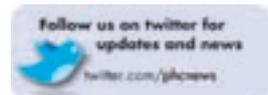


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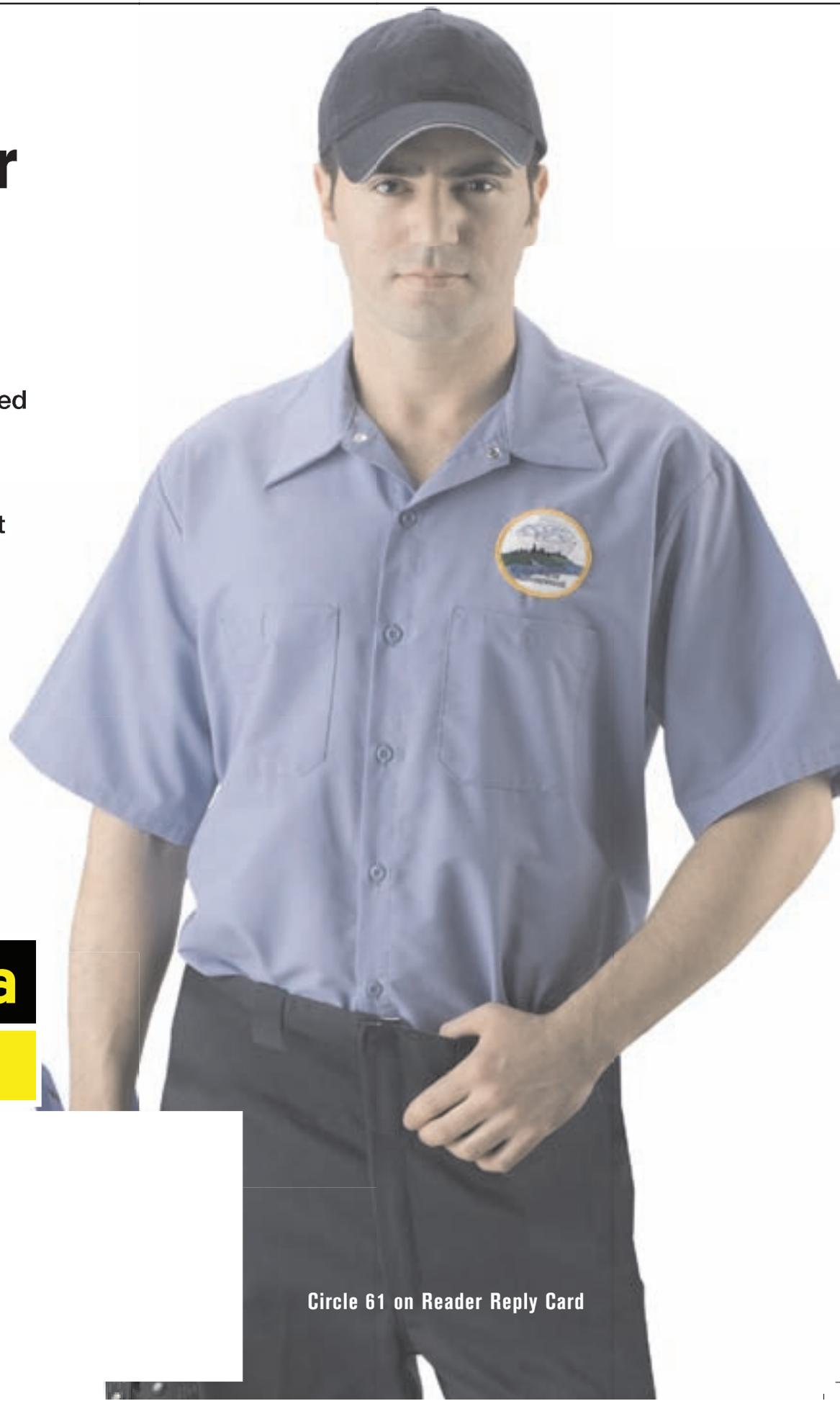
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## August 2010

<b>Aug. 10-11</b>	<b>Radiant Design &amp; Software</b>
<b>Aug. 12-13</b>	<b>Radiant Piping and Controls</b>
<b>Aug. 16-17</b>	<b>Manual J Heating and Cooling Loads</b>
<b>Aug. 18-20</b>	<b>Geothermal and Solar</b>
<b>Aug. 23-24</b>	<b>CAD 101</b>
<b>Aug. 24-25</b>	<b>NFPA 13D Fire Sprinkler</b>

## September 2010

<b>Sept. 1-2</b>	<b>Snow and Ice Melting</b>
<b>Sept. 13-17</b>	<b>Radiant Week</b>
<b>Sept. 20-21</b>	<b>CAD 101</b>
<b>Sept. 22-23</b>	<b>NFPA 13D Fire Sprinkler</b>
<b>Sept. 27-29</b>	<b>Hydronics 101 and Radiant Systems</b>

## October 2010

<b>Oct. 5-6</b>	<b>Radiant Design &amp; Software</b>
<b>Oct. 7-8</b>	<b>Radiant Piping &amp; Controls</b>
<b>Oct. 19-21</b>	<b>Hydronics 101 &amp; Radiant Systems</b>
<b>Oct. 26-27</b>	<b>CAD 101</b>
<b>Oct. 28-29</b>	<b>Fire Sprinkler</b>



## Package Prices *Each package includes meals*

<b>A</b>	
Two Day	\$450
Three Day	\$525
Week Long	\$600
Includes training, hotel, airfare and tool	
<b>B</b>	
Two Day	\$350
Three Day	\$425
Week Long	\$500
Includes training, hotel and airfare	
<b>C</b>	
Two Day	\$250
Three Day	\$325
Week Long	\$400
Includes training, hotel and tool	

<b>D</b>	
Two Day	\$200
Three Day	\$275
Week Long	\$350
Includes training and hotel	
<b>E</b>	
Two Day	\$150
Three Day	\$225
Week Long	\$300
Includes training and tool	
<b>F</b>	
Two Day	\$ 99
Three Day	\$150
Week Long	\$225
Includes training	

<b>2-Day Classes</b>	
Day One	8:30-4:30
Day Two	8:30-2:30
<b>3-Day Classes</b>	
Day One	8:30-4:30
Day Two	8:30-4:30
Day Three	8:30-2:30
<b>Week Long Classes</b>	
Day One	8:30-4:30
Day Two	8:30-4:30
Day Three	8:30-4:30
Day Four	8:30-4:30
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# ***Phc News***

**plumbing & hydronic contractor news**



***Kimbel Mechanical thrives through efficient execution***

***Water heating trends – Page 43.***



***Dog day afternoons – Page 46.***



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- LP/Gas fired condensing boiler, 80-500 MBH
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Burnham  
**Sage2™**  
boiler control system

Producing an ultra-high efficiency condensing boiler is one thing. Making it easy to install and use is quite another. The Burnham Alpine boiler delivers an impressive 95% AFUE, but is also very easy to install, set up, and use. Offering single side connections, single point power, a unique patent pending condensate trap, and controls which are sealed and separated from the lower jacket, every aspect of the Alpine boiler has been engineered for ease of use and longevity.

Thanks to the new Burnham Sage2 control system, the complex nature of computer controlled boiler control systems has been streamlined and simplified as well. By using a touchscreen interface, the Sage2 puts an impressive array of boiler control features at your fingertips... literally. What's most impressive about the Sage2 is that this information is easy to access and understand thanks to it's intuitive menu design which displays information in clear, simple statements, not cryptic codes. The design of this interface also eliminates the frustrating, seemingly endless scrolling associated with many other boiler control systems.

Come see the Alpine boiler and the Sage2 control system at NAOHSM, in booth 423.



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- Improved installation flexibility with the direct vent option (up to VR1-33), which eliminates the need for a chimney or combustion air supply opening



### VITODENS 200-W

The new Vitodens 200 gas-fired condensing boiler features unparalleled performance, reliability and comfort.

- Highest efficiency of up to 98%
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- Viessmann made stainless steel Inox-Radial heat exchanger and MatriX cylinder burner for proven long-term reliability and performance

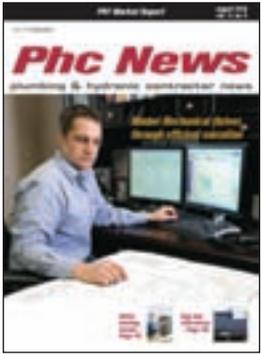
[www.viessmann-us.com](http://www.viessmann-us.com)  
1-800-288-0667

Vitorond 100 may not look exactly as shown.  
Vitotronic control and Beckett burner options shown.

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**On the Cover**

Arkansas-based Kimbel Mechanical's project manager, Brandon Batchelor, bids on a project. Kimbel thrives though efficient execution, while the company also blends quality and discipline.

Story on page 54.

**Features**

**43 Trends in water heating**

Soft, flat and steady are the buzzwords when describing the water heating economic forecast.



**46 Dog day afternoons**

Johnson County Parks, Olathe, Kan., needed a solar-powered restroom to go off-grid. Heritage Park's dog park restroom features a solar thermal and PV system the allows the building to be used year round. Bob Dolan, BMK Plumbing & Solar of the Midwest, was the man for the job.



