savings.



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InSinkErator donates products to Fisher Homes

RACINE, WIS. — InSinkErator® is donating Evolution Series® food waste disposers and instant hot water dispensers to the Fisher House™ program, a private-public partnership that supports America's military and veteran families in their time of need. Fisher Homes are located at every major military medical center and offer free lodging so that family members can be close to military loved ones who are undergoing medical treatment.

"We admire the work of the Fisher House program and are proud to be able to provide a small measure of assistance to our country's veterans and military families," said David MacNair, InSinkErator vice president of marketing. "Understanding that guests are preoccupied with their family member's illness, disease or injury, donating product is an easy way for us to show our appreciation and support."

"We can't thank InSinkErator enough for their donation," said Charlene Hall, manager of the Travis Fisher House. "From start to finish, the entire process was seamless. The instant hot water dispenser is wonderful! It looks great in the kitchen and our military and veteran guests are already putting it to the test."

InSinkErator instant hot water dispensers and food waste disposers

stand up to repeated use and are ideal for community kitchens with a lot of traffic. InSinkErator disposers contain advanced grinding technology, handling more volume and difficult food waste without jams or clogs. InSinkErator dispensers offer filtered, near-boiling and chilled water — great for avid tea drinkers but also helpful when making a hot compress or re-

moving stains.

InSinkErator urges all Americans and American manufacturers to find means to support military families in need throughout the nation. The Fisher House program provides several ways to offer assistance, either through monetary contributions or product donations.

To learn more, visit www.fisherhouse.org.



WPC welcomes UN declaration on water and sanitation

MARMION, AUSTRALIA — Chairman of the World Plumbing Council Robert Burgon welcomed the adoption by the United Nations General Assembly on July 28, 2010, of a resolution recognizing access to clean water and sanitation as a human right.

The resolution is calling on states and international organizations to provide financial resources, build capacity and transfer technology, particularly to developing countries, in

scaling up efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all.

Burgon said that although attention is often focused on Africa and Asia as regions having the biggest problems with lack of water and sanitation, nearly 140 million Europeans still live in homes that are not connected to a drinking water supply, and about 85 million have no access to adequate sanitation.

MCAA, MSCA update electrical safety training materials

ROCKVILLE, MD. — The Mechanical Contractors Association of America Inc. (MCAA) and its Mechanical Service Contractors of America (MSCA) subsidiary have revised the *Electrical Safety Guidelines for Mechanical*

Service Safety Training Kit to reflect recent changes to the NFPA70E National Electrical Code. Production of the revised kit, which educates mechanical service contractors about the protective measures required

while working with electricity, was underwritten by CNA.

The new training kit will help mechanical service contractors educate workers to mitigate the risks associated with exposure to energized electrical conductors or circuit parts. The kit includes a DVD that reviews the electrical arc flash and shock hazards faced by those who perform mechanical service on HVAC units pushing 480 volts or less. The DVD also describes safe work practices and procedures and reviews the use of appropriate personal protective equipment. The kit also includes a set of 20 pocket guides that reinforce key points, a system for documenting training and instructions for accessing a 20-question, multiple-choice test on the topic.

NAOHSM honors professionals, awards scholarships

NEWPORT, R.I. — During its annual conference and trade show, NAOHSM honored several industry professionals for their service. The association also presented scholarships to 12 students interested in furthering their education within the industry. According to Judy Garber, executive administrator of NAOHSM, this year's convention was "a tribute to the men and women who make our industry shine."

At the opening reception Bob Craig was given a Lifetime Achievement Award for his outstanding service and commitment to the industry.

At the awards banquet on Tuesday, the New York Chapter received the Oil Heat Cares Cup for their work at the Lawrence F. Keene American Legion Post in the Bronx. Students from the Alfred E. Smith Vocation Career School worked side by side with professional installers.

The renamed Lou Ehrlich Award (previously known as the Associate of the Year Award) was given to Robert O'Rourke, Westchester chapter. The Technician of the Year Award was presented to Wayne Lawrence, Petro. The Manufacturer of the Year Award was given to Hydrolevel, while Ed Frazier was honored with the Instructor of the Year Award. Al Breda, Sippin Energy, received the Service Manager of the Year Award.

Twelve students were awarded \$2,000 Dave Nelson Scholarships scholarships.

The Rhode Island Chapter honored Judy Garber by presenting her with a basket of products from Rhode Island.

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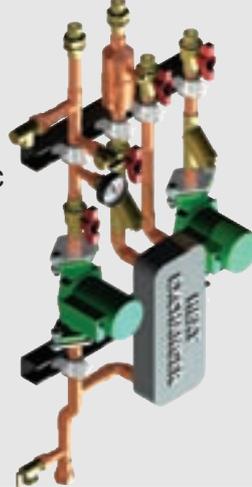


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Patent Pending Components

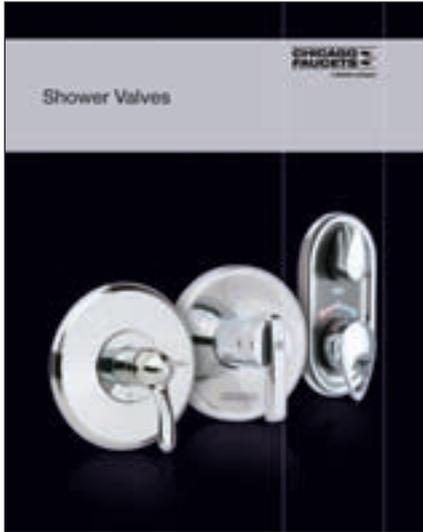


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Chicago Faucets Expands Electronic Lavatory Faucet Offering

Chicago Faucets most recent efforts to unite reliability and durability with electronic faucet convenience has resulted in the E-Tronic® 40. The new line features above-deck electronics for easy maintenance, long-term reliability, and offers a choice of a CRP2 battery or AC adaptor. Uncomplicated installation, easy maintenance and reliability, combined with the water conservation and added hygiene offered with hands-free faucets, make the E-Tronic® 40 an attractive choice for public lavatories.



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The new 420-CP Single Control Lavatory Faucet from Chicago Faucets combines the durability of solid brass body construction with the dependability of a time-tested ceramic mixing valve. Other features include a polished chrome plated finish, metal lever handle, temperature limit stop, volume control and a 1.5 GPM laminar flow outlet. Easy to install and easy to maintain, the ADA compliant Chicago Faucets 420-CP is a great option for any commercial project.

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GRUNDFOS 

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BY DAN HOLOHAN
contributing writer

Quite a Messe!

Next March a group of friends and I will travel to Frankfurt, Germany, to attend the big ISH fair at the Messe Frankfurt. This show, in case you haven't heard, is flashier than Times Square and heaven on earth for anyone in this business.

This will be my eleventh consecutive trip to this show of shows. I know that I won't be bored because there will be more than 200,000 people there, pushing and shoving in that delightful European and Asian way of theirs. I'll work my way through some of the 1,300 booths and drool like a silly idiot over things that we'll probably never have here in America. I'll drink free beer, eat free sausages and pretzels and stare at random naked people in a number of the booths. In

Europe, sex continues to sell.

Messe Frankfurt is the third-largest expo center in the world. It has a total area of 6,221,540 square feet. (Let me hear you say, Yikes!) Its nine halls have a total of 3,463,331 square feet of indoor exhibition space, and there are an additional 1,034,175 square feet of outdoor space where manufacturers can show their stuff. (Let me hear you say sore feet.)

In years past, I always got a kick out of the way the Europeans smoked at ISH. They don't allow this anymore, but back in the day, you could barely see from one end of a hall to the other. It was just this blue tobacco haze. The manufacturers would talk to me while blowing smoke in my face, and their chosen topic was often indoor air quality. They are delightful people, these Smokin' Euros.

On my first visit to the show in March 1991, I was asking a German engineer a question about his equipment when he stopped me with a question of his own

"You are from New York, ja?"

"Ja," I said.

"I thought so. I recognize ze accent."

"Oh, and have you been to our fair city?" I asked.

"Ja, I have," he said. "Und you people are pigs!"

"Pardon?" I said.

"You people heat your buildings mit steam!" he snarled.

"True dat," I said. "However, we have very old buildings in my city."

"You peoples don't know vat olt is!" he said. "You should get rid of the steam. It is nineteenth-century technology. Pigs!"

"But you can't just get rid of it," I said.

"You can if you have ze vill," he said. "Ve got rid of ours!"

"Well, actually, we got rid of yours," I reminded him. "Your daddy may have mentioned that at some point during your upbringing. Remember?"

Ah, how I love making new friends in foreign lands.

As I wandered through the Messe Frankfurt that year, I was delighted to see the steam radiators in the stairwells. They (or we) apparently hadn't gotten rid of all the steam heat. Nope, here were these steel-panel radiators with thermostatic radiator valves and honest-to-goodness steam traps. I took pictures of them

and then followed up on each of my subsequent visits to ISH to see if they were still there. They always were.

Steam was living on in the stairwells of the Messe Frankfurt, even as the exhibitors condemned such antiquated technology. The radiators were pounding out more heat than a menopause convention and all of it was coming up from beneath the city streets. Frankfurt has an active district-heating system, not as large as the one in New York, but similar. Most of the big buildings convert the steam to hot water, using plate-and-frame heat exchangers, but not the Messe Frankfurt.

I had that in mind when I came across an article about the Frankfurt Book Fair, which is also at the Messe Frankfurt. The Book Fair draws more people than ISH, which proves that reading is more popular than plumbing and heating throughout the world. The article told me that they've made some green changes to the Messe Frankfurt this year, and all of those changes made me smile.

For instance, they're doing something about water usage these days because, in much of the world, water is the new oil. It's suddenly precious. They use about 1.85 million gallons of water during the Book Fair (probably close to that during ISH). Messe Frankfurt wants to set a good example, so they're now using rainwater and recycled water wherever they can to flush the toilets, water the plants and supply water to the decorative fountains. They've also switched all their toilets over to the need-based variety, which is foreign to most Americans, but very common in Europe. Euro-toilets have two buttons — a small one for a small pee flush, and a larger one for those Big Country Dumps. This change alone is supposed to save nearly a half-million gallons of water during the typical fair. Nice.

There are many "toiletens" at Messe Frankfurt, and when you're using one of them, you will often be surprised by a cleaning woman. She will suddenly appear to swab at the urinal next to the one you're using. And, yes, she does peek. She also expects a tip on your way out. It takes a bit of getting used to (the peeking, not the tipping), so my advice is to tip, but only if she's not smirking.

They're also doing something good about waste materials at Messe (Turn to Some old... page 24.)

For instance, they're doing something about water usage these days because, in much of the world, water is the new oil.

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Some old habits die hard

(Continued from page 22)

Frankfurt. Germany is huge on recycling, and you can see the bins for this on the streets. There's one bin for paper, another for plastic and separate bins for green, brown and clear glass. People are very conscientious about this. The same now goes for those who visit the Messe Frankfurt, so I wish them the best.

I was doing a seminar not long ago in a LEED-certified building here in America. This place had separate bins in the dining area for the trash, and everyone was very careful with where they put what.

This being a nighttime seminar, I got to hang out for a bit afterwards to chat with some of the folks. I was packing up and shooting the breeze when the cleaning crew showed up. They were from an outside com-

pany. One of the cleaning people took all the bins with all the carefully separated recyclables and dumped the whole works into one big plastic trash bag, which he then tossed into the back of a van. I figured he was

couldn't have done that back in the days when everyone was smoking as if they wanted to die right then.

Hall 10, which is the building that hosts most of the controls manufacturers and the little-valve people,

I was doing a seminar not long ago in a LEED-certified building here in America. This place had separate bins in the dining area for the trash, and everyone was very careful with where they put what.

going to leave that on the side of some major American interstate highway.

Old habits sure die hard, don't they?

At Messe Frankfurt, they installed dimmable, energy-saving lights everywhere, and they upgraded the ventilation system. Too bad they

now has a photovoltaic plant that can make up to 300 kilowatts of electricity on its roof. They say that's enough to power all the booths in that hall. I suppose the sun has to be shining, though, and I don't recall that ever happening during my 10 trips to ISH, so you might want to bring some candles if you're plan-

ning a visit (smokeless ones, of course).

As for the heating at Messe Frankfurt, they've made some major changes to that as well, and I'm wondering if anyone at next year's ISH will notice.

First, they switched over to fast-rolling doors, which they say do just that. Everyone will have to move a lot quicker next March so as to keep in the heat. Scurry!

They've also replaced their old poorly insulated (by their standards) steam mains with new vacuum-insulated steam mains. That's about as high-tech as it gets when it comes to moving steam and, in the buildings that had those steam radiators, they now have warm-water radiators.

For me, it will never be the same.

I'm going to see if I can find my German engineer buddy when I get back to Frankfurt. I want to congratulate him on getting rid of the last bit of the steam — and this time without our help. ■

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BY BRISTOL STICKNEY
contributing writer

Instant hot water recirculation – innocuous energy thief

Instant Domestic Hot Water (DHW) recirculation has been around for a long time. In buildings where the DHW source is a long way from the hot water fixtures, a circulator pump is used to force hot water from the water heater through the hot water supply pipes to the base of the fixture and then back to the water heater through a “recirc return” pipe. Originally, this was done mostly for convenience, so that the user did not have to wait for all the cold water stranded in the supply pipe to empty itself down the drain before the hot water finally arrived.

Over the years, this also became a standard method for saving water and, for that reason, is required by code in many locations. In the past it was common practice to install a continuous duty circulator and plug it in 24/7. In recent years it has become obvious that, using this method, water is saved by throwing energy at it (both heat and electricity). So it is worthwhile to rethink this situation by controlling both the waste of energy and the waste of water.

This issue has come up in nearly every recent solar hot water installation in which I have been involved. Sooner or later during the normal operation of a solar hot water heater, someone will notice that the solar hot water tank does not seem to store heat very well. The solar heat seems to disappear from the tank overnight, causing the backup heater to run in the morning. This is always a surprise and a disappointment to the owner or installer since the solar storage tank is very well insulated and costs more than a conventional DHW tank. Rather than “crossing your fingers” and hoping that this will not happen, it is better to forestall the situation by including an upgrade to the DHW recirc system as part of the solar heating installation. Offering this as an option will at least let your customers know that you are energy aware and have their best interests at heart.

Of course, with a conventional water heater the backup burner must work harder to make up for the heat loss as the hot water circulates constantly around the building, resulting in higher fuel bills. The electricity consumed by the circulator and other electrical elements causes fuel to be burned and water to be consumed at the electric power plant. In New Mexico, for example, the majority of that fuel is coal, and the water consumed at the power plant is something like $\frac{3}{4}$ of a gallon for every kilowatt hour generated. So the idea that we can save water by throwing electricity at it is probably mistaken if the electrical consumption is not carefully controlled. With this gentle reminder that in the world of energy there is no free lunch, let’s take a look at some of the upgrades that are possible in a DHW recirculation system to eliminate energy waste.

Piping considerations

In new construction, the hot water supply and recirc return can be designed to minimize heat loss and maximize pumping efficiency. In a retrofit, sometimes the improvements are more difficult to install, but should always be seriously considered.