**Phc News**

plumbing & hydronic contractor news

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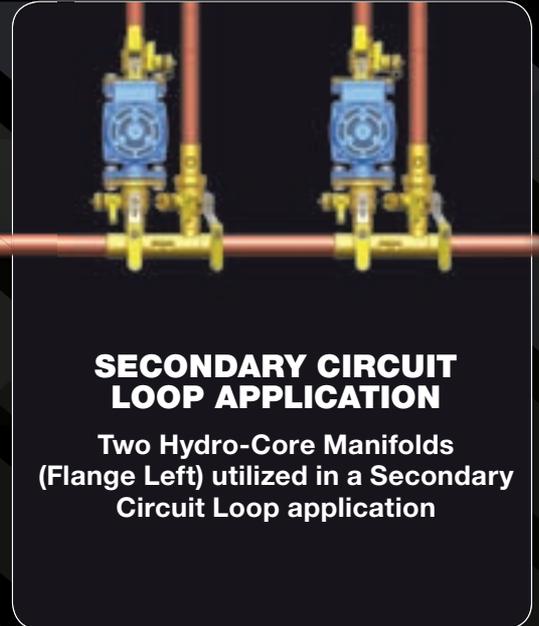
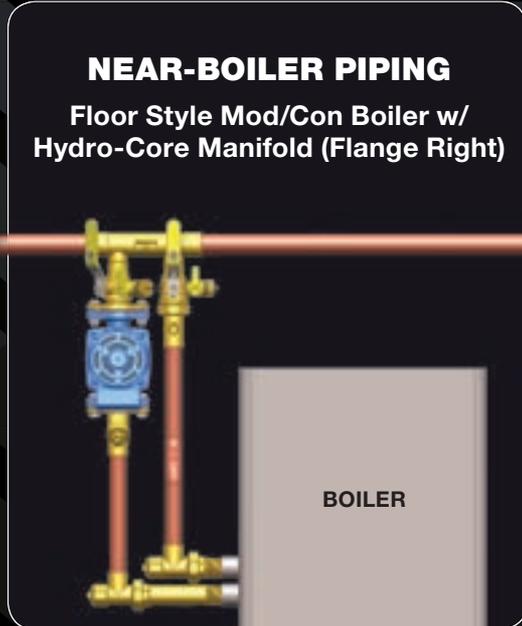
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## Zurn opens inventory distribution center

PHILADELPHIA — On June 14, 2010, Zurn Industries, LLC opened the doors to a new inventory distribution facility in Philadelphia. This change brings Zurn's total inventory distribution footprint to over 1.7 million square feet in North America.

The new distribution facility has a total footprint of 82,000 square feet. This facility will grow Zurn's distribution in the area by nearly 70% and will increase Zurn's service levels to their customer base in the Northeast and mid-Atlantic regions.

The expanded warehouse facility will be set up around improved customer service, utilizing lean principles and will include:

- Final Assembly Cells — allowing Zurn to customize product to their customer specifications closest to the customer.
- Complete Training Facility — allowing Zurn to conduct training sessions with local engineers, contractors and distributors, which will include Zurn product displays, promotional items and literature.

- Improved Will Call Area — making customer pickup easier.

- Focused Customer Service Team — responding to the voice of the customer in the region.

- Significantly Expanded Stocking Position — the right product available at the right time in the right location for improved regional service.

- Efficient Operations — allowing Zurn to receive and ship product more efficiently with quicker customer response times.

For more info, [www.zurn.com](http://www.zurn.com).

### NAOHSM's 5th Annual Oil Heat Retreat moves

LANCASTER, PA. — The National Association of Oil Heating Service Managers (NAOHSM) will hold its 5th Annual Oil Heat Retreat from September 9-12, 2010 in downtown Lancaster. "When you think of Lancaster, you think of Amish, buggies, the countryside and the outlets. Well, there is more to the county than what is on Route 30. We actually have a very historic city, thus Lancaster City will be the site of our next Oilheat Retreat," said Judy Garber, executive administrator of NAOHSM.

For more info, [www.naohsm.org](http://www.naohsm.org).

## Supply New England recognizes Slant/Fin factory representative

ATTLEBORO, MASS. — Supply New England has presented a Manufacturer's Rep of the Year Award to David Marcotte of Slant/Fin Corpo-



ration. The award was presented to him recently by David Corcoran,

president of Supply New England, and the company's management team on behalf of the employees of Supply New England.

This is the second time Marcotte has been recognized by Supply New England.

## Haws' Hayes to present ANSI Z358.1-2009 workshop at VPPPA

SPARKS, NEV. — Haws Corporation's® director of Engineered Solutions, Casey Hayes, will be presenting at



the Voluntary Protection Programs Participants' Association Conference, August 23-26, Orlando. Hayes will be presenting a workshop titled *ANSI Z358.1-2009 Emergency Eye-*

*wash/Showers — Tepid Water in the Workplace.* The presentation will include 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 10 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.

high school and college, who are preparing for careers in technical, skilled and service occupations, including plumbing occupations.

More than 15,000 people — including students, teachers and business partners — participated in the week-long event. More than 5,000 outstanding career and technical education students competed hands-on in 91 different trade, technical and leadership fields.



was again held in downtown Kansas City, Mo. from June 20 - June 25. SkillsUSA is a national organization serving teachers and students from

Sioux Chief congratulates all of the National Conference attendees, as well as the champions for each field.

## In brief

### Schier Products has moved

After nearly 40 years in Wisconsin, Schier Products announced that it has moved to Edwardsville, Kan. Schier's new property provides the needed increase in production space and will help improve shipping times to virtually all points throughout the United States.

Schier Products  
9500 Woodend Road  
Edwardsville, KS 66111  
(800) 827-7119

### Tyco Fire Suppression & Building Products launches new GRINNELL products website

LANSDALE, PA. — Tyco Fire Suppression & Building Products has launched its newly re-designed



GRINNELL Products website ([www.grinnell.com](http://www.grinnell.com)). The website provides customers with a more interactive, user-friendly experience. It features new innovative online tools and resources to help mechanical and fire protection professionals successfully install a grooved piping system using GRINNELL Products.

### Parker Fluid Control launches new website

NEW BRITAIN, CONN. — Parker Fluid Control Division, manufacturers of the Skinner and Gold Ring lines of solenoid valves and the Sinclair Collins line of process control valves, launched a new website — [www.ParkerFluidControl.com](http://www.ParkerFluidControl.com) — that eases manufacturer and OEM searches for local distributors of the division's valve products.

### The Service Roundtable Business Alliance adds solar

DALLAS — The Service Roundtable ([www.ServiceRoundtable.com](http://www.ServiceRoundtable.com)), an Internet-based contractor business alliance supporting HVAC, plumbing, and electrical contractors, will now support solar contractors.

The "Solar Roundtable" will be headed by leading sales trainer and consultant, Jim Hinshaw. Since 2007, Hinshaw has trained more than 1,000 solar contractors on the sales and business side of contracting.



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## NFPA issues alert on residential fire sprinkler systems

THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) issued a safety alert related to buildings equipped with residential fire sprinkler systems containing antifreeze solutions. Following a recent fatal fire incident which prompted a research study and a series of fire tests, there has been concern raised over the potential for the antifreeze solution in the residential fire sprinkler system to ignite in certain fire situations.

According to the NFPA, any system that contains antifreeze should have the antifreeze drained from the system and replaced with water. NFPA is recommending that those who are responsible for a residential occupancy with a fire sprinkler system should have a fire sprinkler contractor test their system for antifreeze. NFPA also advises that all residential fire sprinkler systems currently being installed should avoid designing or installing a

system that would require antifreeze.

Antifreeze systems were first recognized and approved for use in residential occupancies in the 1989 edition of the NFPA fire sprinkler installation standards. More information regarding NFPA's safety alert on antifreeze in residential fire sprinklers or the list of recommended action to take for systems containing antifreeze can be found at [www.nfpa.org/antifreeze](http://www.nfpa.org/antifreeze).

## Franklin Electric adds mobile training facility

BLUFFTON, IND. — Franklin Electric announced the addition of a mobile training facility to its technical toolbox of service and training options, providing mobile, hands-on customer support opportunities to the water systems industry.

This new mobile training facility is the latest tool added to Franklin's already extensive training portfolio, which includes FranklinTECH factory training, on-the-road seminars, field

service support and a technical service hotline. The facility focuses on two major product areas: drives for con-



stant pressure apps and sump, sewage and effluent pumps. This mobile unit easily can be converted to showcase one or the other of these product lines, allowing Franklin to take prod-

ucts and training directly to the distributor, contractor and installer.

Easily maneuverable, this truck trailer combination allows Franklin Electric to participate in a wide variety of events within the continental United States. Franklin personnel present all training and demonstrations in this rolling showcase.

For info, [www.franklin-electric.com](http://www.franklin-electric.com).

## Bradford White sponsors 2010 NFL Alumni Philadelphia Chapter Charity Golf Classic

AMBLER, PA. — Bradford White was the Presenting Sponsor of the 2010 NFL Alumni Philadelphia Chapter Charity Golf Classic. The fund raising event was hosted by Ron Jaworski's Running Deer Golf Club in Pittsgrove, N.J.

In the fundraising efforts, Bradford White donated \$25,000 dollars to the NFL Alumni Philadelphia chapter. The net proceeds from the Philadelphia Chapter NFL Alumni tournament are donated to various local youth charities.



Bradford White's vice president — sales & marketing, Bruce Carnevale (r), presents Ron Jaworski with a check for \$25,000 to the NFL Alumni Philadelphia Chapter during the 2010 NFL Alumni Philadelphia Chapter Charity Golf Classic.

## In brief

### American Standard Brands acquires Safety Tubs

PISCATAWAY, N.J. — American Standard Brands announced it has acquired Safety Tubs, LLC, a privately held U.S. business specializing in the design and manufacturing of walk-in bathtubs for those with limited mobility, including the elderly, obese and disabled. Safety Tubs will operate independently as a subsidiary of American Standard Brands called Safety Tubs Company, LLC, and will be part of a dedicated division for Assisted Living. Safety Tubs CEO, Rob Buete, will become vice president and general manager of Safety Tubs and Assisted Living. For more info, [www.americanstandard-us.com](http://www.americanstandard-us.com).

### Grand Hall offers contractor reward program

GARLAND, TEX. — Grand Hall recently announced the Contractor Points Reward Program designed to support advanced training and specialized expertise for contractors on the company's new Eternal Condensing Hybrid Water Heaters. Contractors can easily register online via Eternal's Dashboard system and are eligible to earn points for every water heater installed, as well as attend online classes, submit warranty registrations and surveys.

For more information, [www.eternalcondensed.com](http://www.eternalcondensed.com).

### ASHRAE president to address HVACR industry

WASHINGTON — Gordon V.R. Holness P.E., president of ASHRAE, will address Industry Trends with Major Shifts in System Design and Application during the 2011 HVAC Excellence National HVACR Educators and Trainers Conference March 20-22, 2011, Las Vegas.

### More language options open on Reed website

ERIE, PA. — Reed Manufacturing is developing landing pages in several languages to allow our website to provide a worldwide welcome to visitors.

In July, Reed opened the new landing page for French-speakers at [www.reedmfgco.com](http://www.reedmfgco.com). Choose the map in the upper right of the homepage and choose the French option.

Additionally, the Plastic Pipe Tools chapter — Herramientas para tubos plásticos — is now open in Spanish.

## Trethewey tabbed for CIPHEX West

CALGARY, ALBERTA — More than 2,500 industry delegates will attend CIPHEX West 2010 at the BMO Centre at Stampede Park in Calgary November 3-4. Delegates to the trade show and conference are in for a special treat. Richard Trethewey, from television's *This Old House* has joined the extensive speaker lineup and will reveal all he knows in a presentation entitled *Lessons in a Lifetime of Heating and Cooling*.

CIPHEX West attracts those involved in the sale of plumbing, heating, hydronic (hot water) heating, solar heating, ventilation, air conditioning and refrigeration equipment, electrical equipment, fire prevention, natural gas equipment, water treatment systems, tools, and kitchen and bath fixtures.

For info, [www.ciphexwest.ca](http://www.ciphexwest.ca).

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## Contractor donates \$1.6 million building to for senior citizens

CHICAGO — The founding family of Scheck Industries, a major Midwest contracting firm, has donated a building valued at more than \$1.6 million to Seguin Services, Inc., to help enrich the lives of seniors. This donation is the latest effort in the family's legacy of community care, which spans more than 20 years.

The Scheck family donated Rascal's Restaurant in La Grange Park, Ill., to Seguin, a non-profit agency that assists children and adults with disabilities. The donation was made by Richard and Judy Scheck, Rick and Megan Scheck, Mike and Kate Scheck, and Chris Scheck, in memory of the late Betty Scheck.



The Scheck family at the recent dedication ceremony for the Betty Scheck Senior Center in La Grange Park, Ill. From left, Mike and Katie Scheck, Rick and Megan Scheck, Judy and Richard Scheck, and Chris Scheck.

"This is the largest single donation to Seguin in its history, and as our nation faces difficult economic times, it is wonderful to see that philanthropy is still alive and well," said John Voit, president and CEO of Seguin. Richard and Betty Scheck were married for 29 years and lived in North Riverside, Illinois. The Scheck family had always felt they should give back to the community. The concerns that seniors and their families face were close to their hearts since they cared for Richard's mother, who had Alzheimer's disease, before her death. Betty cared for her mother-in-law personally for several years, so she realized the many concerns that individuals must face as their relatives grow older.

Seguin converted the restaurant into the Betty Scheck Senior Center, which offers day services and activities to seniors with and without developmental disabilities and other special needs. The Scheck Family sees this donation as a wonderful, enduring tribute to Betty.

Today, Scheck Industries, based in Countryside, Ill., is an industry leader in the fields of power and process piping, pipe and modular fabrication, instrumentation, HVAC and boiler services.

### In brief

#### Milwaukee® begins transition from V28™ to M28™

MILWAUKEE — Over the next several months, Milwaukee Electric Tool Corporation will transition all V28™ cordless power tools to the new M28™ LITHIUM-ION battery pack. While providing an improved battery pack with more advanced electronics, the new M28™ LITHIUM-ION system will be completely compatible with current V28™ products, as the tools themselves will not change.

For more information, visit [www.milwaukeetool.com](http://www.milwaukeetool.com).

#### Social media best practices webcast for construction slated

NAPERVILLE, ILL. — The Construction Marketing Association (CMA) announced a webcast panel discussion, "Social Media Best Practices for Construction," September 15 at noon CST.

The free webcast will feature panelists from such leading construction brands as Caterpillar, USG and Emerson Electric. Panelists will share how their construction brands utilize social media, how social media integrates with other Internet initiatives, what results have been realized, how to measure, and more. The panel will discuss use of blogs, Facebook, Twitter, YouTube, LinkedIn, and microsites.

Panelists include Kevin Espinosa from Caterpillar, Melissa York from USG and Carrie Halle from Knaack Div. Emerson Electric (bios below). The panel will be moderated by Neil M. Brown, Chairman of the Construction Marketing Association.

To register for the discussion, [www.constructionmarketingassociation.org/CMI\\_Events.cfm](http://www.constructionmarketingassociation.org/CMI_Events.cfm).

#### NM inventor invents frozen pipe protector

ALBUQUERQUE, N.M. — A native Albuquerque inventor has invented a unique product that protects frozen pipes from bursting when frozen. Dennis Salazar created ICE-LOC, an innovative silicone sponge that can be placed in any plumbing system. It protects frozen potable pipes from rupturing or bursting. When water freezes it expands and puts pressure on the pipes, causing them to rupture; ICE-LOC absorbs this pressure allowing ice to expand and protect pipes.

For info, [www.iceloc.com](http://www.iceloc.com).

## RIDGID announces RIDGIDConnect contest winner

ELYRIA, OHIO — RIDGID® announced the winner of its RIDGIDConnect™ Sweepstakes promotion. A single grand prize winner, Pat Grogan, a Topeka, Kan. resident, and owner of Pat the Plumber, was randomly chosen to receive a prize package valued at more than \$25,000.

The prize package included:

- Subscription to RIDGIDConnect Online Business Tool for One Year;
- RIDGID LT1000 Laptop Interface;
- RIDGID Mini-SeeSnake® Plus Inspection System;
- Dell® Ruggedized XFR Laptop Computer with RIDGID software;
- SeekTech® SR-20 Locator and ST-305 Transmitter;
- microReel Pipe Inspection System;
- microEXPLORER® Inspection Camera;
- DVD Pak Monitor with OLED Display;
- RIDGID RP-210 Press Tool with ProPress® Jaws;

- Olympus® Stylus Tough Digital Camera;
- Flip® UltraHD Video Camera;
- GlobalSat Bluetooth GPS Receiver;
- SeeSnake® Interconnect Cable;

and

- Various Articles of RIDGID Gear
- RIDGID representatives delivered the prize package to Grogan's plumbing services business on July 29, 2010.



RIDGID team consisting of (from left to right) Dan Klug, Owen Primavera, and Cliff Wells. Followed by the owner of Pat the Plumber, Pat Grogan, followed by Clayton Bevitt and Kylie Mason.

# Piping solution withstands heat in flood disaster

**Installed in 2008 for its durability in a utility tunnel, Aquatherm's polypropylene-random piping didn't melt or leak despite being submerged along with 380°F steam piping**

In early May, record-breaking flash floods in Tennessee, Mississippi, and Kentucky killed dozens of people and destroyed homes and businesses throughout the region. Nashville was hit particularly hard, and several businesses and institu-

tions (such as the storied the Grand Ole Opry, which was forced to reschedule events at various venues around Music City) were devastated. While the Cumberland River, which reached a 70-year high — 12 feet above flood stage — slowly receded, facility managers struggled to repair damages and remove flood waters from their properties. Tim Cook, special equipment repair lead technician with Vanderbilt University in Nashville, and his staff were faced with the dilemma of trying to deal with a flooded 5,000-foot-long V-shaped utility tunnel.



*This is the low point of sump pit in the utility tunnel prior to the sump pumps and the Aquatherm Climatherm piping being connected. The system, which provides the Vanderbilt power plant with cooling tower make-up water, was flooded in May, and the piping was essential to removing the water from the tunnel.*

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## The underground background

The tunnel was dug about a decade ago to depths ranging between 100-140 feet to transport electrical conduit, steam supply, steam condensate, 300 psi natural gas, chilled water and pneumatic control lines. Eight and a half feet in diameter, it runs between the university power plant and the Monroe Carell Jr. Children's Hospital at Vanderbilt.

When the tunnel was originally dug, an aquifer or spring was hit, causing the tunnel to flood. So a sump pit was

dug and the water was pumped out and used for irrigation. However, in September 2003 the university decided to try using the water for cooling tower make-up and to save money. The tunnel was penetrated at a point directly through the rock where it was

determined the main source of water was flowing. It quickly became apparent that there was not constant water available from this point, as well as too much sediment in the water and undersized water softeners. Thus, this first effort failed.

But all of this was only part of Cook's problem back in 2008. The combination of groundwater seeping in from natural springs, rainwater trickling in, and condensate building up in the space had taken their toll on the existing galvanized steel piping. Additionally, some joints were leaking.

So in spring 2008, with a failed attempt at using the unreliable water source and leaking steel pipe affecting the university's bottom line, Cook was charged with solving these problems. "The first issue was to have a reliable constant source of water, which was from a collection sump at the low point of the tunnel," Cook said.

"To do this we had to install two submersible pumps and add an additional 1,000 feet of pipe, as well as remove the old source connection." He called the local Ferguson Enterprises, Inc. office for some assistance and

advice. Ferguson sales assistant Rick Hollis, and outside sales representative Cale Fuller, consulted with Cook and other Vanderbilt facility staff and they reviewed the options: PVC, HDPE, steel, and polypropylene.