Pipe insulation. Both the hot supply and the recirc return must be well insulated, especially in locations where ground contact or cold air temperatures exist. I have seen many installations where the pipe insulation has been forgotten on the recirc return line.

Balanced flow. When a single recirculator is used on

several parallel loops to various parts of the building, the flows must be balanced just like the loops in a hydronic heating system. Even a well-controlled recirc pump will waste energy pumping through an unbalanced piping system as most of the flow will go through the shortest (and hottest) loop. A balance valve placed on the recirc return pipe under each fixture can be well worth the extra effort.

Multiple circulators. In larger buildings, energy savings may be accomplished by using several different circulators instead of a single circulator feeding parallel loops. Both heat and electricity can be saved when each pump is controlled to provide hot water recirculation only to the occupied part of the building.

Control systems

The most common upgrade to any DHW recirc system, new or existing, is electrical controls. Here is a list of typical controls I have added in recent years in order of most common to least common.

Temperature setpoint switch. The easiest and cheapest way to limit the run-time of the recirc pump is to put a sensor on the recirc return pipe that turns the pump off when hot water comes back from the building. This can be a snap-disc, a cap-tube or an electronic set point controller. When the return pipe cools off, the pump

With this gentle reminder that in the world of energy there is no free lunch, let’s take a look at some of the upgrades that are possible in a DHW recirculation system to eliminate energy waste.

runs only until hot water arrives back in the mechanical room and then pauses until the pipe cools again. For proper control it is important that the circulation loops be balanced.

Timer switch. It is very common for a timer switch to be used to allow the recirculation pump to run only during critical occupancy hours. The timer switch is often used along with the set point control. The biggest drawback of the common timer switch is that the clock must be reset after a power failure.

Manual demand switch. A momentary contact switch that resembles a door bell button can be placed at each hot water fixture. This is for users who are energy conscious and don’t mind “asking for instant hot water” by pressing the button. Both wired and wireless button systems are available these days.

Automatic demand switch. An automatic switch such as an Infrared Red (IR) motion detector or IR beam switch can be installed near each hot water fixture. This type of sensor uses a relay to “press the demand button” whenever it senses that somebody is nearby. A timer or setpoint switch is used to turn off the circulation after a reasonable amount of time.

(Turn to Ensuring proper... page 30.)

In the past it was common practice to install a continuous duty circulator and plug it in 24/7. In recent years it has become obvious that, using this method, water is saved by throwing energy at it (both heat and electricity).

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BY ELLEN ROHR
contributing writer

Welcome aboard, new bookkeeper!

Congratulations on your new job as bookkeeper for a PHC company. Here is some advice and a few surefire tips for making the most of your upcoming accounting adventures. (You're welcome.)

You are probably walking into a financial mess. You might be holding the bag for someone who didn't have a clue when it came to accounting. Or your predecessor may have deliberately screwed things up to cover up his or her embezzling. Or maybe she or he did a fine job and just decided it was time to move on, move away or have a baby. Most likely, however, you are walking into a big mess. I encourage you to embrace your new position and take advantage of the opportunity at hand. You are capable of fixing that mess. If you are willing and like to do bookkeeping, you can learn what you need to know to get the financials right. You can do it — if you want to. If you do, you will expand as a financial professional. This experience could create a quantum leap in your skills and your career.

Don't badmouth your predecessor or anyone who is currently screwing up the accounting. Leave blame out of the equation. Don't fuss about why or who created the mess. It doesn't help. And it could be that your new boss, the owner, is the culprit. The boss is ultimately responsible for every result in the company. It won't do you any good to start out by finger pointing. Start by observing the lay of the land — and the condition of the financial reports.

Request an organizational chart. If your boss doesn't have one, you may be able to create an informal one. Find out to whom you report. Find out who will review the financials and your work. This is important so that you can be of service and so that you can protect yourself and the owners. You are responsible for keeping track of the money, honey. Be respectful and aware of your responsibilities. So, be sure to do the following:

- Nail down the expectations. If there isn't a position description, put one together. Clarify your position with the person senior to you on the org chart. What is it that you must prioritize daily, weekly, monthly?

- Make sure that all data is entered correctly for...
 - Sales
 - Customer payments
 - Deposits
 - POs
 - Paying bills
 - Entering credit card charges
 - Paying credit card charges
 - Entering payroll (Do yourself a favor and sign on with a professional payroll service!)
 - Entering and paying sales tax
- Make sure the financials are current and accurate by a certain day every week.
- Review the Financial Quick Check (a weekly dashboard report showing key numbers) with the owner once a week. (I can send you a sample Financial Quick Check if you request one on our Contact Us page at www.barebonesbiz.com.)
- Review the Month End Checklist by the 10th of the following month, every month.

Make monthly adjusting entries as determined by the owners and the CPA.

- Assemble the Year-End Checklist, starting in October each year and enter the proper Year-End Journal Entries with the CPA by January 31 every year.
- Keep the Bookkeeper's Manual up to date with written

procedures for all data entry and required reporting.

- Find stable data. Start digging into the financial reports. Follow the flow of debits and credits through the accounting system. Discover what is right. (Yes, not everything is broken.) Celebrate what is accurate and build on it.

- Fix the easy stuff first — and fast. Fix things NOW, in this month, and then figure out how to keep them right and current. Don't go backwards. Don't try to make every past month right. You could remain tragically behind. Get current quickly. Merge, recode, reclass the simple stuff first and isolate the "weird" stuff that you don't know how to fix.

- Leave breadcrumbs. As you make adjustments, leave lots of notes for yourself and others who may wonder what the heck you are doing. You may not fix everything properly the first time through. It is helpful to be able to easily identify your adjustments, in case you have to redo them or explain them. You can search the Memo field in QuickBooks, which is helpful.

- Connect with the CPA. Schedule a meeting with your boss, the accountant and his or her right-hand person. Sometimes the CPA's "second banana" is savvier with actual accounting than the CPA is. Your overarching goal is to nail down every balance on the Balance Sheet — current and accurate — by the end of this year. (That marks the end of the mess and the springboard to your next opportunities.)

Help a brother or a sister out. Take on your new position with an attitude of adventure and enlist the help and support of the people you work with. They have the answers to a lot of your upcoming questions. Let them know that you are someone to be trusted and that you are committed to their success. The current accounting systems are probably causing team members to do too much work for no real reason. As you streamline the systems, you are going to make new friends. And it always helps if you bring donuts now and then.

Protect yourself and the owners. Use written checklists and procedures. Flesh out the manual for your position, one page, and one procedure at a time. BONUS: If you cross train others to use the written procedures you are free to take a vacation now and then.

"Lead up." Yes, you are willing to do whatever accounting and office tasks you are asked to do by your boss. Your boss is "the boss." You can "lead up," however, by politely challenging the requests now and then. Following are some of my favorite responses to a "concerning" request, such as "I want a spreadsheet that shows how many 1/2-in. gate valves we have sold since 1992."

- I'm willing to do what's needed. Can I ask a few questions about your request?

What do you want this information for? Who will be reviewing it and how often?

What would we give up if we didn't create this report? Can we get the information elsewhere?

- Is the information essential or just interesting?
- How often do you want this information? Is it a one time request or do you want this to become part of the weekly or monthly reporting?

- Is this information required for compliance, for the IRS or the tax commission?

And, here is the big gun question:

- How does this help us improve profitability or sales or cash flow?

(Turn to *This is your chance...* page 30.)

Don't badmouth your predecessor or anyone who is currently screwing up the accounting. Leave blame out of the equation. Don't fuss about why or who created the mess. It doesn't help.

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Ensuring proper performance includes monitoring, verification and maintenance

(Continued from page 26)

The manufacturers of hot water recirculation pumps now offer many of these controls and features either built into their pumps or as add-on control packages. Some are fairly sophisticated, with sensors and timers built into the pumps and electrical connections for a demand switch. If you haven't seen this equipment at your local supplier, ask them about it. Good recirc control is just as important for non-solar as it is for solar water heater systems for peak energy performance.

Circulator pumps

When modifying these systems, sometimes the existing or originally specified recirc pump will just not do the job. This is most often the case when a continuously circulating system is modified to include a demand switch. In a demand switch system, the circulator only runs for a minute or two. In that short amount of time, the user expects the hot water to arrive without delay. If there is a long pipe run and/or high heat loss (typical of older retrofits) a larger circulator pump may be needed to provide the flow and pressure necessary to deliver the goods on time.

For example, in a recent retrofit solar heating system, a continuously circulating Taco 006 bronze pump was modified with demand buttons and a timer relay to minimize its run-time. The owner reported that it took seven minutes for the hot water to arrive at the far end of the house. Since it was a retrofit situation, with all the piping under a concrete slab floor, the plumbing and balancing could not be changed easily. When a Taco 009 bronze pump was substituted the hot water arrived in less than a minute. Since the 006 pump originally ran for hours, and the 009 pump runs only minutes per day, the electrical savings per day is substantial, and the heat savings in the solar water heater tank is easily evident. A good solar storage tank will indeed provide hot showers in the morning following a sunny day if the heat is not pumped out of it all night.

Final notes

At SolarLogic, we are developing integrated methods of design, installation, control and monitoring for Solar Combi heating systems based on our field experience from recent years. Our goal is not only to assure that a working system is

installed but also that its proper performance can be monitored, verified and maintained over the years.

These articles are targeted toward residential and small commercial buildings smaller than 10,000 square feet. Brand names, organizations, suppliers and manufacturers are mentioned only to provide examples for illustration and discussion and do not constitute any recommendation or endorsement. Calculations and estimates are for example only and are not intended for any particular design application.

Special thanks to Dr. Fred Milder for original economic insights included in this article. ■

Bristol Stickney has been designing, manufacturing, repairing and installing solar hydronic heating systems for more than 30 years. He holds a Bachelor of Science in Mechanical Engineering and is a licensed Mechanical Contractor in New Mexico. He is the Chief Technical Officer for SolarLogic LLC in Santa Fe, N.M., where he is involved in development of solar heating control systems and design tools for solar heating professionals (visit www.solarlogicllc.com for more information.)

In this series of articles, I have been making the case that the key ingredients for solar/hydronic design and installation can be divided into six categories, listed below, roughly in order of their importance.

1. RELIABILITY
2. EFFECTIVENESS
3. COMPATIBILITY
4. ELEGANCE
5. SERVICEABILITY
6. EFFICIENCY

The success of any solar hydronic home heating installation depends on the often-conflicting balance between any of these six principles. Finding the balance between them defines the art of solar heating design.

This is your chance to grow & be good

(Continued from page 28)

Be respectful. Sometimes, however, you are required, in your professional position, to challenge the requests. WARNING: Lead up, don't nag. Use tact and help your boss make good decisions. Many bookkeepers get fired because they forget who the boss is and fail to demonstrate their value to said boss.

This is your chance to grow, to get really good. Make the books

Use tact and help your boss make good decisions.

right and learn how to be a world class bean counter. The opportunity is in the mess! It doesn't take much skill to maintain a rock solid accounting program. The mess is where the game is! It's a Rubik's cube, crossword puzzle and Sudoku rolled into a fourth-and-goal pressure situation. Have fun and go, go, grow with it!

I am always here to help! I make a limited number of free half-hour consulting calls every month. Go to www.barebonesbiz.com, click on the Ellen Live button and follow the instructions for setting up a free call. And while you are there, fill in your name and e-mail address on the home page and we'll send you a free download for my best-selling book, *Where Did the Money Go?* It's a basic accounting book that explains the Balance Sheet, the Profit & Loss, double entry accounting and lots more.

I wish you a warm, "Welcome aboard!" May this be a rockin' great career move for you. ■

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BY RICHARD DITOMA
contributing writer

Basic truths about your costs

There are four basic truths about business: 1. The reason you go into business is to attain your American dream.

2. Before you start your entrepreneurial enterprise and every day during its existence you will incur costs to be in business.

3. You are solely responsible for the success or failure of your business through the protocols you employ in your enterprise.

4. You don't control the economic environment.

The fourth truth is evidenced by the current recession, which was caused by flawed decisions that were made long before the recession took its devastating grip on the economy in 2008–2009. It lingers in 2010 and is wreaking havoc upon businesses. You have probably had to make adjustments to your business because of it.

Your first choice of adjustment was probably to rein in the amount you spend on your business costs. That's the

same thing you would do to your personal expenses when your income is lowered. It's just common sense. But this obvious adjustment is ignored by people in government, in both elected and appointed positions.

"Taxation without representation" was "the straw that broke the camel's back" and led to the American Revolution, as well as to the creation of the greatest nation on the face of the earth. The founders of our great nation set up our government to deliver certain necessary services such as defense, etc. so that "we the people" could enjoy "life, liberty and the pursuit of happiness."

Elected and appointed government officials seem to think that increasing deficits and raising taxes is the solution to our current economic malaise. These practices only exacerbate the problem. The economy can only grow when consumers have confidence in their economic futures and money in their pockets. Increasing deficits
(Turn to Government... page 34)

"Taxation without representation" was "the straw that broke the camel's back" and led to the American Revolution, as well as to the creation of the greatest nation on the face of the earth.

Portion attributable to Government

Expense Item	Total	Partial	Explanation
Salary		✓	Due to minimum wage & taxes
FICA Matching Fund			Due to government mandate
Workers' Compensation Insurance	✓		Due to government mandate
Unemployment/Disability Insurance	✓		Due to government mandate
Liability Insurance	✓		Due to government mandate
Vacation Pay		✓	Due to government mandate & taxes
Holiday Pay		✓	Due to government mandate & taxes
Health Insurance		✓	Due to government regulation
Retirement Pay		✓	Dependent on type of program
Vehicles & Vehicular Equipment		✓	Sales tax & overall costs due to manufacturer's cost of operation subject to government taxes-mandates-regulations etc.
Vehicular Financing		✓	Due to government regulation
Vehicular Insurance	✓		Due to government mandate
Vehicular Fuel		✓	Each gallon has taxes on it
Vehicular Repairs & Maintenance		✓	Sales tax & overall costs due to auto technician's cost of operation subject to government imposed mandates.
Vehicular Inspections & Registration	✓		Due to government mandate
Office/Shop Rent		✓	As property taxes increase rents increase.
Office/Shop Utilities & Maintenance		✓	Due to Tariffs
Office Supplies & Equipment		✓	Due to sales tax & gov't imposed mandates.
Telephones		✓	Due to Tariffs
Advertising		✓	Overall costs due to advertising company's cost of operation subject to gov't imposed mandates.
Accountant Fees		✓	Due to government mandated record keeping
Legal Fees		✓	To keep in line with government mandates
Licenses	✓		Due to government mandate
Education		✓	To keep in line with government mandates
Bank Charges		✓	To keep in line with government mandates

Figure 1

J-3080 Jet-Set

Get higher flow without a trailer.

Clear stubborn grease stoppages, sand, sludge and ice. A 12 gallon buffer tank gives the safety margin needed to use the J-3080 on larger more difficult lines.

- 20 hp Honda® engine with electric start drives 3000 psi, 8 gpm pump.
- Vibra-pulse® on demand, helps the hose on long runs and around tight bends.



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or visit www.drainbrain.com.

J-3055 Jet-Set

The most power you can get without a holding tank.