While each option had its strengths, "The joint integrity offered by Aquatherm's polypropylene piping, which uses a unique heat fusion process to create seamless joints, made it a better fit hands down," according to Hollis. Ferguson provided the V.U. staff with an Aquatherm demonstration, explaining how the pipes and fittings are correctly joined and installed.

"We decided to go with Aquatherm because we don't think we'll have any problems with it and if we do they will be easy to fix," Cook said in 2009. "It was a bit more expensive than some of the other options, but we decided that since it's a wet, damp environment the product would be the way to go. We liked everything about it," he added. Considerable installation time savings also resulted from the selection of the

the plant's cooling towers. The system also features a three-inch Climatherm line to the main plant for flushing the lines to a sewer.

The entire tunnel flooded on May 2, and water rose above the tunnel's debris barrier, allowing insulation and other materials to wreck the sump pumps. Thus, water filled the entire space, reaching 40 feet up the tunnel's 110-foot vertical section.

"All the steam and electrical lines were submerged and we couldn't pump anything out. The steam lines were still live and at around 380 degrees (F). Over the course of a couple of days we brought in rental pumps, but the water kept coming," Cook said.

"The steam lines heated the tunnel and its contents to the point where the plastic light fixtures melted, but the Aquatherm stayed completely intact. We were amazed that it held up and it was a saving grace," he added. Using a supplemental sump pump and the Aquatherm piping, the V.U. staff was able to get the old pumps out and in-



*The Aquatherm pipes, with check valves, withstood high temperatures.*

Aquatherm piping, but the pipe's durability would be truly tested and proven during the 2010 flood.

## 'Amazing'

In the deepest part, where the tunnels meet at the "V," two Gorman-Rupp submersible pumps are tied into Aquatherm Climatherm polypropylene-random pipe in order to remove the ground water and bring it to the plant where it is softened and used in

stall new ones and remove all of the water in about three days.

"The tunnel water pumps did their job and the pipe held up — not a leak. That the fused piping, which is welded via a heat fusion process, held up when the lighting fixtures could not was pretty amazing," said Cook, who added that Aquatherm will certainly be "in the thought process for any future piping projects on campus." ■

# Controlling the Cup

VICTORIA, BC — At one time in the not too distant past, FNB Stadium was a somewhat bland soccer facility lost in the Soweto sprawl and known only to the rest of the world as the site of Nelson Mandela's first speech in Johannesburg after his historic release from prison. And so the dusty stadium would have remained, but when South Africa was awarded the 2010 FIFA World Cup, an extensive makeover was in order. Indeed, even the name would change as the outdated FNB Stadium received a complete makeover to the tune of 1.5 billion rand.

For the lion's share of June and July, the 94,000 seats of the newly-named Soccer City Stadium was a vibrant flood of patriotic colors amid the hum of swirling vuvuzela horns. At the center of the action is

the striking exterior of the refurbished stadium — designed to have the appearance of an African pot; the cladding on the outside is a mosaic of fire and earthen colors with a ring of lights running around the bottom of the structure, simulating fire underneath the pot.

An important component of the ground-breaking makeover of FNB Stadium included the installation of a Reliable Controls® MACH-System by the South African Authorized Dealer, Redbase Systems.

With a mixture of environments and large-scale needs, Soccer City Stadium was loaded with an impressive list of conditioning equipment that includes 347 water source heat pumps, 134 fans, 14 air handler units and four computer room units. The main plant



Formerly FNB Stadium, Soccer City Stadium in Johannesburg underwent a major upgrade for the 2010 FIFA World Cup by transforming the 80,000-seat venue into a unique structure inspired by the shape of an African pot. Soccer City is currently the largest stadium in Africa with a capacity of 94,700 seats.

room was populated with four cooling towers, and four secondary condenser water pumps controlled on differential pressure.

Desmond Cory, a member of Redbase Systems, describes the MACH-Global™ as the workhorse of the installation, "We have two fully-loaded MACH-Global™ controllers. We are using the two subnetworks on the one MACH-Global™ controller to pick up the MACH2™,

MACH1™, and MACH-Zone™ controllers."

The entire installation is BACnet®, which allows for integration into a third-party's electrical power controls system.

Congratulations to Desmond Cory and his team for a winning job on the world stage.

Read the entire Soccer City Project Profile at: <http://www.reliable-controls.com/projects/overview>.

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U.S. average	2.735	↑	U.S. average	2.928	↓
East Coast	2.673	↓	East Coast	2.934	↓
New England	2.735	↓	New England	3.009	↓
Central Atlantic	2.712	↓	Central Atlantic	3.020	↓
Lower Atlantic	2.626	↓	Lower Atlantic	2.890	↓
Midwest	2.695	↑	Midwest	2.900	↓
Gulf Coast	2.583	↓	Gulf Coast	2.887	↓
Rocky Mountain	2.754	↓	Rocky Mountain	2.937	↓
West Coast	3.073	↑	West Coast	3.071	↓
California	3.129	↑	California	3.132	↑

## METALS

<b>*Copper</b> \$3.32/lb. <span style="color: red;">↑</span>	<b>*Aluminum</b> \$.99/lb. <span style="color: red;">↑</span>
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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](http://metalprices.com).

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## Mr. Rooter® elite recognized with awards

WACO, TEXAS — Mr. Rooter Corporation recognized a select group of franchisees and team members during its international convention in San Antonio, Texas, June 20-23.

This year's award recipients are:  
**Pioneer (Lifetime Achievement)**

- Vinnie Sposari — Seattle

**Franchisee of the Year**

- Steve Kaldis, Patrick O'Connor and David Abrams — Burnaby, British Columbia, in Canada



The Pioneer Lifetime Achievement Award winner, Vinnie Sposari, is ready to roll.

**Sales Leader of the Year (more than 500,000)**

- Steve Kaldis, Patrick O'Connor and David Abrams — Burnaby, British Columbia, in Canada

**Sales Leader of the Year (less than 500,000)**

- Paul & Saunda Kitchen — Santa Rosa, Calif.

**Excellence in Mentoring**

- Andrew and Sheryl August — Freehold, N.J., and Pompano Beach, Fla.

**Excellence in Leadership**

- Boo White — Bozeman, Mont.

**Woman of the Year**

- Michelle Aliotti — Santa Cruz, Calif.

**Rookie of the Year**

- Heath and Heather Vickers — Macon, Ga.

**Service Leader of the Year**

- Dan Burleson — Colorado Springs, Colo.

**Technician of the Year**

- Dan Rushford — Santa

Rosa, Calif.

**Office Professional of the Year**

- Debbie Pezoldt — Bozeman, Mont.

"Mr. Rooter Plumbing is a stronger company because of these award recipients," said Mary Kennedy



From l-r: Mary Kennedy Thompson, president of Mr. Rooter; Patrick O'Connor, Steve Kaldis, David Abrams; and Dina Dwyer Owens, CEO of The Dwyer Group, Inc.

Thompson, president of Mr. Rooter Corporation. "They share their time, ideas and support within our network while providing their communities with professional and customer-focused services."

## Rheem announces its top 10 contractors

FORT SMITH ARK. — Rheem announced its Rheem Team Top 10 Top Contractors for 2009. The Rheem Team Top 10 Top Contractors for 2009 surpassed hundreds of other contractors across the country in sales, customer support and overall performance with local homeowners. Taking the top spot for another year is Air Around The Clock, a Coral Springs, Fla. based contractor.

"The companies on the 2009 Rheem Team Top 10 Top Contractors list have demonstrated an out-

standing dedication to providing dependable, professional services to their clients," said Gary Wehunt, Rheem manager of contractor retention and development. "Each of them is recognized for their industry expertise, fantastic customer service and commitment to providing quality comfort systems."

The 2009 Rheem Team Top 10 Top Contractors are:

- Air Around The Clock, Coral Springs, Fla.

- Alaskan Home Services, Tempe, Ariz.

- All Year Cooling, Plantation, Fla.

- Aztal Air Conditioning & Heating, West Palm Beach, Fla.

- Chancey & Reynolds, Inc., Knoxville, Tenn.

- Estes Heating & Air Conditioning, Inc., Theodore, Ala.

- Isaac Heating & Air Conditioning, Rochester, N.Y.

- Thiele Heating & Air Conditioning, Indianapolis

- U.S. Air Conditioning & Heating, New Port Richey, Fla.

- Vickrey Heat & Air, Inc., Claremore, Okla.

For info, visit [www.rheem.com](http://www.rheem.com).

## Design-Build Institute of America releases revised contract documents

WASHINGTON — The Design-Build Institute of America (DBIA) introduced a family of standard contract document forms over a decade ago. Since then, the number of owners relying on the design-build project delivery method has increased exponentially. In the process, design-build team members have gained expertise and case law has evolved to address issues unique to design-build. In response, DBIA has released the next generation of contracts that address these issues and incorporate industry advances of the past decade.

"DBIA contracts remain the most balanced design-build forms in the

industry," said Michael C. Loulakis, Esq., DBIA, president and CEO of Capital Project Strategies, LLC, and a member of the DBIA committee charged with the revisions. "The refinements made to the contracts allow the parties flexibility to consider a variety of commercial approaches — all consistent with current best practices."

The 2010 documents reflect DBIA's original risk allocation approach that distributes risk to the participant best able to manage it in the most cost effective manner. And, like the originals, the new documents recognize the need for flexibility. As a result, the new

contracts are user-friendly documents that are short on legalese and allow parties to customize contracts to their projects.