The powerful J-3055 has the thrust to pull the hose down long runs, the pressure to cut through tough stoppages, and the flow to flush them away.

- 3000 psi, 5.5 gpm pump and 16 hp Briggs and Stratton Vanguard® engine with electric start.
- Removable 300 ft. hose reel mounted on a heavy-duty frame with four pneumatic tires.



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J-2900 Gas Jet

Big machine features at a bargain price.

An economical alternative to the larger gas jets, the J-2900 is lighter and more maneuverable yet maintains the same pressure and flow rate as other jets in its class.

- 13 hp Honda® engine connected directly to a 3000 psi, 4 gpm triplex pump with Vibra-pulse® on demand.
- 200 ft. capacity hose reel with reel brake mounted on a heavy-duty frame with two pneumatic tires.



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J-2512 Typhoon Trailer Jet

Big cleaning power in a tough new package.



Blow away blockages in big lines and long runs. The Typhoon delivers 12 gpm at 2500 psi to blast lines clean of grease, sediment and debris. A 200-gallon holding tank carries enough water to handle remote applications where access to water is limited.

- 400 ft. capacity variable speed jet hose reel and 150 ft. capacity supply hose reel.
- Electric brakes, safety strobe light, rear fold-down stabilizer jacks, retractable hose guide arm, and antifreeze system.

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J-CSN Chain Saw Nozzle

New root cutting nozzle

Rip through roots with General's new Chain Saw Nozzle. Lengths of chain can quickly and easily be switched for different diameter pipes. Spins at up to 10,000 RPM.

- 1/2" nozzle works well in combination with the 12 gpm Typhoon trailer jet to clear 4", 6", 8", and 10" lines.
- 3/8" nozzle is available in 4, 5.5 and 8 gpm models to clear 2", 4", 6", and 8" lines.



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Grease Relief!

The J-1450 Electric Jet cuts through grease as no snake can.

That's because it uses a powerful stream of high pressure water to cut through soft stoppages and ice, completely cleaning the drain walls along the way.

Big jet power comes from General's unique three-piston pump design that delivers full time, full pressure cleaning action – even in our Vibra-pulse® mode. That's important since Vibra-pulse is what you need to get the hose around tight bends and propel it down the line. The J-1450 is also compact and portable. By simply removing the hose reel, you reduce its profile from 31" to 14-1/2" – small enough to fit into a car trunk! A slide-out handle and big 8" wheels make it easy to get to the job site and back. And each jet comes with an instructional video to help you operate it quickly, easily and safely. For more information, call the Drain Brains® now at 800-245-6200 or 412-771-6300.



A convenient slide-out handle makes this machine really portable.



The hose reel detaches in seconds, so it fits easily into small spaces.

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Government does not belong in your business

(Continued from page 32.)

lowers confidence. Raising taxes gives consumers less money to spend.

In turn, fewer people are employed by businesses. Just look at the high unemployment rates in the United States today. The stimulus dollars government threw at the problem are obviously not stimulating. Under these conditions, the chances the economy has of growing are minuscule. The opportunity for our citizens to achieve their American dreams is non-existent under these practices.

“We the people” are now once again taxed without representation or mercy. We pay taxes on our income. We pay taxes on our spending via sales and use taxes. We even pay taxes after we die, through our estates. Even those Americans who do not make enough money to be taxed are taxed. Every item or service they purchase is taxed indirectly because the prices are inflated due to capricious government tariffs, mandates, rules and regulations imposed upon business.

Government, through the Constitution, was set up to serve “we the people,” who are the employers of the people in government. They are supposed to be serving our needs. But many people in government have usurped more power than the

Constitution allows and have decided to rule us rather than serve us.

The embers of the current recession were sparked when foolish government protocols removed the safeties in the mortgage lending industry. This created a bubble that was destined to burst. Because mortgages were given to almost anyone who applied, homes were built for people who could not afford to pay for them. This inflated the selling prices of homes, which increased the money owed on the mortgages. When the bubble burst,

it also affected people who could have afforded their homes if the bubble wasn't created in the first place. Government decisions that impose detrimental results are anti-productive and injurious to “we the people.”

In business, you incur costs that are necessary for the delivery of excellence to consumers. The acceptance of the responsibility of those business costs should be left up to you since you are taking the risk by

being in business.

Government does not belong in your business. Government can and probably should make some regulations. But those regulations should be kept to an absolute minimum. Cumbersome government taxes, mandates, rules and regulations that are political, capricious and only serve to raise funds for unnecessary government spending sprees are detrimental to our national economy. They make conducting business difficult. Just look at our current national economic malaise.

Figure 1 shows typical PHC contracting business costs that are affected by government tariffs, mandates, rules and regulations. There are 25 expense items on this

that if they want lower prices, more money in their pockets and a better economic future they should vote for people who really want to serve the public with integrity in a financially prudent, intelligent and equitable manner.

Whether “we the people” are Democrats, Independents, or Republicans, whose mindsets can range from liberal to conservative, the common denominator is the fact that we are all Americans who must work hard for our financial security.

“We the people” need public servants who can help us achieve the ideals our forefathers intended when they wrote of “life, liberty and the pursuit of happiness.” Public servants that hinder the goals of “we

USA Contractor from	# of Tasks Done	Hours Spent Doing	Material Cost	Revenue for Tasks With Flawed Pricing Method		Revenue Realized for Same Tasks Using Coach DiToma's Contract Pricing Method		
				TYPE	Revenue Amount	Revenue Amount	EXTRA \$	EXTRA %
South East	534	1687	\$32,889.47	Flat Rate	\$287,328.89	\$378,581.25	\$91,252.36	31.76%
West Coast	41	85	\$7,480.02	T & M	\$20,179.07	\$28,331.25	\$8,152.18	40.40%
North East	348	432	\$16,022.85	T & M	\$86,028.82	\$147,369.05	\$61,340.23	71.30%

Figure 2

list. You may have more or less, dependent upon your costs. My thought is that these are the minimal cost items that you incur in the operation of your business. Six of the items (24%) are totally attributable, while 19 of the items (76%) are partially attributable to government mandates, tariffs, rules and/or regulations.

It's easy to imagine that more than 50% of your operational dollar costs could be caused by government mandates, tariffs, rules and regulations, many of which are not needed. As an example, it is not fair that business owners must start negotiating salaries at the minimum wage rather than \$0.00. Another example is the inequity imposed upon businesses to match FICA funds (7.65% of wages) because government didn't structure and secure Social Security and Medicare funds intelligently.

Inform your clientele that inflated prices of items and services they purchase are greatly attributable to government impositions on business. Arbitrary government mandates, tariffs, rules and regulations are caused by government malfeasance, ineptitude, and/or politically energized spending sprees on items, causes and agencies the American public does not need or want.

Suggest to your clientele

the people” should not be allowed to continue destroying the greatest nation on earth. Inform your clients, family and friends about the true reason why prices are where they are and why the economy is in its current condition. Urge them to vote on Election Day for the right people nationally, statewide and locally.

When the people in government need more money due to their unnecessary spending habits they reach into our pockets. You as a business person don't have that ability. You must constantly monitor and control your true costs of operation in a financially prudent manner. You must develop pricing protocols that give you an opportunity to attain your goals.

Figure 2 shows three contractors I am currently coaching that have made adjustments to their busi-

(Turn to DiToma, page 42)

Richard P. DiToma is a contracting business consultant and active PHC contractor with over 40 years of experience in the PHC industry.

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Fourth quarter economic outlook appears increasingly foreboding

With the mid-term election battle lines between the opposing political parties drawing ever tighter, it appears that the vortex of economic issues will become the decisive touchstone of the confrontation's outcome.

Although almost two months of adversarial campaigning still lie ahead, it is becoming increasingly clear that a potential year-end taxation avalanche will be the main point of contention.

Business in general, and privately owned companies in particular, have already made it clear that survival and profitability are their main concerns. They're turning a deaf ear to administration plans for more hiring.

What the current dominant political power structure fails to understand is that private businesses, especially, don't consider job recruitment an entitlement. As the economy teeters on the edge of disinflation for the first time in 70 years, the 65% of U.S. employables are dependent upon ownerships' decision-making.

Based on the Obama administration's policy priorities, the government's attitude is viewed as indifferent to that sector's critical issues, if not downright hostile to small business survival. This entrepreneurial group, made up of manufacturers, distributors, retailers, contractors and a variety of end-users feels increasingly isolated by a combination of government bureaus, swelling their ranks with high-paid jobs and benefits, and large corporations, with their bevy of lobbyists protecting relevant vested interests.

At this point, these entrepreneurships are looking with a jaundiced eye to the near-term future. In most cases, they are circling the wagons and getting ready to make a year-end stand in preparation for the coming showdown.

A tidal wave of new taxes and regulations are expected by practically everyone. Generally, all view 2011 with great trepidation, and are not counting on a change in the political power balance to alleviate this situation. Unless the "2003 Bush tax cuts" are extended for another year, at least, expect a massive sell-off of inventories and a minimal replacement to escape the subsequent, confiscatory New Year taxes that are beckoning.

Disinflation — an unlikely U.S. economic phenomenon

At first glance, a long period of declining costs and prices would seem a welcome change from the ravages of galloping inflation. This destructive by-product of the eight recessions that have befallen the U.S. economy since the "Great Depression" has instilled a consistent fear of inflation as the high-powered American economy surged in multiple recoveries spanning 65 years.

Although many consider this change of monetary direction a blessing, disinflation carries as many pitfalls, though different, as rampant inflation. The best example is the dormant economic status quo that has encapsulated the Japanese economy for the past decade. Despite a recent revitalization of Japan's exports, the relatively high value of the Japanese yen has made it difficult for Tokyo to be competitive. With interest rates near rock bottom and prices in a freeze or going lower at some levels, Japan's economic growth at home and abroad has been dormant.

Therein lies the current problem for the U.S. economy. With consumer demand the main driver of America's growth since World War II, greatly subdued manufacturers, distributors and retailers find it next to impossible to

pass their increased costs on to the next level in the "food chain."

This is particularly difficult for manufacturers of fabricated metals and other large fabricators of components dependent on copper, iron ore, stainless steel, aluminum, etc. Their prices are volatile within an emerging global economy that makes higher costs of such commodities, especially oil and natural gas, an exception in their tilt to greater expense. This volatility expands with the turbulence of the dollar's ups and downs.

With hundreds of thousands of American businesses squeezed between the double-edged sword of increased federal government regulations and taxes on the one hand and inability to recover resultant cost increases from customers on the other, it's no wonder that private sector businesses, especially, have closed their doors to all but the most urgent personnel needs. The current turgid employment situation is one that the U.S. will be stuck with for a long time to come.

Global manufacturing — construction confronts shrinking numbers

Although the world's gross domestic product has grown dramatically in the past 30 years, the percentage of employees involved in manufacturing and construction has declined substantially.

Among a leading trio of developed nations— the U.S., Japan and the United Kingdom — a shrinking manufacturing base continues to be the main driver of these nations' economies.

The percentage of employment engaged in manufacturing and construction, as a percentage of gross domestic product, has declined steadily in the period between 1980 and 2009. This is caused by greatly increased productivity, as well as by greater diversification in first world countries. Even more of a factor has been the industrialization of the Southeast Asian quadrant, to which an increasing segment of the world's manufacturing and construction activity has shifted.

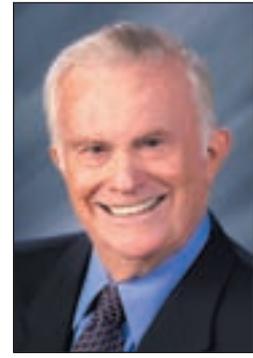
China, barely coming out of the starting gate 30 years ago, is ready to pass the U.S. as the world's leading manufacturer by 2014, while India, the only other global nation outside China belonging to the one billion plus population club, is gaining impressive momentum.

The U.K., where the industrial revolution was founded in the early 1800s, has shifted its focus to the financial, services and technology sectors. This has resulted in the cutting in half of manufacturing and construction personnel from 37% of GDP 30 years ago to less than half that number today.

In the U.S., manufacturing/construction activity has dropped from 31% of GDP in 1989 to 20% in 2009. A similar situation prevails in Japan, where manufacturing/construction employment has also come down materially, from 35% to 26%. It's also the last of these three nations that still retains a significant amount of agricultural activity, as evidenced by a GDP percentage that is substantially higher than that of the U.S. and the U.K.

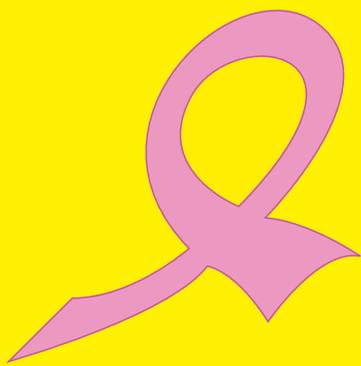
Although China is booming industrially, that sector makes up only 33% of its manufacturing-construction employment percentage in the run-up to second position to the U.S. in the world's gross domestic product. India, which is now slated to join China on the world stage big-time, is as yet only employing 16% of its massive population in its manufacturing/construction sector. This is an

(Turn to Renewable Energy... page 42.)

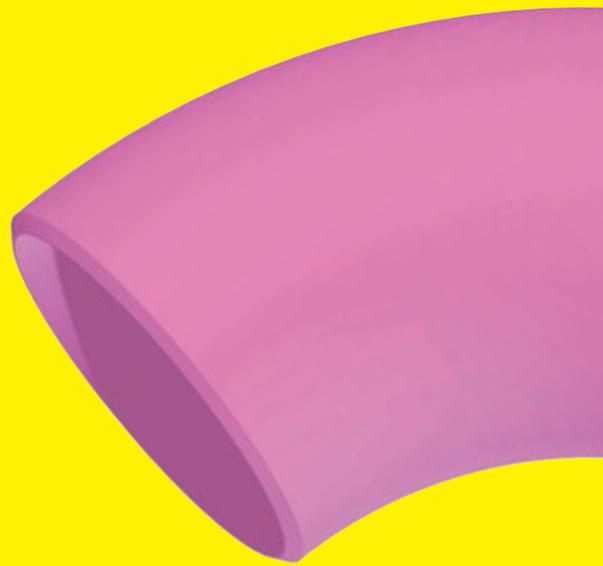


MORRIS BESCHLOSS
PVF & economic analyst emeritus

At this point, these entrepreneurships are looking with a jaundiced eye to the near-term future. In most cases, they are circling the wagons, and getting ready to make a year-end stand in preparation for the coming showdown.



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BY GREG NIEMI
guest writer

The value of the independent is worth every dollar

The recession has pressured many contractors into thinking that homeowners are only hiring the lowest bidder for plumbing, heating, cooling and electrical home services. This is not true! We do know, however, that the competition for business has increased as others have entered the market. Competition has also driven consolidators (e.g., national service companies, utilities and big box retailers) to seize the opportunity to buy out contractors who are burned out and panicked about what their futures hold.

Under these market circumstances, service can and, most likely, will suffer, leaving customers with a bad impression of our industry. Where does that leave high performing, reliable, independent residential service contractors? It puts you in a great position to strap on your cape and be the hero in your marketplace. Save the day and win customer loyalty by bringing value through their front door.

As president and CEO of Nexstar® Network, I have the privilege of serving hundreds of independent home service companies across the continent; providing experienced coaches, surefire systems and incredible peer connections to help them lead and grow their businesses. One of the ways we help them do that is by teaching one of the founding principles of our organization: Build your business around quality and value, not by trying to be the low-price leader.

Here is some good news for the independents. According to Web Visible, 83% of consumers choose to patronize a small, local independent business over a larger chain. Consumers are smart enough to know that much of the money they spend stays in their community in the form of employee wages, vendor services and more. They like to work with independent contractors who service their neighborhood, and they prefer family-owned and operated businesses. The Business Alliance for Local Living Economies estimates that as much as 70 cents of every dollar spent locally stays in the community. Also, a poll released by Pew Research Center, dated May 5, 2010, showed that the public has general dissatisfaction with large corporations, which score in the low 20s and 30s.

It's no secret. The recent rise of the large "commodity" service players has shaken some longstanding beliefs among independent home service contractors. Have you questioned yourself by asking "doesn't quality and loyalty mean anything anymore?" It does. Be absolutely certain of this.

Selling the value of your service may be trickier today than it was just two years ago. Now, thanks to the Internet and social media, each customer is more educated than ever before, and they're looking to be impressed before they part with their hard-earned money. But remember, when they walk in the door customers have no idea what a job is going to cost. All they really want is to be treated with respect and to know that they are getting the greatest value for their money. So, instead of painfully slashing your price, increase customers' confidence and reduce the risk factor in their minds by giving them the assurance of your value. Wow them with a 100% satisfaction guarantee or an extended or lifetime warranty.

Home maintenance agreements with a big utility company may seem attractive to some homeowners because the agreements are inexpensive, and because the homeowner knows that the utility will remain in business. At the same time, consumers really don't like paying their utility bills; most homeowners do not want to give any

more of their money to their utility company than they have to.

Consumers know who's on top in their marketplace; if you've worked hard to stay on top by delivering value, don't make a knee jerk move! Hold true to your service commitment. The independent is and will continue to be a highly valued service provider for the foreseeable future. Don't slash prices, don't cut corners on customer service and don't be panicked to sell your business. Well-run, successful companies, whether they are independent or not, will always have an exit strategy, because they will always be attractive for others to buy. Which begs the question, Why would you want to sell your well-built, highly profitable company when market prices are devalued? When you're a market leader, there's always a market for you.

Training is the best way to assure your value and business sustainability, and it goes far beyond requiring techs to wear shoe covers. Begin by asking yourself these questions:

1. What new training and customer service processes have you introduced in your company to create more value with customers? What new marketing strategies have you implemented to communicate your value — to your existing base of customers as well as to new customers?

2. Are you 100% sure that your employees are using the skills they learned in training in the field with every customer? Are you following up to make sure that they are doing what you expect?

3. Have you downgraded company employees who are unwilling or unable to provide value in excess of price?

4. Are you doing all you can as a company to create value far in excess of your selling prices?

If you answered no to any of the above questions, start there before you print new price sheets and succumb to the siren call of "a price cut."

At Nexstar, we train members with the Nexstar Service System®. It takes the company and all employees through the entire customer care process from the incoming call to scheduling, arrival at the home, greeting, performance and the final step of assuring the complete satisfaction of the customer. We know that, in these difficult economic times, consumers are more stressed, and they're finicky. Their word of mouth means more now than ever before, and it can make or break you, so the better your customer service the more positive their word of mouth will be.

Your single best marketing tool is your technicians. They have the power to present and strengthen your image and to build value. They have influence over your repeat and referral rate, and repeat and referral business is the best business you can get.

In addition to great marketing and business savvy, a fierce commitment to customer service took Nexstar member Horizon Services, a plumbing and HVAC home service company in the Wilmington, Del., area from \$1.2 million to \$43 million in revenues within 14 years.

Exemplary customer service also built value in the eyes of Frank & Lindy Plumbing & Heating customers in Peekskill, New York, leading owner Bill Raymond and his company to the No. 1 position on Phc News' list of Top 20 Contractors of 2010.

Nexstar remains committed to the independent that desires to remain independent. By design, we are member-owned, which means that we are not beholden to any other parent organization of any kind, so we're able to

(Turn to Nexstar®, page 42)

Here is some good news
for the independents.
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Circle 33 on Reader Reply Card

Renewable energy not enough to get the job done

(Continued from page 37)
unprecedented evolution of its massive population growth.

As the emerging nations become more sophisticated, both India and China are battling the U.S. for world leadership in high technology, the lightning-fast growing component of today's post-industrial futuristic society.

Cap-and-trade's demise encourages power generating expansion

While some may bemoan the death knell of the administration's energy bill (cap-and-trade), passed by the House last year, new life may now be infused in the long-awaited expansion of America's lagging power generating facilities, natural gas development and even onshore oil exploration, as found in the

Bakken belt (North and South Dakota, Montana).

With extreme climate control measures voiding the use of coal, and possibly natural gas, the nation's utilities were loath to invest in the development of new power generating entities, afraid of what might come out of Congress and the White House.

Not knowing what this bill would allow, resource-wise, a major inhibition in such initiatives was the lack of willingness by financial institutions to provide the substantial loans that would be required by utility companies to initiate new projects. These had been put in mothballs, awaiting Congress' verdict.

The death of cap-and-trade for the foreseeable future may also give a green light to the long-awaited

pipeline to facilitate oil from the Canadian tar sands conversion to be shipped to Texas refineries. The building of Canada's part of this transmission entity has been well underway, stretching from Canada's Alberta Province to the U.S. border.

This delay had resulted in Canadian oil sands producers such as Syncrude and SunCorp shifting much of their production to China, which had already helped to finance a rail line and port facilities in Canada's British Columbia province.

Major coal mining corporations such as Peabody Coal and Patriot Coal followed suit, finding ready and willing buyers in Southeast Asia.

However, before implacable opponents of the climate control advocacy become too ecstatic, this may now unleash the Obama administration's Environmental Protection Agency to use extreme measures to throttle the economi-

cally viable resources that the U.S. energy developers would opt for to facilitate badly-needed expansion capabilities.

Ironically, some House members, such as Mary Bono Mack (R-Calif.) voted for the House-passed cap-and-trade bill, fearing that an administration-backed EPA might run amok, going even further than this misbegotten energy bill.

Longer-term developments in this arena will have to await the results of mid-term elections, and the subsequent attempts by the White House to impose its strictures on sorely needed traditional energy expansion. Renewable energy will not get the job done. ■

To get the financial and economic news on my daily blog, please log on to <http://www.theworldreport.org>, then click the link to "Morrie's Page" at mydesert.com. Please recommend the blog if you find it informative.

NEXSTAR®

(Continued from page 40)

train, coach and support our members and remain true to our focus on the success of the independent contractor. Don't let anyone fool you; the future looks bright, so seize your marketplace by building value and being the local, independent market leader of choice. ■

Greg Niemi is president and CEO of Nexstar® Network, a business development and best practices organization that provides business training, systems and support to independent home service providers in the plumbing, electrical and HVAC trades. Nexstar members get rapid results, guided by experienced coaches, surefire systems and incredible peer connections. For more information, visit www.nexstar-network.com.

DiToma

(Continued from page 34)

nesses in these hard times. They are reaping their monetary reward by following my theories and methods in their change to contract pricing.

If you would like my assistance and an opportunity to improve your business results, give me a call at 845/639-5050. We can discuss your situation. If you are open minded and can understand and implement that which I show you will give you the opportunity to improve your business results. I wish you good health and much prosperity. ■



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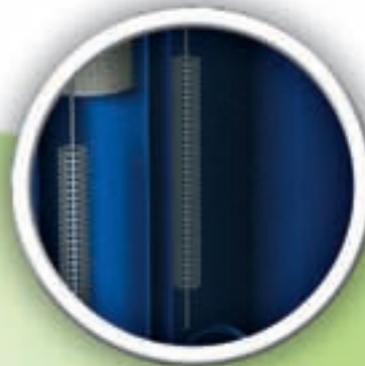
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Batteries of solar thermal energy: Storage tanks for solar domestic hot water systems

“The sun is the source, the system is the battery.” Given the variety of applications for which solar energy can be harnessed, the energy storage principle for a well planned and designed solar thermal system is extremely important for overall system efficiency. Solar electrical systems often tie right into the electrical power grid, so therefore no batteries are required to store electrical energy for the system. However, a solar hot water system requires sufficient storage capacity to absorb the energy produced by the collectors during the daytime collection hours. Working with many new solar hot water designers, I have noticed that designing in the appropriate volume of solar storage can be overlooked. It’s by no accident that this tendency occurs. A solar collector can be viewed as a boiler—energy is captured and delivered. But unlike designing boilers for peak hot water demand, solar energy is only available for a limited time each day. Good solar hot water design not only includes sizing the solar collector area to carry a percentage of the total hot water or heating load, but also suggests sizing the solar storage vessel to absorb all of the thermal energy the collectors will produce throughout the day. If the solar vessel is not sized large enough to the total collector area and there is no hot water demand, the solar tank could reach the critical high limit temperature and the solar controller will turn off the solar collection cycle. On commercial projects, under-sizing solar storage tanks can lead to chronic problems associated with extreme glycol and tank temperatures, or the poor economic result of having collectors that are not in use as often as they could be, and excessive heat dumping. Because choosing solar storage vessels for commercial hot water systems is a matter of finding large volume bulk storage tanks, this article is to help you become familiar with different types of tanks that can be integrated for solar hot water systems.

Sizing the solar thermal tank

There are no hard and fast rules for sizing storage in solar hot water systems. The general rule of thumb for solar storage sizing is that for every square foot of collector aperture, you will need to store any-

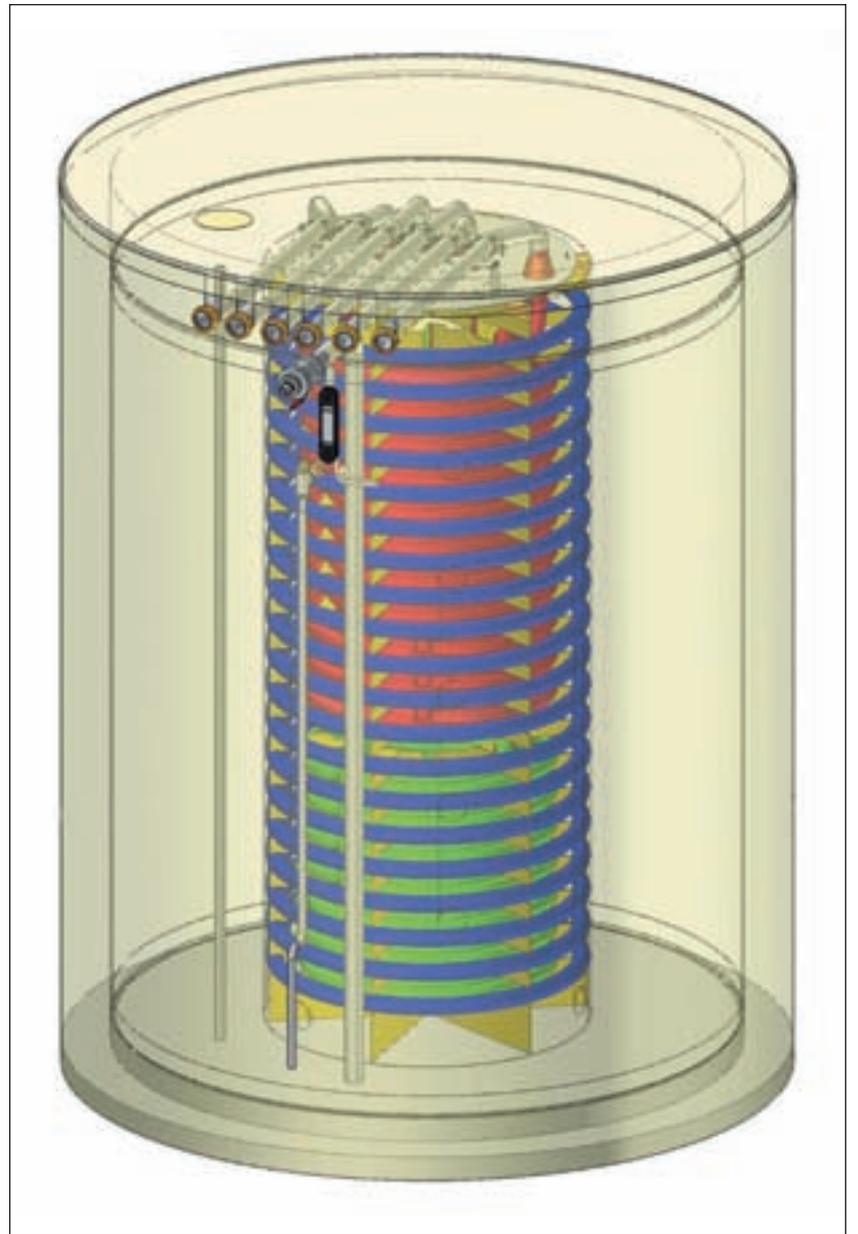
where between 1 to 2½ gallons of water, depending on your location and the application. The strategy is to allow for a reserve, as water, to store the solar collection cycle if very little or no daytime load is present, such as for homes and apartments. In some commercial systems, daytime hot water load constitutes the majority of the total load, and if that is the case, a fully sized solar storage vessel may not be necessary. Buildings that are occupied 365 days per year, such as hospitals and nursing homes, fall into this category. Most commercial buildings, however, have load variations based on occupancy and would require full storage capacity. Hotels, schools, and offices that have weekly or seasonal load variations should size storage capacity for more rather than less.

The goal to meet with a solar hot water system is to raise the temperature in the solar tank so that it is at or above design temperature (i.e. 120 °F for DHW) while having enough storage volume to absorb the remaining daytime collection cycle. Because solar energy cannot be depended upon, and varies widely with cloud cover and seasonal changes, you cannot expect a consistent temperature output from the solar tank day in and day out. Solar radiation, the hot water load, and storage volume all are interrelated and affect the constantly changing temperature at the solar storage vessel. It is a reminder then to understand that solar for domestic hot water is designed as a preheating system.