There is more than one way to address any contractual issue — be they time-related provisions or ones specifying ownership of design documents. "The menu approach will encourage the parties to discuss difficult contractual issues at the outset of their relationship," explained Bennett Greenberg, Esq., DBIA, a partner at Seyfarth Shaw LLP, and the Chair of the DBIA Contract Committee. "These conversations help owners and the design-build team arrive at a contract tailored to the unique project and each party's risk tolerance."

For more info, [www.dbia.org](http://www.dbia.org).

## In brief

### Geberit offers online bath drain selector

DES PLAINES, ILL. — Geberit has taken the guesswork out of bathtub and drain compatibility with the launch of its online Bath Drain Selector.

Geberit's online Bath Drain Selector provides showroom consultants, plumbing contractors and wholesale counter personnel with a quick and easy solution for locating compatible Geberit drains for bathtub fixtures.

By selecting a particular manufacturer and model number, bathtub size and the rough-in material, users receive a choice of drains to meet their needs. Instantly, images of compatible Geberit drains appear on the computer screen with easy-to-read product features and specifications.

Users can access the Bath Drain Selector through the catalog on the Geberit website at [www.geberit.us](http://www.geberit.us). The database search listing will be continually updated to reflect new products and additional manufacturers.

### Winters Co. Plumbing, Heating & Cooling names sales manager

BOSTON & CAMBRIDGE, MASS. — Keith Mercurio, a Belmont resident, has been named sales manager at Winters Company Plumbing, Heating & Cooling of Cambridge.

### A.O. Smith-sponsored golfer gets second tour win; jumps to No. 1

ASHLAND CITY, TENN. — Former A.O. Smith employee and sponsored player, Tommy "Two



Gloves" Gainey, notched his second tour win of the season at the Chiquita Classic at TPC River's Bend in Cincinnati.

His overall performance at the Chiquita Classic pushed him to the No. 1 spot on the money list. The 25 leading money winners at the end of the year will earn PGA TOUR cards for 2011.

For info, [www.aosmith.com](http://www.aosmith.com).



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Learn more and schedule demonstrations: 800.769.7743 or [RIDGIDUpgrade.com](http://RIDGIDUpgrade.com)



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### UA's Hite appointed to President's Export Council

WASHINGTON — William P. Hite, general president of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, joined President Obama at the White House as the President announced the appointment of General President Hite to serve on the President's Export Council. Hite noted that in his new appointment he will work with the Council to create good jobs for American workers.



Hite

### Grand Hall announces promotions

GARLAND, TEX. — Grand Hall, producer of the Eternal Condensing Hybrid Water Heater, announced the

promotion of Paul Home and Yolanda Perteet to vice president positions. Home will now serve as vice president of product and marketing and Perteet will assume the role of vice president of operations.

### Symmons Industries names president

BRAINTREE, MASS. — Symmons Industries has appointed Jeffrey Reilly as the company's new president. In his new role as president, Jeff will have direct responsibility for the marketing, sales, engineering and operations groups.



Reilly

### Nicolas Grohe to return to Europe

ALPHARETTA, GA. — After serving for close to 10 years in North America, most recently as director of marketing

and Product Development, Hansgrohe, Nicolas Grohe will return to Europe this summer, to bring his expertise to the Hansgrohe headquarters.



Grohe

### Progressive Marketing & Sales joins PHCC Pro Series

LINCOLNSHIRE, ILL. — Glentronics, Inc. welcomes Warren Harding and Dave Andrus of Progressive Marketing & Sales, as new PHCC Pro Series regional independent sales reps, covering upper and lower Michigan.

### Armstrong helps shape industry standards

THREE RIVERS, MICH. — Nevena Iordanova, senior utility systems engineer for Armstrong International was selected to participate in the development of the newly released American Society of Mechanical Engineers (ASME) standards for energy assessments in steam systems.

### LENOX® names director of marketing communications

EAST LONGMEADOW, MASS. — LENOX® announced Myra Lee as the new director of marketing communications. In her new role, Lee is responsible for leading efforts to enhance brand equity and consistency as well as building marketing programs in partnership with product and channel teams.



Lee

### GreenPlumbers USA's Megan Lehtonen Joins IAPMO

ONTARIO, CALIF. — Megan Lehtonen has vacated her position as president of GreenPlumbers USA and joined the International Association of Plumbing and Mechanical Officials (IAPMO) as the association's new director of Program Development.

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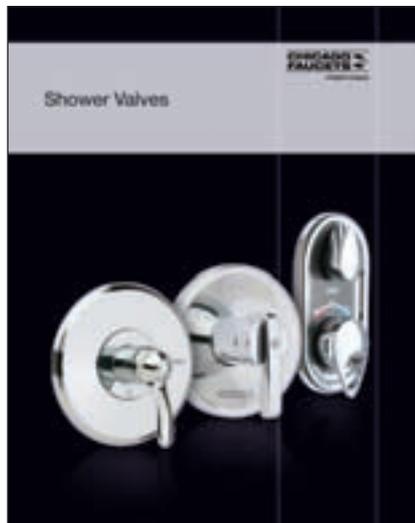
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BY DAN HOLOHAN  
contributing writer

## Old?

The United Kingdom prides itself on being quite energy efficient these days. As with most of Europe, there are strict rules in the U.K. that keep everyone in line. If you need a new boiler, it must be of the condensing variety; this goes for both oil and gas. This makes for great business.

Recently, npower, one of the U.K.'s largest suppliers of electricity and natural gas, announced a contest to find the oldest boiler in the land. The winner would be awarded £3,000 toward a replacement boiler that was much more energy efficient than the ancient one. It would, of course, be a condensing boiler.

As you can imagine, this got U.K. homeowners excited. That's a lot of loot, especially these days, and new

boilers don't come cheaply in Europe. I also got excited when I heard about the contest, because I figured that any country with a history as long as England's is bound to turn up some very old equipment, and I have a thing for old stuff. So I watched and waited.

Well, they disappointed me. As I write to you, they think they have a winner. It's a boiler that's a mere 32 years old. This they consider old? I don't think so. To me, this boiler is still a wet-behind-the-ears young man, but npower gushed over it. They pointed out that the boiler is older than the owner's 24-year marriage. Big whooping deal. I have underwear older than this boiler.

Richard Cotton, who is in charge of sales for npower (and, hey, that's what this contest is all about), said, "In our search for Britain's oldest boiler, we've already uncovered many boilers more than 30 years old, with some families owning boilers that are older than their grown-up children."

a fire, explosion or gas leak, so you can take that thought and stuff it, buster.

Which brings me to Jonathan Metz of West Hartford, Connecticut. Mr. Metz, 31 years old (one year younger than the oldest boiler in the U.K.), was vacuuming his boiler when a part of the vacuum fell into the boiler. He reached in to retrieve it and his arm got stuck, and I mean really stuck. He was working alone, and he wasn't a professional, so no one was watching him or checking up on him or even thinking about him. He yelled and screamed for three days in his basement, but no one came to help him. At one point, he popped the relief valve and drank the boiler water by scooping it up with his flip-flop. He said it was all red and disgusting, but he was glad to get it.

After a while, Metz's arm began to smell as if it was getting gangrenous, so he fashioned a tourniquet from his shirt and some old phone line that he could reach and used a hacksaw blade to cut through most of his arm. The doctors said that this probably saved his life because it prevented the infection from spreading to the rest of his body.

**The Energy Saving Trust, an independent U.K. organization charged with making the kingdom more climate-conscious, says that any boiler more than 15 years old is far less energy efficient than those available today and that folks could save as much as £235 each year on their heating bills if they would just upgrade.**

Well, yeah. It's because of the children that most of us can't afford to buy new boilers. Everybody knows that.

The Energy Saving Trust, an independent U.K. organization charged with making the kingdom more climate-conscious, says that any boiler more than 15 years old is far less energy efficient than those available today and that folks could save as much as £235 each year on their heating bills if they would just upgrade. They also mention that an older boiler may cause a fire, an explosion or a gas leak, which, I suppose, is inspirational to British people. Say the same to most Americans and they'll ask you how soon they're going to get their money back on the new boiler. Better not take more than three years. They'll also tell you that they've never had

This was one coyote-ugly boiler. I saw a photo of it. I'd say it was at least 60 years old. It had a huge copper tank for domestic water above it, and it would have won that U.K. contest hands down (no pun intended). A local company, Automatic TLC Energy, was nice enough to donate a new boiler to Mr. Metz, along with the labor to install it. I watched a news video of the guys carrying the big copper tank onto their truck. Smart guys.

Mr. Metz is getting married in November, and it's a happy ending all around. I'm glad he's still with us.

When I was growing up here on the Isle of Long, I thought that everyone in the world heated with oil. Back then, most people did. You'd buy a house, and the oil companies would come calling. Each  
(Turn to "Old" page 22.)

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# Out with the old? Not for some!

(Continued from page 20.)

would offer a deal that was better than what the last guy offered, and I remember my father working one against the other.

The big thing back then was the free service contract. If you signed up for automatic fuel deliveries for a certain amount of time, say, five years, the oil company would take care of any service your boiler or furnace would ever need. The coverage extended beyond the boiler and into the system. Some oil companies would even send a guy to your house to bleed your radiators.

The cost of all of this was the cost of doing business, and the oil companies made good money selling comfort by the gallon. Most saw their service departments as necessary overhead, and they just sucked it up,

as their customers' boilers and furnaces sucked up the oil. When the five years of a service contract ended, the customer would call the oil company and say that he was thinking of switching companies. This prompted another offer of five years free service. I never met anyone who ever paid for service.

But wait, it gets better. When my father needed some plumbing done, he would call it in as a service call. The oil technician would show up, and my father would take him down to the basement. He'd explain that there was nothing wrong with the heating system, but he needed some other work. He'd be happy to pay the guy a few bucks off the books if he would come back after work and take care of the problem. I can't recall one technician ever saying no. It

was just the way things worked.

Today, in many parts of America, those guys will still show up at any hour of the day or night, and on any day of the year, and they will work on the oldest equipment you can find, so where is the incentive to upgrade to new equipment? What's that you say? New equipment will save me fuel? How much fuel? Oh, you don't want to guarantee that? And what's the payback on the new equipment? It had better be less than three years.

What's that? My boiler is old and liable to break down? That's your problem, jerk. I have a service contract, and if you don't show up when I call, I'll take my business elsewhere.

So these guys keep showing up, and they keep working on stuff that

rightfully should be in a landfill. This is why we still have residential boilers that date to the Great Depression — boilers that are big enough to stick your arm into. Once.

When these boilers leak, even that's not a problem. An old-timer once told me that the best way to stop a boiler leak is to put a handful of oatmeal in the water. "Swells right up and plugs the leak!" he said. "Gets you through the winter."

I mentioned this to another old-timer and he said, "That guy is right but better still is horse manure. I've never seen that fail, and it lasts for a long time. If the problem happens again, you can always add more."

I figure that when a boiler is leaking it's time to install a new boiler, but the old guys said that was nuts. Why replace it when you can keep fixing it?

I suppose that's part of what makes us Americans.

We reserve the right to be ridiculous. ■



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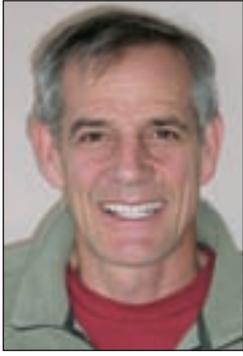
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BY BOB "hot rod" ROHR  
contributing writer

## Specifying efficient equipment

Paging through trade publications these days I notice a common theme. Actually I notice a few common themes: "green," or "green washing" to some, and "high efficiency." I am all for increasing efficiency, be it in HVAC equipment, the structures we design, vehicles we travel in, or even our daily work regimen. "Green" is a little foggier to me. Show me a product that isn't marketed under a green premise these days.

So where do we as designers, installers and manufacturers come together in the high efficiency arena? As I see it, all of our customers are hankering for efficient products and buildings. Manufacturers jockey to be on the cutting edge and leading, or close to the front of the pack, with offerings. Certainly, designers and installers want to provide high efficiency to their customers, who are demanding it.

Could it be that the media was early to grab "green" and run with it? I know for a fact that politicians drop the "green bomb" as often as possible. I'm not sure that this is a bad thing. In a struggling economy, any viable product or concept that generates a buzz and results in SALES could be a great thing. Wiser use of our resources is a good

thing, in my mind. So what's not to like?

The challenge for us is to weed our way through the hype and find and install the products that truly do make life more efficient and, hopefully, less expensive to purchase and maintain, while accomplishing the task for which they were designed. It's really easy to insert the words green or energy efficient into any conversation. Putting numbers to the advantages of these practices is a bit more involved.

In our industry, time is the true indicator. Does the product safely and reliably accomplish the work with less consumption? Would we

pair and replacements on my nickel.

I guess the bottom line, the gist of this rant would be, "Would I, will I do it again? Am I willing to sell and install the newest and latest \_\_\_\_\_?"

I'm in a different part of the industry now. Working for a manufacturer, I get to see a product go from the ore, copper, iron, etc. to the finished product. I see what it takes to design, test, list, market and sell new and unique products. I understand that the product is directly equal to the people behind it and their goals and passion. I see the power of a well-equipped and staffed lab. I also understand the limitations of labs and accelerated testing. I understand how installation and jobsite conditions are often the largest unknown and un-

**The challenge for us is to weed our way through the hype and find and install the products that truly do make life more efficient and, hopefully, less expensive to purchase and maintain, while accomplishing the task for which they were designed.**

all agree that mod con boilers would be a classic example? Maybe even condensing furnaces for that matter. There have been a few swings and misses, as we know.

High efficiency pumps and motors seem to be the hot button this year. As the offerings increase are you ready and willing to jump on board? The players are all known and trusted manufacturers: The technology has history in actual applications in Europe. The numbers sure do work out nicely when you consider long term energy consumption.

My shop, as I walk through it this morning, is a living testimony to those swings and misses. I have a heavy brass "boat anchor" of a circulator that was billed as a game changer, a pile of radiant tubing and fittings that couldn't get along with water and heat, several early condensing boilers, obsolete controls, igniters with less than six months of service and enough inducer fans and motors to circle the earth. I can't think of one area of hydronics that I don't have an R&D project component where the installer is the one who took the hit on the R&D. Most cost me out of pocket dollars to correct and replace. I figured my mortgage could be paid off by now with all those "refunded" dollars and time for re-

controllable piece of the puzzle. I now know the true meaning of "lifetime warranty."

Be this as it may, I still say, "Yes, count me in to continue to push the envelope." I've been to countries where 40-mpg requirements are currently in place. I've seen net zero buildings. I've discovered countries that have required solar thermal since the '80s. I do wonder how much learning curve those early adopters rode out. That puts the Toyota debacle in mind.

The United States needs to step up and take the lead or at least get in the race. I'm watching China spend billions of their stimulus money on efficient transportation, solar PV and thermal mandates. They are cleaning up their coal plants and setting big goals. There are entire continents mandating energy efficient pumps and motors.

Are you with me? Willing to take the bruises, show the scars and move on? Could you make one change and spec only ECM pumps as a first step? Let me know your thoughts. ■

*Bob "hot rod" Rohr has been a plumbing, radiant heat and solar contractor for 30 years. A long-time RPA member, Bob is manager of training and education for Cal-effi North America.*

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BY BRISTOL STICKNEY  
contributing writer

## Solar economics – look at cash flow, not payback

Whenever a solar heating project is under discussion, someone always brings up the concept of “payback.” This idea is based on the assumption that the extra cost of installing solar equipment must pay for itself in energy savings in some fixed amount of time. If it doesn’t, then it is not worth installing the solar equipment. The payback period is often picked at random, say five, seven or 10 years. This “simple payback” analysis (so often scribbled on a paper napkin during lunch) is easy for everyone to understand because the math is elementary. I guess that’s why it is so popular. But it produces, at best, a factoid for an answer and, at worst, a completely false representation of the economic benefits of a solar heating system.

What if you were building or remodeling a heating system and you found out that, because of the way financing for construction and home improvements are structured these days, you could include solar heating with virtually no additional expense to the project? Suppose that, to top it off, the cost of operating the heating system for the next 20 years or more will be less than half of what a conventional heating system would require. And, even better, that, because of the ever-increasing cost of conventional energy over time, the cash flow benefit increases every year?

Most of the solar heating projects I have designed in recent years fit this description, in part or in whole. Sometimes the owners are partly swayed by the more intangible benefits of being “green,” which doesn’t really fit into any kind of economic analysis. If the initial expense is insignificant, and the cash flow is positive and that benefit increases every year for the life of the system, then the payback is irrelevant.

At the very least, the investigation into solar heating should go beyond payback to include fuel inflation, interest rates on the project financing, national and local incentives for energy efficiency and all the other variables impacting a construction project today. The calculations are not so simple; that is where computers come in handy.

In the past few months I introduced some of the computer software available to model and analyze solar heating installations such as SAM, Retscreen, Tsol and Polysun. All of these programs include an economic analysis section that allows an inspection of the effects of interest rates, incentives, fuel costs and the like. Many of these computer tools also try to put a value on the green benefits as well, by reporting on avoided carbon emissions and other pollutants.

### Multiple variables

Here at the SolarLogic Lab, Fred Milder and I have been comparing this kind of economic data on a spreadsheet that Fred created. Following is a brief description of the variables needed for a realistic economic model. We will be using an example project to illustrate a typical residential solar combi heating system in the United States.

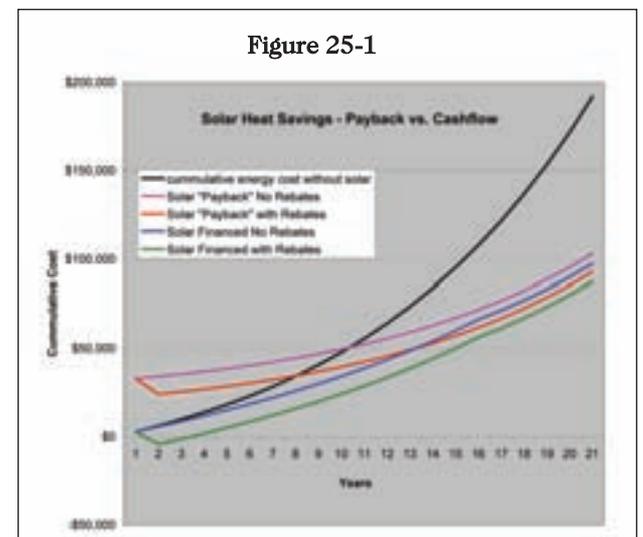
- **The cost of borrowed money:** Most construction projects are financed. Home equity loans offering low interest are available today. The amount and terms of the loan for a solar installation must be included in an economic evaluation. For our example, we will borrow \$30,000 at 3% interest for 15 years to install a solar hydronic combi heating system in a typical residence.

- **Costs recovered from rebates and incentives:** The actual amount depends on the owner’s individual tax status and the state and local offerings. Remember that not all heating equipment is automatically eligible for a rebate. If a component is required as part of a conventional heating system, it may not qualify. In our example, we assume that \$25,000 worth of equipment qualifies for a rebate. Our tax bracket allows the full rebate to be collected in the first two years after installation, using the New Mexico rebate limits.

- **Heating energy required:** The domestic hot water and space heating needs for the residence each year must be estimated in order to put a value on that amount of heating fuel. In our example, the building consumes one million Btu per year.