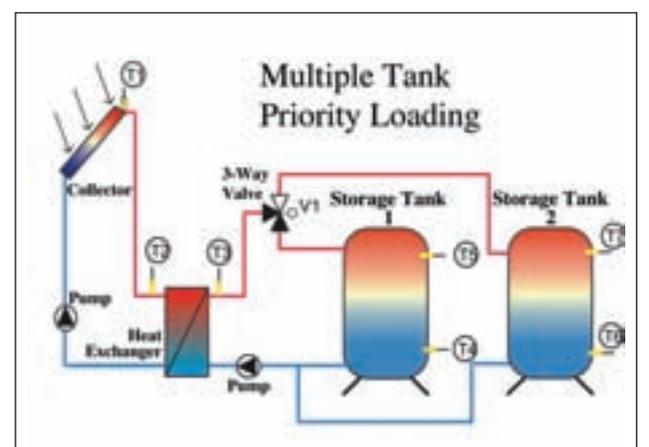
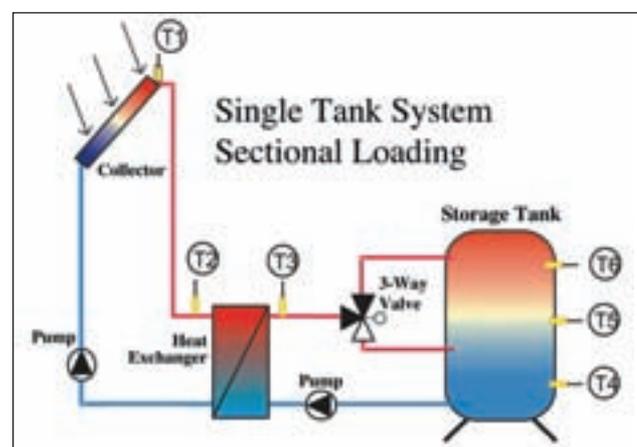
There is a piping and control strategy for solar storage tanks that would provide a basis for high capacity storage and high output temperature—a solar hot water system that

can absorb solar energy during the summer months (or during low- or no-load cycles) and also has a built-in mechanism for driving high temperatures during low solar energy winter months or cloudy days. The

concept is to load solar energy into a large vessel by sections, or to prioritize one storage vessel over another auxiliary storage tank(s). This is commonly done with a three-way valve and a solar controller with the capabilities to divert solar energy on temperature rise after priority section or tank is satisfied (i.e. 140 to 180 °F). The practice is not widely carried out but it could be; the de-
(Turn to Remember... page 48.)



Atmospheric vessels are storage reservoirs which contain unpressurized water which is the energy storage and transfer medium.



The concept is to load solar energy into a large vessel by sections. (right) Solar energy is loaded with a three-way valve and a solar controller with the capabilities to divert solar energy on temperature rise after priority section or tank is satisfied.



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Remember the golden rule of solar storage

(Continued from page 46)

sign makes better use of solar energy storage and the capability to produce design temperatures across the range of the sun's day-to-day and seasonal energy spectrum. For buildings with wide load variations and those in the northern climates, this design adapts the storage system to the changing relationship between the daily solar energy available and the hot water load.

The solar storage vessel

There are two basic tank categories for large volume bulk hot water storage vessels—pressurized tanks and atmospheric vessels. Pressurized tanks are commonly installed for residential or light commercial (80 to 120-gallon) solar hot water systems. Commercial solar hot water pressurized tanks can vary anywhere from 200 gallons up to several thousands of gallons. Although pressurized tanks are very common in the hot water industry and are often considered the standard option, atmospheric tanks shouldn't be ignored for solar commercial hot water storage. There is a distinct advantage that atmospheric vessels have with solar collection systems that gives them an economic edge. The atmospheric tank may have limited practical usage, but can play into enormous gains for long-term system integrity.

Atmospheric vessels are storage reservoirs which contain unpressurized water which is the energy storage and transfer medium. The water in the atmospheric vessel may be pumped into a gravity-drained solar collector system (referred to as "drainback") or the vessel can contain heat exchange coils installed for "closed loop" glycol solar collector transfer. Any atmospheric tank will need to be well insulated (no heat should be felt on the outside skin of the tank) and sealed tight against escaping evaporative steam. The main advantage of the atmospheric vessels is cost. Typically, dollars spent per each gallon of water stored can be considerably less than that of a same size pressurized vessel. This may not be true for all atmospheric tanks, but for all EPDM-lined tanks it is the case. An atmospheric tank lined with EPDM rubber is one low-cost solution to large bulk storage. These can be purchased as square or round tanks and can be assembled on site. Copper heat exchanger coils are normally

placed in the tank for energy transfer. The typical lifecycle of an EPDM liner is 12 to 15 years if temperatures are controlled to remain under 170 °F. Heat exchange coils may be removed and liners replaced at the end of a liner's lifecycle.

Another type of atmospheric tank manufactured in Europe has 15 years of technology behind it. It is designed to store hot water temperatures up to 185 °F and includes a long 20+ year lifecycle. Packaged and built on site, the water-holding container wall consists of durable glass-fiber-reinforced plastic. These tanks range in size from 350 to 12,000 gallons. Stainless

steel flexible heat exchangers are included for thermal energy transfer. This type of atmospheric tank may not be less expensive than a pressurized vessel, but has the advantage of fitting through a mechanical room doorway in individual parts and is built on site. The non-corrosive container wall would also suggest a longer operating lifecycle than that of a steel glass-lined tank.

Pressurized vessels are the most common tanks specified for commercial solar hot water systems. Tanks under 120 gallons are standard for residential and light commercial systems. They can be piped in parallel or in series for larger storage volumes without the costs for ASME-rated tanks above 120 gallons. These small solar storage tanks are constructed of stainless steel or as

glass- or enamel-lined steel tanks. Some models are solar ready and include extra ports for heat exchangers or can be purchased with internal single wall heat exchange coils.

For larger pressurized tanks, think about longevity and check with your manufacturer. Large pressurized vessel sizes range from 240 to over 4,000 gallons. Once in place you want them to stay. Small commercial hot water storage tanks of 200 to 400 gallons that operate under heavy usage are usually expected to fail within six years. They are large but designed to move through mechanical room doorways for easy replacement. For solar, the opportunity for a longer lifespan would include a double glass-lined manufactured tank. The process of double glass lining would not only strengthen the integrity of the glass liner itself, but also fill in any gaps the first layer might miss. Also consider tanks that are stone lined. The benefit to a stone-lined tank is not only a longer lifecycle, but that they can be relined to extend the life of the steel and insulation shell. On these 1000+ gallon hot water storage vessels, manhole ports are included for this service.

Whatever tank you choose to specify, remember the golden rule of solar storage. Solar hot water is for the application of cold water preheating. The preheated solar tank feeds the water heater so the back up doesn't have to work so hard. This design principle is often not understood. Common mistakes to avoid are: (1) designing solar thermal collectors on a hot water storage tank already being heated to design temperature with a boiler and (2) piping the recirculation hot water return directly into the solar tank. In both cases, the opportunity to preheat cold water is eliminated, and the purpose of solar hot water to save energy is diminished. It just so happens that solar thermal collectors are at their most efficient collection cycle at lower water temperatures, and loading cold tanks increases the system's storage capacity. Design solar domestic hot water for cold water preheating and you will never go wrong. ■

Peter Biondo is the technical sales coordinator for Oventrop Corporation. He has been involved in solar hot water and hydronic heating for more than 25 years. His primary work is assisting mechanical engineers and contractors with hydronic heating systems, as well as solar domestic hot water and heating for residential & commercial applications.



An above-tank view shows the innards of the storage tank complete with coils.



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The hidden costs of energy

BY THOMAS ROONEY

When Kate Hepburn called Burt Lancaster a liar in the movie *Rainmaker*, Lancaster said he wasn't lying, he was "dreaming."

Today, there's a whole lot of dreaming going on about solar power. The more popular solar gets, the more frequently the dreams are repeated. Here are the three biggest sleazy fantasies about solar.

Dream Number One: Solar costs more than coal and oil and natural gas.

The most popular piece of misinformation about solar is also the most easily disputed. Coal, for example, is not cheaper than solar — it just seems that way because entities other than consumers pay much of the cost. That is what the National Academy of Sciences found last year in a study called "The Hidden Costs of Energy." Coal costs \$63 billion more than consumers pay for energy from coal, all in the form of the sickness and death that result from re-

leasing coal particles into the air and water. That is the equivalent of about 25 to 100 percent more. If that sounds like a subsidy, it should, because that is exactly what it is.

Oil subsidies are even more extravagant. "The web of direct subsidies includes billions in government-sponsored low-cost construction loans and tax breaks such as the foreign tax credit," said energy analyst Blaine Townsend in the *San Jose Mercury News*. "Last in, first out' accounting practices, special write-downs for core operations and royalty 'relief' for leases in the Gulf of Mexico have robbed the federal coffers of billions more."

When I studied business at the University of Chicago, on many occasions I met Milton Friedman, America's greatest economist. Friedman — and every freshman Econ student — knew that economic comparisons are only valid when "all other things are equal." The rest of us say "apples to apples."

The International Energy Agency says that fossil fuels are subsidized by \$500 billion a year around the world. Strip away all the hidden subsidies and solar is not just cleaner and easier, it is also cheaper. That is not hard to see, but you do have to be awake. People who do not approve of subsidies for solar are on the right track; they just chose the wrong fuel.

Dream Number Two: Solar energy in the desert uses water that we do not have.

People confuse different kinds of solar energy. Photovoltaic solar is by far the largest solar technology, and it requires no water. In fact, compared to hydropower, which uses 18 gallons of water for every kilowatt of energy produced, or other kinds of energy that use about one to two gallons for the same amount of energy, photovoltaic solar does not need water for cooling because it creates energy directly.

Solar thermal power does require water — lots of it.

So it is a good idea to know the difference.

Dream Number Three: Solar is immature and speculative, says the *Wall Street Journal*.

Well, now: Germany has created 500,000 new solar jobs in the last 10 years. This year alone, Germans will build the equivalent of three nuclear power plants with simple solar panels. The speculation part is over. Today they are cashing in.

Next year, the parent company of the *Wall Street Journal* will begin construction on one of the larger solar installations in the country. The editorial writers apparently



missed that story. Or maybe they were just dreaming. ■

Thomas Rooney is president and CEO of SPG Solar, Novato, Calif.



A strategic and visionary leader, Rooney has more than 25 years of managing large-scale and publicly traded companies. As chief executive officer, Rooney's previous experience lends itself well to the company's ongoing development of utility-scale photovoltaic projects in addition to building upon SPG Solar's well-established reputation in commercial-scale solar. Prior to joining SPG Solar, Rooney was a noted speaker and consultant in the clean-tech sector while also serving on a number of boards throughout Asia, Europe and North America. From 2003 to 2007, Rooney served as the president and CEO of Insituform Technologies.

Rooney holds an engineering degree from Cornell University and an MBA from the University of Chicago.



Solar installations are popping up everywhere — from photovoltaic to solar domestic hot water. It's up to you to know fact vs. fiction.

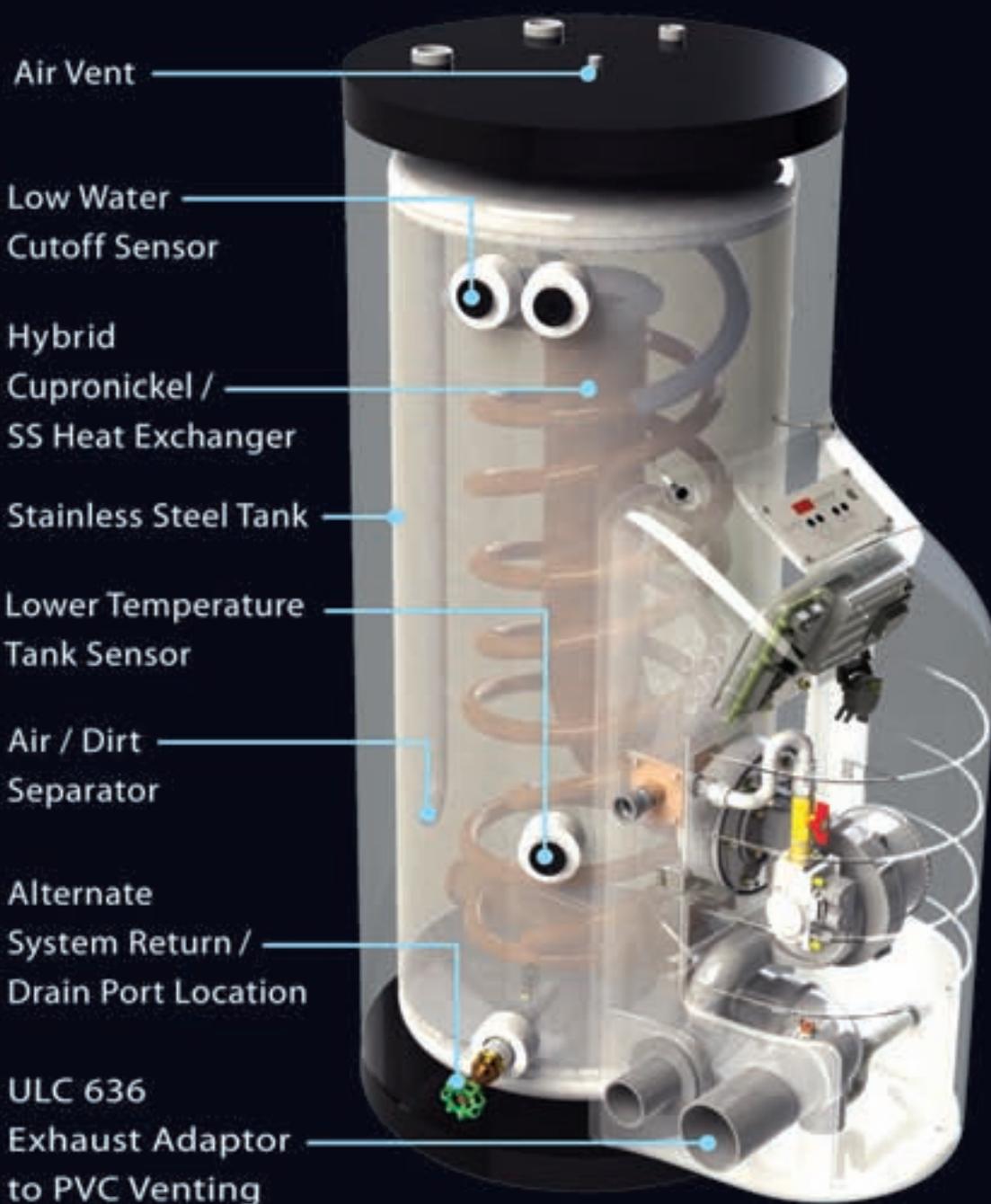


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Rainwater roof drainage systems: do not take them for granted

BY S. JERRY McDANAL, FASPE, CET, CPD

Many articles have been written over the years concerning storm/rainwater disposal systems. Although a small of the overall scope of a project, these systems are vitally important. I have been employed in the plumbing/drainage industry for many years, and it is apparent to me that some designers are comfortable with the basics and have taken some things for granted. Roof drainage and stormwater systems are often designed for the very minimum when, for various reasons, based on recent developments and conditions, it would have been prudent to exceed the minimum.

Beware when the weather bureau warns of flash flooding. Flash flooding can be very serious. The potential for flooding in the residential area of my hometown was regarded as remote, if not impossible. Flooding was considered only in relation to the river, which is quite a distance from my home. On May 7, 2009, my hometown experienced the most severe rainstorm in its recorded history. It rained relentlessly for four continuous hours without letting up and deposited 14.25 inches of rain on the east and north sides of the city. This exceeded NOAA's 100-year existing record of 10.26 inches for this area. Flooding was prevalent everywhere in the city. More than 800 structures (including homes) and 1,200 automobiles were flooded. There were numerous road washouts, bridge damage and associated secondary flooding damage and problems.

Flash flooding can cause havoc with the roof drainage system and structure. Witnessing this record rainfall confirmed my personal concerns regarding design parameters and the ability to look beyond the minimum. This rainstorm was just one of many that occur not only in the Southeast but also throughout the entire United States. It does seem as though rainstorms are continuing to increase in strength, intensity and duration. If an area is prone to frequent flash flooding, then do not hesitate to design drainage systems for greater protection that goes beyond the minimum.