- **Cost of fuel over time:** The cost of fuel changes all the time, and it is not possible to predict what will happen in the future for all sources. One commonly accepted method of estimating this is to look at the trends over the last ten years and project that forward into the

The typical “simple payback” analysis is actually a special case, where the solar installation is paid for by the owner in a lump sum up front instead of using borrowed money.



future for economic comparison. A good resource for this information is the U.S. Energy Information Administration (EIA.gov). In our example, we use propane at \$3 per gallon, with a price increase of 10% per year.

- **Solar energy delivered to the heating load:** The solar heat that actually offsets conventional fuel use each year can now be compared to the cost of fuel to determine an economic savings. In our example, we install 320 square feet of flat plate collectors and use an SRCC collector rating that corresponds to a partly cloudy climate. Figure 25-1 shows the results from our example project using the economic data described above. This graph shows the cumulative cost of heating with and without solar and with and without rebates over 20 years.

### Compelling cash flow

The typical “simple payback” analysis is actually a special case, where the solar installation is paid for by the owner in a lump sum up front instead of using borrowed money. The fuel inflation rate and tax incentives may or may not be included (depending on the size of the napkin you are working on).

In our example, seen in Figure 25-1, I have included two payback graphs shown as pink and red lines. Notice that the initial cost is seen as a major expense, which is slowly offset by solar savings. The point of payback (Turn to Solar Economics page 28.)

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# Solar economics & beyond

(Continued from page 26.) occurs when the accumulated solar savings cross the black line that represents the accumulated non-solar fuel costs. The solar rebate (red line) lowers the initial cost and causes payback to occur about two years sooner.

The same data is plotted on Figure 25-1 for this example, when the project is financed for 15 years at 3% as described above. The results are much more compelling because there is no large cost up front and the savings are immediate. In fact, when a rebate is collected in the second year (the green line), the costs “go negative” which indicates cash flow into the owner’s pocket rather than out of it.

Even when no rebate is collected

(the blue line), the financed system never costs any more from year to year than the non-solar option (the black line). The savings kick in by

first eight to 10 years, while the cash flow analysis for prudent financing shows continuous benefits right from the beginning. Of course,

**There are other advantages that owners experience from their solar heating systems besides economics. Abundant domestic hot water from the typically larger solar hot water tanks can provide a feeling of luxury. Extra heat in summer can be diverted to a hot tub or pool without any added fuel cost.**

the third year and continuously increase for years to come.

In this example, a payback analysis shows a negative benefit for the

every project is different, by region, by climate, by fuel type and by type of construction, and each has its own economic fingerprint. The economic evaluation really must be personal. The powerful tools like those built into Retscreen and other computer models make this as painless as possible.

## Beyond economics

There are other advantages that owners experience from their solar heating systems besides economics. Abundant domestic hot water from the typically larger solar hot water tanks can provide a feeling of luxury. Extra heat in summer can be diverted to a hot tub or pool without any added fuel cost. Night Sky Radiant Cooling (NSRC) can often provide extra comfort or savings. Solar heat can deliver extra LEED points for designers who are involved with high efficiency buildings. Solar heat provides a kind of insurance against the future cost and instability of conventional fuel. And, of course, solar heat offsets CO<sub>2</sub> and other emissions in a big way, so anyone concerned about their carbon footprint can use solar energy to improve their green impact.

Looking at these graphs, we can

see that the annual savings steadily increase over the years as the cost of fuel increases. The biggest benefits occur over the long term. This implies that the solar components must function reliably and consistently over the expected lifetime of the equipment. In other words, the system must be designed, installed and maintained in accordance with the six principles of good solar design. The systems must especially be Reliable and Serviceable if they are going to deliver the economic goods over time.

## 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.

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

Brand names, organizations, suppliers and manufacturers are mentioned in these articles 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. ■

*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. For more information, visit [www.solarlogicllc.com](http://www.solarlogicllc.com).*

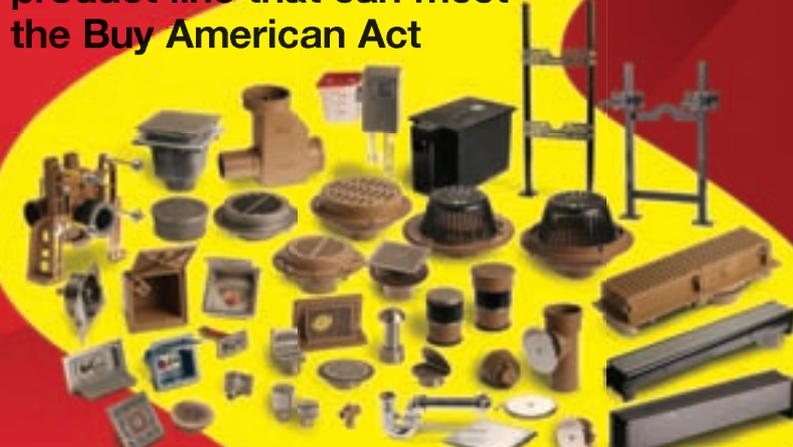
In this series of articles, I have been making the case that the key ingredients for solar/hydronic design and installation can be divided into six categories, listed below, roughly in order of their importance.

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3. COMPATIBILITY
4. ELEGANCE
5. SERVICEABILITY
6. EFFICIENCY

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BY ELLEN ROHR  
contributing writer

## You are right on top of it

Russell Conwell gave a speech, the same speech, more than 6,000 times. In it, he described a young man who gave up everything he had — his family farm, the family — to travel the world to find his fortune. He searched wide and far. Alas, he died penniless. His body was returned home, where his heartbroken family dug his grave. And there they discovered the world's largest diamond mine.

You have probably heard this story before. In 1890, the speech was published in a book. Proceeds from the speeches and book sales helped Conwell build a fortune. With it, he founded Temple University in Philadelphia. He also funded two hospitals in the City of Brotherly Love, where no one was ever turned away for lack of money. He found his fortune doing what he loved, right where he was.

I don't buy every point of Mr. Conwell's pro-wealth, anti-poverty argument. And don't get me started on the diamond industry. This book, however, is a self-help classic and you might want to form your own opinion about Conwell's philosophy. Here's the link: [www.amazon.com/Acres-Diamonds-Things-Possible-Right/dp/1449944418](http://www.amazon.com/Acres-Diamonds-Things-Possible-Right/dp/1449944418).

On this we agree: All good things are possible. I also believe that we have everything we need to create a fortune, offering our unique gifts and services to our fellow man.

Here's my version of the Acres of Diamonds story. The other day one of my clients — let's call him Abby — was talking about a prominent contractor in his market. Let's call him Norm. Abby said, "If only I had a service manager like Norm's. That's why he's so successful. I can barely get to the calls I get every day. There's no time to train the other fellows on my team. And when it comes to the paperwork, forget it. I would have to stay up all night to keep up."

Abby would have listed his woes for another half an hour: that's a bit of a time waster. I interrupted, "Abby, it's funny because I just visited with Norm a few days ago. He was complaining about an acquisition that fell through. He told me that that acquisition was the key to his next level of growth. Norm was stressed about how he was going to increase calls, because acquisition is a great way to get more calls. It's not a magic bullet, however. Norm could make better use of the calls he is getting and do a better job of training his team. He could pursue another acquisition. There is always something you can do, right now and right where you are, to get you where you want to go. I'll share with you what I shared with Norm: You are sitting on 'acres of diamonds'."

### Are you searching wide and far?

How about you? Are you chasing the latest management fad? Are you looking for the one thing you might be missing that will make it all better? The magic bullet? Or maybe you're just on the "hamster wheel," trying to get different results from doing the same things faster and faster.

I am not being judgmental. I am discovering these behaviors in my own life. The great news is that I am challenging what I assumed to be true. Is it true that growing my business is going to be hard and take lots of hours? If that's true, how come there are people who are successful and seem to have lots of free time?

Have you ever been delightfully surprised by some-

thing that you wanted that came to you, out of the blue, with seemingly little effort on your part? I have. Look back and find a moment like that. Great stuff happens to us all the time. We are often too busy complaining to notice. I am finding that, the clearer I am about what I want, the easier it is to move in that direction. It's easier to say no to things that don't align with my vision.

We can ask ourselves, "Is it a lack of information? Or is it a lack of willingness? Are you willing to take action on information that will move you to your dreams? Because the information is available. You may even have it already. Certainly, you can get the information you may be missing.

How about if we just quit talking about the things in life that are going wrong? Of course, you'll notice them. As you notice, ask yourself, "What would I rather experience?" Think about what you want and gain clarity

Here's an exercise that can help you gain clarity. Create your perfect life on paper.

Take a deep breath, let it out and calm your mind.

Then ask yourself, "What do I want?" Listen for the very first thoughts that come to mind.

Write them down without judgment. Notice your feelings as you write the words. If it feels good, you are on the right track.

on it. Then consider what you could do differently that will give you a different result. And take action. Take action in the belief that your life is an extension of what you think and what you do.

### The perfect life exercise

Here's an exercise that can help you gain clarity. Create your perfect life on paper. Take a deep breath, let it out and calm your mind. Then ask yourself, "What do I want?" Listen for the very first thoughts that come to mind. Write them down without judgment. Notice your feelings as you write the words. If it feels good, you are on the right track.

- Start when you wake up and move through each hour of the day. Jot down thoughts, descriptions of what your perfect life would be like. How would you spend it? With whom? Where? Would you work? What does your company look like? How many people? How much money? How much time would you spend with your family?

- For inspiration, you may want to go to a bookstore. Buy a dozen magazines specializing in the kinds of things and activities that inspire you. Check out the travel section. Buy a book about a place you want to visit or live or buy a map of the place. Search the Internet and print out pictures and pages on things you want to have and things you want to do. Pay attention to what inspires you, to what makes your heart beat faster.