Codes and standards establish a minimum acceptable standard for the design and installation of

storm/rainwater systems. There are two major codes that most municipalities adopt, with local amendments that relate to conditions in their particular area. The information pertaining to storm/rainwater shown in the codes must be used as the primary source for accepted methods and sizing. All designs must



Roof drains are designed for the architect, engineer and contractor for any installation/application.

meet or exceed the local requirements. Your sizing should be based on recent developments and changes in your area's climatic conditions.

The local code should be consulted to determine the rainfall rate that is applicable for the project location. A minimum design should be no less than 10-year/5-minute for the building roof and site unless other factors require designing for greater protection. For example, if the local code requires that the design be based on a minimum 10-year/5-minute storm but recent changes in the area's climatic conditions have consistently produced storms that have changed in frequency and intensity (even if temporary), then it is prudent to take this into consideration. Exercise good engineering judgment and use a greater severe storm frequency and duration to design beyond the minimum.

Many considerations should be considered in the design of any

storm/rainwater system. These include rainfall rate, snow depth, potential wind conditions, probable freeze conditions, building construction, type of roof, pattern of drainage slope, vertical wall heights, parapet heights, parapet scuppers (sizes, quantities and locations), emergency (secondary) overflow drain re-

the drain outlet/leader size and the rainfall rate/hour. A 4,600-sq.-ft. roof area subjected to 4"/hr. requires a four-inch roof drain outlet and vertical leader. Once you turn horizontal, the piping must be sized using one of the horizontal rainwater sizing charts which are 1/8 inch, 1/4 inch and 1/2 inch per foot slopes. In most cases the horizontal leader will increase in size, particularly when the roof areas to be drained are much larger.

One of the most common design characteristics I have observed with large box roof areas is the preference to use fewer larger drains rather than additional smaller drains. The reasoning is simple; reducing the number of openings in the roof slab reduces the chances of the roof leaking. This adds stress to the roof structure, though, as it allows more rainwater to be ponded on the roof, waiting to be drained.

During severe conditions, rainwater may be pushed by the wind from one side of the roof to the other. This not only adds additional stress and weight but also overloads the drainage system. For example, a large box store located in southern Florida had two 10-inch roof drains for the entire roof. When Hurricane Andrew rambled through the area in the nineties, not only was it dumping severe, above average rainfall on the roof but the wind also blew all of the rainwater to the west side of the roof. This added so much additional stress, weight and rainwater to that side that a portion of the roof collapsed. In this case, several smaller drains may have been able to endure the storm.

One item of extreme importance is planning for emergency (or secondary) overflow drains. Yes, it was not that many years ago that they were not required. Presently, one major code requires an overflow drain to be piped and discharged separately while the other allows it to be connected back into the primary system, dependent upon appropriate increased sizing of the primary system.

Providing a separate system and discharging it separately, usually to a location that will be seen by pedestrians is the best application. If it is observed discharging, then someone is going to report it. It is good engineering practice to have a 1-to-1 ratio for primary to emergency overflow roof drains.

In the event of an extreme storm, the emergency roof drains can assist in draining the roof if the primary system is overloaded. This is (Turn to Logic... on page 54.)

quirements and locations, ceiling space allocation, wall and chase space locations, etc.

Roof drains are subjected to stoppage, hence, the requirement for the dome. Free area ratios are 1.5 to 1. (See the following chart.) The dome (strainer) is required not to extend less than 4 inches above the roof per the applicable codes.

Outlet Size	Outlet Free Area (Sq. In.)	Minimum Sq. In. Required (1.5 to 1) For Domes
2 in.	03.14	04.71
3 in.	07.065	10.575
4 in.	12.56	18.84
6 in.	28.26	42.39
8 in.	50.25	75.375
10 in.	78.5	117.75

Roof drain manufacturers construct their drains in accordance with the applicable standards and codes. The codes provide charts with sizing criteria based on roof area in square feet, corresponding to

Sometimes a hands on demonstration is all you need.

The heat exchanger in a Bobcat modulating condensing boiler uses one inch wide waterways, making it much less susceptible to mineral buildup. A popular heat exchanger used by many competitive heating companies has water passages only .20 of an inch wide. In addition, theirs requires regular cleaning or it could void the warranty. One more nice thing about the Bobcat is, that it is designed and built right here in America by Slant/Fin, a company with 60 years of experience in the heating business.

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Logic and good engineering practice must prevail

Continued from page 52

another reason to keep the emergency system separate from the primary system.

The horizontal section of the pipe and the roof drain body should be insulated with a vapor barrier to control condensation. Low-temperature liquid flow in the piping causes condensation to form on the outside of the piping, potentially causing stain damage to ceilings and drip marks on floors, along with other problems.

Piping layouts must be coordinated with all the trades that may be affected, such as the architect for furring-in the proper columns for vertical leaders, the structural engineer for pipe support and footing depths, the electrical engineer for conduits, etc., and the HVAC engineer for ductwork and piping.

Locating the roof drains should be a coordinated and cooperative effort among the architect, structural en-

gineer and plumbing engineer. The architect is familiar with the building construction, parapets, walls, and chase locations, available headroom for horizontal pipe runs, roof construction and waterproofing membrane. The structural engineer is familiar with the structural support layout, roof slopes, column orientation, footing sizes and depths and maximum allowable roof loading. The plumbing engineer can provide information concerning the maximum roof areas per drain, wall and column furring-out requirements, ceiling space requirements, elevations of horizontal piping in ceiling space and inverts of horizontal piping once underground.

point and to minimize the horizontal runs. The plumbing engineer should determine the potential weight of ponded water and provide the structural engineer with such data. The roof structure must be able to support the weight of ponded water by design or by nature. It is always best to determine the worst possible situation in calculating the potential rainwater load in pounds of weight. The building roof transfers the combined weight of live and dead loads to the supporting structure. Live loads include snow, rain, wind and water on the roof. Dead loads include all mechanical equipment, electrical equipment, other equipment and the roof deck. The importance of involving the structural engineer cannot be emphasized enough. The design of the roof structure is critical, and the structural engineer must have complete information to make the correct de-



Raintrol roof drains from Jay R. Smith feature an adjustable flow rate control.

gineer and plumbing engineer. The architect is familiar with the building construction, parapets, walls, and chase locations, available headroom for horizontal pipe runs, roof construction and waterproofing membrane. The structural engineer is familiar with the structural support layout, roof slopes, column orientation, footing sizes and depths and maximum allowable roof loading. The plumbing engineer can provide information concerning the maximum roof areas per drain, wall and column furring-out requirements, ceiling space requirements, elevations of horizontal piping in ceiling space and inverts of horizontal piping once underground.

The plumbing engineer also should ensure that the drains are located in the low points of the roof to limit deflection which may cause ponding and shifting of the low roof

decisions. Always design for the worst scenario. Determine the potential maximum volume of water (convert to pounds) that could pond on the roof if all roof (primary and emergency) drains were non-functional and no other means existed for draining the water.

Most roof drain manufacturers provide charts in their roof drainage technical sections. These charts are all taken from one of the various plumbing codes or other technical manuals. The sizing procedure is simple. A 4"/hour rainfall rate and a 4" roof drain outlet/vertical leader size intersects at a maximum of 4,600 square feet of roof area per drain or, depending on which code is being referenced, it could be slightly greater or less than 4,600 sq. ft.. This does seem simple, but roof drainage is a major liability and must be carefully designed, sized and coordi-

nated. Some designers fail to look past the simplicity of sizing the system to the results of a poor or inadequate design.

In defense of these charts, many thousands of roofs have been designed successfully based on the criteria they contained. There is, however, a small percentage of roof drainage systems that fail, usually because of a weather phenomenon and not because of the design or ca-



Roof drain and secondary overflow deck with deck plate.

capacity of the system. This could happen after years of successful service with no problems, so why all of a sudden is the roof drain to blame? Other reasons have to be investigated, such as overloading, structure inadequacies, incorrect locations of drains, depressed roof areas causing ponding, drain or leader stoppage and lack of sufficient secondary overflow drainage.

In some cases, a designer may elect to use larger outlet roof drains to reduce the number of openings through the roof structure. This is normally acceptable, except when a weather phenomenon occurs. A hurricane, for example, will definitely overload a roof. Unless the structure is engineered to support this extraordinary load, the roof is likely to collapse. In the last several years, there have been an abundance of extreme storms causing flash flooding, having the same end effect as a hurricane.

Logic and good engineering practice must prevail when designing roof drainage systems.

Some charts list allowable flow in gallons per minute (gpm). For example, one chart indicates a 4" vertical leader will flow 192 gpm. Okay, but

at what head of water over the roof drain? Until the rainfall intensity and head of water builds up to a certain level, the drain will not flow 192 gpm. Some plumbing designers fail to realize that a specific volume of flow does not occur until a certain head of rainwater is achieved over the drain. Even an undersized roof drain will eventually drain the roof of the rainwater, but will the roof's structure hold up during this drain

down period? For the flow of rainwater through the roof drain to increase the hydraulic head of rainwater over the drain must be heightened.

Can a house be constructed that is hurricane proof? Yes, check the one left standing at Galveston. The cost to construct this house is greater than the standard house built to present construction and code standards. The same principle applies to roof drainage systems. Designs based on the charts and other code criteria are sufficient for normal rainfall intensities and weather events but not for the occasional weather phenomenon. Extra capacity built into a system results in additional costs. ■

S. Jerry McDanal, FASPE, CET, CPD, is vice president engineering of Jay R. Smith Mfg. Co. He has 42 years of experience in the plumbing engineering and plumbing & drainage industry. He has been with Jay R. Smith for 31 years and is a 42 year member of the American Society of Plumbing Engineers. In 2008 he was an inaugural inductee into the ASPE College of Fellows.

REMEMBER THESE FACTS:

- The characteristics of rainwater will vary, sometimes it is more sensitive than other times, according to temperature, pressure, composition (density), head, intensity, specific gravity and so forth all contributing to its mechanical behavior.
- A relatively large hydraulic head of rainwater is required to increase the flow through the drain and to achieve peak flow.
- A considerable amount of air is entrained with the rainwater as it enters the drain. This prevents the leader piping from flowing full. In a vertical installation the rainwater will actually swirl around the inside diameter of the piping. In a horizontal installation, the air will occupy the upper half of the leader piping. Consideration should be given for partially full piping during peak flow.
- For each primary roof drain, there should be the same size secondary (overflow) roof drain. A 1-1 ratio is desired.

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Circle 41 on Reader Reply Card

Integrated pipe inspection technology increases contractor efficiency

BY SARAH GOLISH

Technology has profoundly impacted the lives of plumbing, heating and cooling contractors. More and more electronic devices are finding their way to job sites. From mobile phones to digital cameras, from laptops to digital tools, the contractor has the ability to have constant and immediate access to information in order to become more productive and efficient. Ninety-eight percent of contractors have cellular subscriptions and 28 percent carry smart phones. And these numbers are rapidly growing. Eighty percent of contractors carry a digital camera on the job for documentation and 51 percent carry a laptop. As

more and more basic electronic devices find their way into the field and become part of the way service professionals do business, the greater the need to integrate the uses of pipe inspection equipment

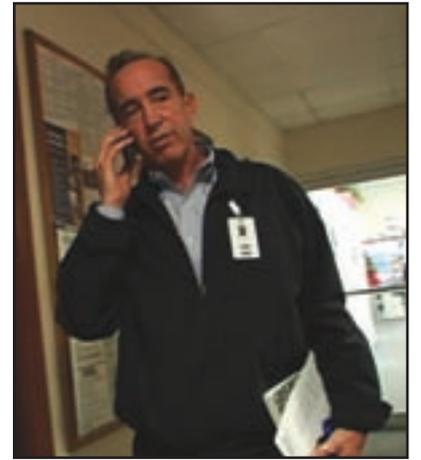


Twenty-eight percent of contractors carry smart phones — which can access RIDGIDConnect™, an online management system, for example.

with these devices as well as into the general work flow of a contractor's business.

Digital capabilities encourage report sharing

Pipe inspection equipment is going digital. Contractors are becoming more comfortable with digital devices given the usage of laptops and digital cameras in the field. Additionally, recording and documenting jobs is more important than ever. Fifty-eight percent of the contractors who do pipe inspections record every job they do and over 40 percent share this documentation with multiple people. Although VHS or DVD previously



To increase efficiency, technology is becoming increasingly important to the busy, on-the-go contractor.

allowed a service professional to share a job documentation, digital capabilities allow them to more quickly create multiple copies of the job documentation. Additionally, jobs can be stored easily on a computer or hard drive without the hassle (or the space) of file cabinets. Digital recording is also more

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"Thank you for all the helpful tips on e-marketing. This is already a key part of my business! The Get More Calls NOW program gave me a nudge to make it better and see what I am missing! Thanks for the helpful support you both bring to the table too!!"

Elinor Wright
Wright Plumbing

Have you ever picked up your phone just to make sure the line is still connected? Business can be tough when you don't have enough calls. That's especially true in tough economic times...like now. The Get More Calls NOW program will get your phone ringing again, with the best possible return on investment for your marketing dollars. We are so certain this program works, that we offer participants a full money-back guarantee. (What other marketing program offers THAT?)

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Circle 42 on Reader Reply Card

reliable, as well as easier to verify through playback than both DVD and VHS.

These advantages have obviously led to a number of new digital pipe inspection solutions. There are simple devices that allow a contractor to hand off a USB thumb drive or a SD card much like they did with a VHS tape or DVD disk. One issue with this solution is ensuring customers have the ability to play the inspection files. Depending on what is loaded on a user's computer, there could be a compatibility or codec issue that would require additional software to be downloaded in order to play the inspection. This could confuse or frustrate a customer.

Sophisticated solutions

In order to avoid compatibility issues, more sophisticated solutions exist. First, there are video players



Now jobs can be easily stored on a computer or hard drive without the hassle of file cabinets.

pre-loaded onto a USB thumb drive in order to ensure the ability to view videos on all computers. Secondly, solutions that use recording and common files like PDFs and HTML documents make it easy for customers to view the inspection video. Instead of taking notes on



More and more contractors take technology with them. In fact, 51 percent of contractors take laptops to the job.

the face of a DVD or an invoice, contractors can quickly create professional, interactive reports in the field that can then be handed out as a deliverable to document the problems and any other useful information found during an inspection. These reports make it easier to consistently deliver the same reports to customers every time.

As the trend of service professionals carrying laptops into the field has increased, it has driven the need to have drain inspections monitored directly by a laptop. Products have recently been devel-

oped that allow the direct use of a laptop integrated into a pipe inspection system. This means no more dedicated monitor, but in its place a laptop that can be used to monitor the inspection, create contacts and reports, store jobs, and then deliver an inspection report to one or many different people through a variety of media including DVD, USB thumb drives,

printed reports, email, or even as a hosted video file on the internet.

Software programs respond to municipality regulations

New capabilities are due to advances in software that either sits within the dedicated monitor or the individual program that is downloaded onto a PC. Often, pipe inspection equipment comes with

dedicated software suites. There is also a number of independent, very sophisticated software programs that focus on the codes that are required by municipal and city regulations. These software programs allow a contractor to more professionally create a report, communicate with end users, and store these records. Additionally, these software (Turn to Software... page 58.)

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GREENING STEAM

How to Bring 19th-Century Heating Systems into the 21st Century (and save lots of green!)

By Dan Holohan

NEW

GREENING STEAM

How to Bring 19th-Century Heating Systems into the 21st Century (and save lots of green!)



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“When it comes to saving dollars on heating, old steam systems are delicious low-hanging fruit. There is so much you can do to make them better, and most of what you do won't cost a fortune.”

Dan Holohan

Circle 43 on Reader Reply Card

Software and hardware advancements have a place in the contractor's arsenal of tools

(Continued from page 56)
programs give service providers a template to fill out in order to en-

sure their reports meet the increasing standards necessary for some municipality and city records.

Taking it a step further, services exist which allow a service professional to host their video, images, and reports securely online. Services that allow a service professional the ability to store and archive their jobs, organize their contacts, access job information 24/7, as well as facilitate the communication of jobsite reports to customers and other interested parties.

Over the next few years, software will become increasingly important as it continues to simplify the usage of digital data for the contractor, and the hardware becomes more sophisticated and compliant. In doing this, the use of digital media both for recording inspections as well as integration with invoicing, dispatch, and job communications will become the standard within



Over the next few years, software will become increasingly important as it continues to simplify the usage of digital data for the contractor.



Pipe inspection equipment is going digital. Contractors are becoming more comfortable with digital devices given the usage of laptops and digital cameras in the field.

the industry. Much like recording pipe inspections has become the norm, professional reports and digital delivery is becoming the new standard. A simple and seamless process for service professionals



Products have recently been developed that allow the direct use of a laptop integrated into a pipe inspection system. This means no more dedicated monitor, but in its place a laptop that can be used to monitor the inspection.

will continue to evolve over the next few years as more and more solutions are developed that integrate technology to increase contractors' efficiency. ■

Sarah Golish is director of inspection systems and networks at RIDGID®, a leading manufacturer of innovative tools and equipment for the professional trades. RIDGID is part of Emerson Professional Tools™, a business of Emerson, which brings technology and engineering together to design and produce some of the highest quality tools and equipment in the world. Golish manages the development and strategic growth of the RIDGID line of pipe inspection systems.

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Circle 44 on Reader Reply Card

All American Standard FloWise® showerheads now WaterSense-certified

PISCATAWAY, N.J. — American Standard announced today that all of its FloWise® showerheads and hand showers meet or exceed the U.S. Environmental Protection Agency's (EPA) WaterSense® program requirements for high performance and water efficiency.

Even more important: they meet user demand for performance, with style, saving up to 20 percent in water usage over current standards, while still delivering an invigorating shower. Showerhead models range from traditional to transitional to contemporary, with styles to meet every home décor.

The EPA's WaterSense program requires showerheads to have a maximum flow rate of 2.0 gallons per minute (gpm) or less — 20 percent lower than the current federal stan-

dard of 2.5 gpm — while also meeting such performance standards as flow rate across a range of pressures, spray force and spray coverage.

The American Standard line of FloWise showerheads exceeds these

requirements, with the highest rate of water savings at 1.5 gpm. Replacing an older showerhead with a FloWise showerhead can save a family of four approximately 11,000 gallons of water annually.



IAPMO encourages DOE to adhere to Green Supplement

WASHINGTON — As it considers new rules emphasizing sustainability in the design and construction of federal buildings, the U.S. Department of Energy (DOE) has been urged by the International Association of Plumbing and Mechanical Officials (IAPMO) to employ the provisions of IAPMO's Green Plumbing and Mechanical Code Supplement.

The Energy Independence and Security Act of 2007 requires that the DOE establish revised performance standards for the construction of new — and major renovations to existing — federal buildings. The DOE recently published a notice of proposed rulemaking (NPR) in order to:

- reduce the total ownership cost of facilities;
- improve energy efficiency and water conservation;
- provide safe, healthy and productive built environments; and
- promote sustainable environmental stewardship.

Maxwell Systems releases estimating software

KING OF PRUSSIA, PA. — Maxwell Systems Inc. announced the release of Maxwell Systems™ Estimation™ 9.1. This version of Maxwell Systems' advanced takeoff and estimating software for electrical, mechanical, plumbing and HVAC contractors includes numerous enhancements to estimating functionality, as well as new capability for Shape Recognition in Estimation Digital Takeoff.

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Circle 45 on Reader Reply Card



Large-dia. grooved system

Patented Advanced Groove System (AGS) line allows for faster and easier installation of large-diameter piping systems. Includes rigid and flexible couplings with AGS technology for pipe sizes up to 60" dia. for HVAC, mining, water and wastewater and industrial applications. Saves hours over welding; pressure ratings up to 350 psi. **Victaulic.**

Circle 101 on Reader Reply Card

Solar system controller

The iSolar BX is a powerful, multi-functional temperature differential controller for solar thermal heating applications has four relays, two PWM outputs for EMC pumps, five Pt1000 sensor inputs, two Grundfos flow sensor inputs, and one impulse flow meter input. 26 predefined arrangements are configured for control of a wide variety of solar thermal heating applications. Has data transfer capabilities. **Caleffi.**



Circle 102 on Reader Reply Card

Tankless connection kits

Connection kits provide the components to easily install gas or electric tankless water heaters and consist of



service valves designed for tankless water heaters, a high Btu gas connector, 2 water connectors and a valve to isolate the unit. Hot water valve has pressure relief; valves carry ANSI/NSF 61-8 certification. Two connection types: one all union, one with union to water heater and 3/4" FPT connections to water supply. Water connectors are 24" flexible stainless steel braid with brass compression end fitting. **Dormont.**

Circle 103 on Reader Reply Card



★ Phc News product of the month ★

Isolator has two new features

The patented Isolator with rotating flange and drain has been enhanced with two new versatile features: A newly designed snug-fit rotating flange that offers greater control over positioning during installation; and a multi-directional main valve that allows for draining from either side of the pump. Same part numbers and price — look for these newly enhanced products to be on shelves in the near future. The manufacturer dates from 1954 and is recognized as an industry leader for innovative design of residential and commercial valves used in plumbing, hydronic, radiant, solar and geothermal applications. These designs focus on time and space saving concepts that simplify future maintenance and upkeep of all piping systems. Some trademarked and patented items include; The Isolator®, Isolator EXP™ Pro-Connect™ and Pro-Pal® step saving valves. **Webstone.**

Circle 100 on Reader Reply Card



Oil/water separator for oil cleanup

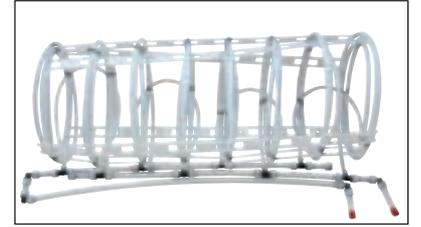
Skiff Skimmer™ oil/water separators help clean up oil spills; fits an 8'x8' footprint (typical of a Lafitte skiff). Made from high density polyethylene; fully closed top with 15" access-way; built-in clear PVC sight glass and bottom drain valve to drain separated water; has hold-down brackets to anchor tank safely into boat. **Schier Products.**

Circle 104 on Reader Reply Card

Permanent-magnet circulator

The ALPHA circulator pump now has a terminal box for conduit connection applications. Made for North America, ALPHA's permanent magnet motor design reduces power consumption by 50% or more while AUTOADAPT™ controls performance for the lowest possible energy consumption. Compact; electronics are integrated within the motor. A standard two-bolt flange with a built-in nut-capture feature holds the bolt steady during tightening. Optional check valve prevents backflow. Cast iron, available with a stainless steel volute for aggressive-water environments. **Grundfos.**

Circle 105 on Reader Reply Card



Pre-fabbed PEX mat

A custom-designed, prefabricated, pre-pressurized network of PEX-a tubing, the Radiant Rollout™ Mat makes for faster, more consistent installations for large commercial radiant applications — saving up to 85% in installation time. Consists of Wirsbo hePEX™ (oxygen barrier) or AquAPEX® (non-barrier) PEX-a tubing connected with PROPEX® engineered plastic fittings, which are safe for burial in the slab and can be customized on site. Installs about eight times faster than conventional methods. **Uponor.**

Circle 106 on Reader Reply Card

Back-up pump combo

The PC-Series saves installation time by combining a primary 120V sump pump with a 12 VDC back-up pump in a factory assembled compact unit. Available in 1/3 hp. and 1/2 hp. primary models, the new series boasts energy efficient performance utilizing only 5.2 and 7.5 amps respectively. In the event of a power outage or main pump failure, the 12 VDC pump takes over automatically and protect the building from flooding. **Liberty Pumps.**

Circle 107 on Reader Reply Card

Explosion-proof pumps

New automatic explosion proof pumps are high head pumps for submersible sewage or dewatering applications. Features include motors FM listed for Class 1, Division 1, Group C & D environments plus durable cast iron cover, motor adapter and pump housing with stainless steel parts that will not rust or corrode. Available in 2" or 3" NPT Flange discharge. **Zoeller Pump Company.**

Circle 108 on Reader Reply Card

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The Ultimate in Energy Efficiency with Hi-Tech Comfort

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- Optional built-in recirculation system with buffer tank
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Circle 46 on Reader Reply Card



Plastic pipe manufacturer

The largest manufacturer of plastic pipe in the world produces more than 1.1 million feet of PEX tubing each day. Their large-scale production capacity allows them to produce high quality products at competitive prices. Oxygen barrier and plumbing PEX tubing meet ASTM F876 and ASTM F877 standards. Their PEX-Aluminum-PEX tubing meets the ASTM F1281-2005 standard. The company also manufactures fittings, manifolds, and valves. **Rifeng Systems.**

Circle 110 on Reader Reply Card

Universal digital oil primary

The R7284U Universal Digital Oil Primary control with built-in diag-



nostic display allows an oil service technician to determine the root cause of a lockout as well as access every setting and diagnostic feature of the control without having to use additional tools. **Honeywell Intl.**

Circle 111 on Reader Reply Card

Positioning bracket redesign

Company has redesigned its Positioning Bracket, item #521-110. The



changes include placing all 1/2" copper stub out holes at the same height, providing a 3.42" centerline in relation to the waste pipe. Other changes include a snap-lock band and the addition of an 8" piece of self-adhesive felt to each bag. **Sioux Chief.**

Circle 112 on Reader Reply Card

★ Phc News product of the month ★

High-efficiency heater

The Pioneer Heating Appliance bridges the gap between older, inefficient boilers and pricey high-efficiency units and provides homeowners with an alternative to those extremes. Combines the performance and advanced system control features of a leading low-mass boiler with the competitive price point and ease of installation of a mid-efficiency product. Four input sizes from 100,000 to 199,000 Btus, suitable for most residential space heating applications. Features Load matching 3:1 turndown ratio; single loop design; 95% thermal efficiency rating; approved for PVC venting in several configurations and uses room intake air. Hybrid cupronickel/stainless steel heat exchanger offers excellent heat transfer properties and high resistance to thermal fatigue. Its entire combustion and control system can be accessed by removing a small, lightweight cover. The control board slides out and can be disconnected without tools, while the burner assembly can be detached by removing six screws and the flexible gas line to the valve. **HTP.**



Circle 109 on Reader Reply Card

Stainless, vertical multi-stage pumps

Goolds Pumps line of stainless steel, vertical multi-stage pumps has been enhanced with the introduction of



new e-SV $\frac{5}{8}$ models. Featuring an innovative hydraulic design and highly efficient motor that significantly lowers lifecycle costs and increases energy savings, the pumps are suited for a wide variety of commercial and industrial applications. The new hydraulic design also provides superior NPSHR levels, and by eliminating the need to remove the motor, maintenance time is significantly reduced. The mechanical seal is also replaceable without the need for pump disassembly, and the "O" ring seat is designed to allow easy disassembly of the outer sleeve. **ITT Corp.**

Circle 113 on Reader Reply Card

High efficiency urinals

North Point™ HEU models sport a new distinct look and use 50 percent less water than standard 1.0 gallons per flush (gpf) urinals, while delivering the same performance. All North Point HEUs utilize a washout flushing action to consistently clear the urinal every time. HEUs are available in two sizes, large and small (17½ inches × 27 inches and 14 inches × 22 inches), and in high efficiency 0.5 gpf and standard 1.0 gpf models in top or rear spud configurations. Both sizes feature an elongated 14 inch rim from the finished wall, making the urinals ADA-compliant. **Gerber.**



Circle 114 on Reader Reply Card



Rough-in adapter

Dura-Coated™ cast iron Rough-in Adapter (RA) allows for vertical adjustment after the concrete pour ensuring your drain is flush with the finished flooring. The included cover replaces the strainer during construction keeping pipes clear of debris, eliminating backup, and protecting the strainer. The RA is compatible with many of Zurn's proven strainers offering application versatility while conserving both time and money. **Zurn Industries, LLC.**

Circle 115 on Reader Reply Card

Domestic hot water storage

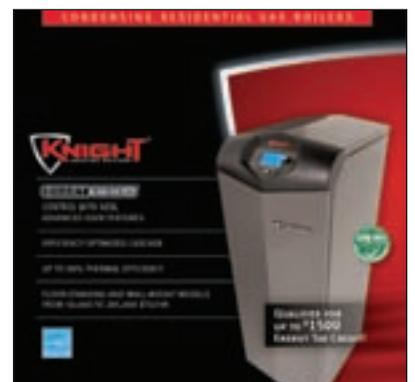
Designed for use with instantaneous water heaters that provide immediate hot water at peak demands. ASME-certified, the storage tanks promote stable temperature control for potable water applications and help reduce water heating cycling in commercial laundry systems and full on/full off, solenoid applications, thereby improving operating efficiency. **AERCO Intl.**



Circle 116 on Reader Reply Card

Lochinvar KNIGHT® lit

New literature is available for the KNIGHT® Heating Boiler, now en-



hanced with an updated SMART SYSTEM™ user interface. Re-engineered SMART SYSTEM design features a larger display screen, color coding functionality and soft keys for quick and easy use. **Lochinvar.**

Circle 117 on Reader Reply Card

Now We're 4 For 4! **CLEAR**Report

by Clear Seas Research

The Brand Most Purchased by Contractors FOUR YEARS IN A ROW!



We're the Talk of the Industry. Here's a Sampling of Contractor Reviews...

"The largest portion of our tanks installed are Bradford White natural draft, we like the FVIR system"

"(They) have a great engineering department"

"Water Heater with the best gas control valve on the market"

"Solid, long lasting and easy to repair"

"My dealer and Bradford White could not be any better than they are"

"We service Bradford White and have thousands of dollars (worth) of their parts and never use them"

"Not sold retail"

"Support of PHCC"

"American Made"

"Bradford is just all around (a) better heater and company"

"Fit and finish of their product is first class"

And the number one response... "Quality"



For the Fourth Consecutive Year, Bradford White remains the tank water heater brand most purchased by Plumbing and Heating Contractors. **We are also, again, the most recommended brand.**

The comments above are just a few taken from the 2009 CLEARReport* by Clear Seas Research. We wanted to let your industry colleagues speak for us. They prove that our commitment to the trade and our pledge to provide a premium product at the best possible price is the way to do business.

Thank you for your continued support. We'll keep striving, innovating, and working hard every day to be the water heater brand of choice for all plumbing and heating professionals. Remember, if your wholesaler doesn't carry Bradford White, ask why!


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*Ranking is based on the 2006, 2007, 2008 and 2009 CLEARReports by Clear Seas Research. Please visit www.clearseasresearch.com for additional information. © 2010, Bradford White Corporation. All rights reserved.

Circle 47 on Reader Reply Card

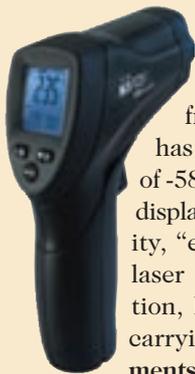


Rock bucket

Rock Buckets make quick, easy work of removing objects from the soil. They retain stones and debris, while the soil sifts through, separating the material. Tines are fully gusseted and interconnected for strength and durability, and the cutting edge of the attachment is always visible to the operator. Easy to use and causes minimal disturbance to the ground. Available in four widths: 62", 68", 74" and 82". Use on the manufacturer's skid-steer loaders, compact track loaders, all-wheel steer loaders, Toolcat utility work machines and the V417 VersaHandler telescopic tool carrier. Bobcat.

Circle 119 on Reader Reply Card

Non-contact infrared thermometer



The easy-to-use KiRay 100 non-contact portable Infrared thermometer has a temperature range of -58°F to 1,472°F, backlit display, adjustable emissivity, "easy-reference" card, laser sighting, hold function, high-low alarms and carrying case. E Instruments International.

Circle 120 on Reader Reply Card

Cuts PEX, PVC and more

Unique SuperSlice™ cuts all sorts of plastic tubing with virtually no tube



deformation. Squeeze the SuperSlice and the tool's V point blade quickly and easily slices through PEX, PVC, CPVC, irrigation pipe, plastic electric conduit, and plastic or rubber hose as large as one inch (25 mm) in diameter. Faster than ratchet type cutters. Ergonomically designed handles provide plenty of leverage. Costs less than the replacement blades of competitive products. General Pipe Cleaners, a division of General Wire Spring.

Circle 122 on Reader Reply Card

★ Phc News tool of the month ★ Drain inspection system in complete package

SeeSnake® microReel L100 and L100C inspection system is a complete compact, portable drain inspection system for pushing cable distances of up to 100 feet in lines from 1½" to 4" in diameter. Designed for use in lateral lines that exit the building and connect to septic or sewer lines, and in roof stacks, it features a 100-foot cable and a larger, 25-mm camera head with greater lighting. RIDGID®.

Circle 118 on Reader Reply Card



Toilet bowl protector saves finish

T-BowlShield safeguards the toilet bowl and siphon tube when using standard auger. Flexible, tapered nose cone nestles in standard toilets, effectively bridging the throat of the toilet and allowing a scratch-free passage of the auger into the blocked area. 2-piece design comes with instructions for assembly and use. Rugged, reusable and simple to use. Patent pending. TBowlShield.

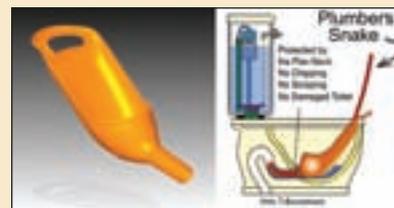
Circle 121 on Reader Reply Card



Roll groovers for 8" - 12" pipe

Popular, professional grade, Combo Roll Groovers feature model RGCOMBO812 for larger pipe; forms standard rolled grooves in 8" - 12" steel, stainless steel, and aluminum pipe up to 0.188" wall thickness. Saves time and money by allowing a complete change in minutes from power machine operation to manual work. Compact, portable, economical solution to the jobsite grooving requirements of mechanical piping system installations. Consistent, effortless tracking time after time. Two wrenches included — one for power grooving and an angled one for manual grooving. Reed Manufacturing Company.

Circle 123 on Reader Reply Card



Promote breast cancer awareness

"Let's Nail the Cure" Tool Graffiti for fuel powered cordless framing nailer



Model 900420 promotes breast-cancer awareness. The company offers four designs of decals or "skins" for the tool. Paslode.

Circle 124 on Reader Reply Card



Pipe thread sealant

Blue Monster™ Stay-Soft, a PTFE-enriched pipe thread sealant specially formulated for the fire protection industry, is compatible for use with FlowGuard Gold®, BlazeMaster®, and Corzan® pipe and fittings in harsh environments. Doesn't harden; allows pre-fabbing weeks before assembly; disassembly years later. Grit-free, lead-free, non-toxic, adheres to oily threads, easy cleanup. Clean-Fit Products, a division of The Mill-Rose Company.

Circle 125 on Reader Reply Card

Improved locking pliers

WISE-GRIP curved jaw (CR) locking pliers feature a self-energizing lower jaw that delivers three times more gripping power than traditional locking pliers, with no slipping or stripping. Makes multiple contact points with the work for a significantly tighter grip. Slotted geometry of the new 'self-energizing' pliers exponentially increases torquing power. No-trigger release for one-hand operation. Irwin Tools.

Circle 126 on Reader Reply Card



Dye injection kits

BigEZ™ Dye Injection Kits allow technicians to add the precise amount of fluorescent dye into AC&R systems. Each kit features the BEZ-50 dye injector assembly, an A/C hose/coupler with check valve and ¼" flare low-loss fitting, one BigEZ dye cartridge and a purge fitting. Requires only one connection. Dye cartridge is precision calibrated; no messy spills or waste. A 4-oz cartridge treats up to 16 gallons of lubricant, approximately 400 lbs. of refrigerant or 150 tons of cooling. Reveals the smallest leaks when scanned with a high-intensity Spectroline® inspection lamp. Spectronics Corporation.

Circle 127 on Reader Reply Card



INDUSTRY NEWS

PHCC announces scholarship winners

FALLS CHURCH, VA. —The Plumbing-Heating-Cooling Contractors Educational Foundation recently announced the winners its 2010 scholarships. Four students were awarded a total of \$9,000 in scholarships funded by the foundation, the South Jersey Mechanical Contractors Association, the PHCC Past National Officers and the PHCC Auxiliary of Massachusetts.

Eleven additional students (to be announced) will receive 2010 schol-

arships from more than \$27,000 in funding provided by A.O. Smith Water Heaters, Bradford White Water Heaters and Delta Faucet Company.

The winners are:

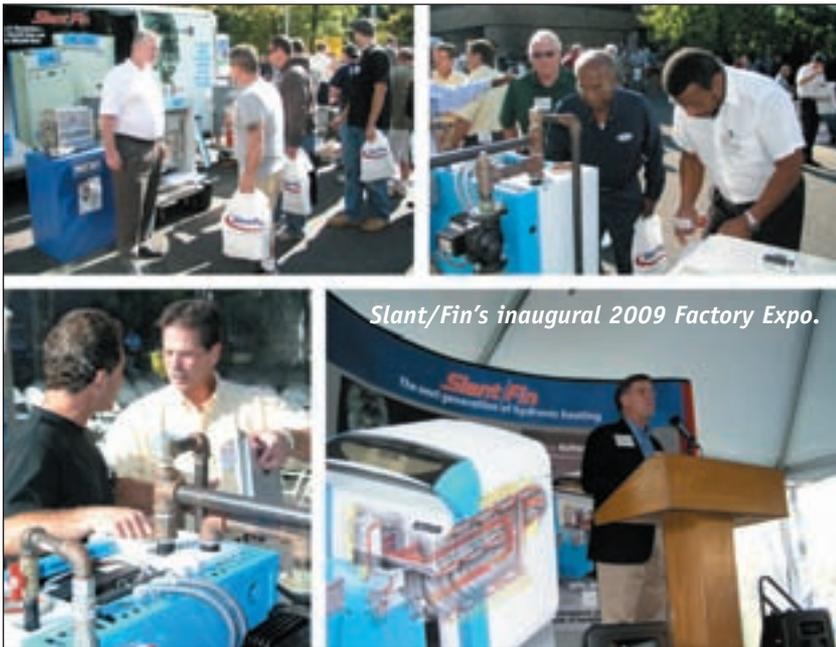
Steven Beetz, St. Louis — \$2,500.

William Andrew Kibler, Winston-Salem, N.C. — \$1,500.

Jarad DeWolfe, Boylston, Mass. — \$2,500.

Jonathan Macone, Stoneham, Mass. — \$2,500.

Slant/Fin's 2nd Factory Expo set



Slant/Fin's inaugural 2009 Factory Expo.

Slant/Fin will hold its second Factory Expo Sept. 16th. The event is free to current wholesalers and all interested contractors. Pre-registration is requested. The event will highlight Slant/Fin's newest Lynx boiler along with its other hi-efficient products. There will be vendor exhibits and seminars with the main event being an hour-long seminar by Dan Holohan. Slant/Fin expects over 200 contractors and wholesalers along with several vendors including PHC News. Interested parties please call 516-484-2610 ext 283 and speak with Stacey B. Droogan

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Smartphone technology boosts bottom lines

BY MARK BRUNO,
digital media manager

According to a recent article on the website Tech Crunch, a Berlin-based research organization that specializes in mobile technology recently forecasted the worldwide smartphone application market to reach \$15 billion by 2013. The firm, Research2Guidance.com, claims the global smartphone app market has, in fact, already reached \$2.2 billion in the first six months of this year. And where once the development of smartphone applications was squarely in the realm of big business budgets, small business owners are now getting into the game as well.

Two ways in which apps can help your business include attracting new customers and improving customer service. Contractors can use apps to create awareness of their services by providing users with easy mobile access to a company web site, Twitter and Facebook page, email and phone number. Customer service can be improved by giving current customers access to your services with greater ease.

Apps allow small contractors to operate more like larger shops, which often have dedicated staff to improve their workflow. A perfect example of all this in action is Clockwork Home Services' iPhone app, which allows customers to find plumbing, electrician, heating and air condition-

ing experts in their area. Customers can even request service directly from the app itself.

Manufacturers are also using smartphone apps in new and unique ways to drive profits and attract new customers. RIDGID, for example, has incorporated Microsoft Tags into their advertisements. With an app called "TagReader," customers can scan specially created images with their phone, which then might open a webpage, display a message, or dial a number. And there are no long URLs to type or SMS messages to send. Starting this month, the entire RIDGID ad schedule will have Microsoft tags.

"As [*Phc News*] readers know all too well, time is money," said RIDGID's Steve Dyer, director of marketing communications. "Anything that we can do to help the contractor spend less time in the office and more time in the field adds to their bottom line. With the use of tag technology, in less than 30 seconds you get a wealth of content from product specs to video and opportunities to ask for more info and request demonstrations."

Between documenting expenses and processing credit cards from just about anywhere in the U.S., smartphone applications have changed the way many small businesses operate. Now, there are even more reasons why mechanical contractors and manufacturers can turn to these apps to enhance the way customers interact with their products and services — and even boost their bottom lines. ■



See RIDGID's ad on page 15

NEXT ISSUE...

- *A New Look for Phc News!*
- *Truck & Tool Usage Survey*
- *Franchising*

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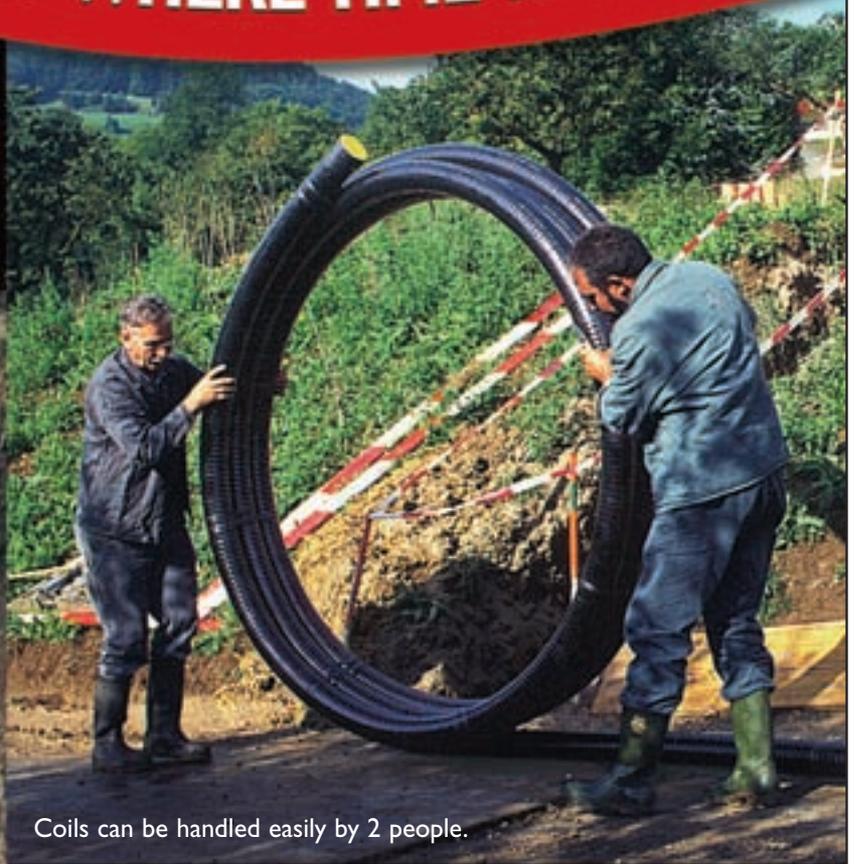
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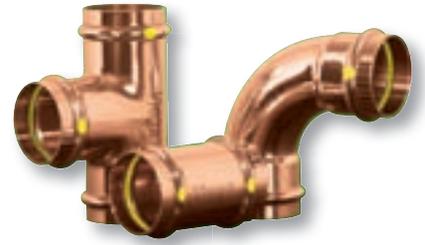
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1899

Franz-Anselm Viegener starts Viega Co. with the first brass beer tap.



1901



Viega starts manufacturing plumbing fittings.

Viega starts producing copper solder fittings.



1963

Production of plastic tubing, PureFlow® PEX products begins.



1996

Viega stainless press technology launches in the U.S., ProPress® Stainless.



2008

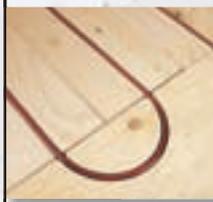
2009



Viega's copper press technology launches in the U.S., the ProPress® System.



Viega opens the largest PEX Manufacturing and Distribution Center of its kind in McPherson, KS.



The first PEX radiant floor heating in the U.S., the ProRadiant™ system, is introduced.

Viega's heritage of innovation and quality began in Attendorn, Germany in 1899 when Franz-Anselm Viegener introduced a new design in brass beer taps. By 1901, the company evolved and began manufacturing home plumbing products.

Nearly a century later, the Viega North American story begins. In 1999, the family-owned Viega decided to offer a selection of Viega products in the United States. In the same year, Viega started to market a totally new system of ProPress fittings and valves to connect copper pipe, opening the door to the future of the plumbing industry.

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