- Contemplate how a business fits into your perfect life. What does it look like, smell like, feel like? What kind of work do you do? Who are your customers?

(Turn to Your Perfect Life on page 36.)

Are you chasing the latest management fad? Are you looking for the one thing you might be missing that will make it all better? The magic bullet? Or maybe you're just on the "hamster wheel," trying to get different results from doing the same things faster and faster. I am not being judgmental.

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BY RICHARD DITOMA  
contributing writer

## The enemy within

When contractors and consumers are about to talk price, apprehension always puts in an appearance. Contractors and their technicians who are not confident that their prices are properly profitable exude low self-esteem while diminishing consumer confidence. Sensing this, consumers also become apprehensive.

Contractors are often their own worst enemies. Ignorance of proper business procedures leads them to flawed performance. Fear keeps them from doing the right thing. Ego doesn't allow them to see the error of their ways. In combination with their low self-esteem, these traits prevent them from being enlightened.

A contractor from Chicago wrote the following thoughts on the controversy between T & M pricing and contract pricing. "There are profitable 'time and material' service contractors in the Chicagoland area that have earned the trust of their customers. They don't boast about how much profit they made on the backs of the customers by going 'flat rate.' I once took my older, well-maintained vehicle to the dealership for service. Because of the age of the vehicle and the possibility of neglect, I was to be charged for three hours of labor. The job was completed in fifteen minutes; there were no problems, no rusted bolts, etc. The dealer was going to let me sit in the waiting room for more than 2½ additional hours. Fortunately, I knew a mechanic there, and I was able to get my vehicle right away. What a scam! I was being charged extra be-

so be it. Most T & M contractors have an extremely difficult time making a profit, because they must compete with the absurdly below-cost hourly rates of other inane T & M contractors.

I have just started helping another contractor whose original opinion of contract pricing was similar to that of the contractor from the Chicagoland area. He wrote, "I'm so tired of the constant complaints about travel time or about how long a job should take. Most of my competitors are flat raters. They are what I don't want to be, high priced, unprofessional techs who don't care what's best for the client. I've been following your articles for a long time, but this one really pushed me over the edge. My wife just informed me last night that we will need to borrow more money to make payroll for Friday. I love what I do, but I'm really sick of its not making enough profit. We charge \$195 for the first hour and \$105 after that. It's not like we are cheap." In the same e-mail he adds, "I'm now interested in becoming a flat rate company in order to survive. What can you tell me that can help me make the jump?"

The fact that a contractor charges whatever amount he/she charges doesn't mean that they are covering their costs. Using contract pricing does not in and of itself mean that a business is high priced or unprofessional. It probably means that the contractor is able to deliver excellence by conveying value to consumers because he or she is financially prudent.

1	2	3	4	5	6	7	8
Contractor Area of USA	# of Tasks Done	Hours Spent	Revenue if wrong numbers were used	Material Cost	Revenue using Coach DIToma Contract Pricing	EXTRA REVENUE for same workload w/ th Coach DIToma's Solution Support System	EXTRA REVENUE PERCENTAGE
Mid Atlantic States	319	389	\$78,205.82	\$14,961.55	\$134,957.10	\$56,751.28	72.57%
South East States	382	1195	\$203,952.97	\$25,695.85	\$268,860.29	\$64,907.32	31.82%

cause my vehicle was properly maintained. That dealer lost my business. Here's an idea: Be fair to your customers, and you won't lose them."

This contractor sees properly run businesses as a cabal of sinners. He claims their business practices are a "scam." Yet, this saintly (in his mind) contractor has no problem getting his friend the mechanic to put him ahead of those consumers who were in line before him. I guess that, when it comes to ethics, he has an exemption. If he operates with this mindset, he hampers his own business's ability to attain the opportunity to maximize his profits. But it's his business to run and his choice as to how well he runs it.

It probably took the dealer more than fifteen minutes to service the vehicle, especially when you consider all aspects of the process, from inception to completion. The dealer has to pay overhead costs and has the right to earn a profit. If the dealer quoted a price before servicing the vehicle, the responsibility of making the decision whether to have the service performed was solely the contractor's choice. He does not have the right to tell the dealer how to run his/her business.

Contract pricing is based on average costs. Some tasks of the same type seem to go easy while others are the tasks from hell. Average time is somewhere within those parameters.

The only reason a business exists is to earn a profit. In the United States of Capitalism, maximizing profit is the goal of all properly run businesses. If you believe that there are profitable time and material service contractors,

At least the second contractor had the wisdom to realize that T & M pricing wasn't working. He decided to seek my coaching assistance and is just beginning his transition.

The battle of the holier than thou T & M contractors versus the sinful contract pricing contractors continues to rage. Here's a better suggestion than the Chicago contractor's idea: Be fair to everyone, including your business, your clients, your employees, your creditors, your family and yourself. Then everyone wins.

Contract pricing contractors give consumers their choice before performing any service. This method gives them a better opportunity to recover their costs and to earn the reward they deserve. T & M contractors give the consumer a surprise bill after the fact. More often than not, T & M contractors place undue financial burdens upon themselves and everyone concerned. Which one has more potential to be the real sinner?

### T & M adds fuel to the fires of apprehension

T & M pricing increases everyone's trepidation. Your client watches the clock and every move your technician makes. Sensing this, your tech is more prone to error, which can result in a callback and a dissatisfied and lost client. Faced with the surprise bill, the moaning and groaning about the price, unpleasant negotiating, and/or total refusal to pay, everyone is distressed because the price was not known before the service commenced.

Consumers will ask your tech "How did you come up (Turn to Contract Pricing, page 36.)

The only reason a business exists is to earn a profit. In the United States of Capitalism, maximizing profit is the goal of all properly run businesses. If you believe that there are profitable time and material service contractors, so be it.

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## "My workhorse!"

Carl Helt, Helt Plumbing, Charleston, MO

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"I'm from the old school," Helt continues, "we stand behind our work – and expect the same from the tools we use."

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"It's great for one-man operation," Helt contends.

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The Speedroooter remains Carl Helt's favorite. "It's so reliable," he concludes. "I can just send the guys out – and know we'll get the job done!"

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BY JOHN BARBA  
contributing writer

## What do they mean by value added?

**W**hat does “value added” mean? “We’re a value added company!” How often do you hear this drivel? And just what does it mean?

“Value added” is nothing more than code for “we’re not the lowest price.” More often than not, when anyone says they’re “value added,” they are likely to be on the higher end of the price spectrum.

Is this a bad thing? Well, it is if there’s no additional value to doing business with that particular outfit. They’re simply more expensive than the alternatives, and there’s no discernable or relevant reason. It’s also an indication that whoever’s running that business is irretrievably stupid.

True added value, however, is at the heart of successful, profitable selling. When one considers the “selling points” to deliver to a prospective customer, “We’re higher priced for no good reason” usually doesn’t make someone jump into your lap. When you can comfortably and confidently express to your customer what they get for doing business with you, what benefits they receive from buying your product or service and how those benefits will help them, then and only then will you have added value.

Look, a hunk of pipe is a hunk of pipe, right? Its entire reason for being is to keep water on the inside for a long, long time. Are there differences in types of pipe? You bet. Do those differences matter to whoever is going to use the pipe? Many folks who sell pipe for a living will say no, but those are usually the folks selling the cheapest pipe. Low price sellers don’t want buyers looking at anything other than price, simply because they have nothing else to offer. So they will tend to minimize and trivialize any differences.

Yes, differences in product offerings do matter, especially to the person, people or entity that are going to use those products. In fact, those differences matter only to the person, people or entity using those products. No one else cares.

If a certain type of product can make my job easier, speedier or more profitable, it most certainly has value beyond its price. A less expensive product may have less value if it slows me down, requires more effort to use or eats up my profits.

When you sell from a “value-added” position, the first thing you need to do is identify the true differences you offer compared to your competitors. In the world of contracting, the first “difference” many reach for is “quality workmanship.” While quality workmanship is a worthy goal for anyone who builds and installs for a living, it’s a rather poor value added proposition for two very good reasons.

When you use “quality workmanship” as your value-added proposition, you’re claiming that no one in your market other than you is any good. Despite being rather arrogant, it’s also hard to believe. Is it realistic to think that of all the folks in the contracting business in your market you are the only one who knows his butt from a hole in the ground? That you are the only shining light of competence in a sea filled with knuckle-dragging butchers and hacks?

Being proud of your skills, training and knowledge is great. Those attributes are important and should be bragged about, and it is true that there are some incompetent competitors out there. But common sense and honesty dictate that there are others in your market that are as capable as you are.

The second reason that quality workmanship is a poor

value-added proposition is that, unless proven otherwise, a customer will assume competence from anyone with a sign on the door. If the sign on the door says Contractor, most folks will simply assume that person knows what they’re doing, although he or she may not have a clue. The sad truth is that customers may not find out until it’s too late. Face it, no contractor is going to tell a prospective client, “I’m really not that good, and I’m not completely sure what I’m doing.”

Think about it from a customer’s perspective. Say you’re quoting a \$20,000 heating and cooling system, as are three other contractors. Every one of them wants the job, and wants to impress the prospective client with his or her technical prowess. Unless there’s compelling evidence to the contrary, the client will more than likely accept, on face value, that all four competitors have the required skill set to get the job done. They are all, as far as he or she is concerned, good enough.

Can you use quality workmanship to your advantage? Most definitely, but the word quality has to be defined for your customer, in terms that matter to that customer. What is quality? Larry Steinmetz, in his book, *How To Sell At Prices Higher Than Your Competitors* ([www.pricingexpert.com](http://www.pricingexpert.com)), defines quality not as the “best stuff,” but as the “right stuff” for your client’s wants and needs.

What defines a quality heating system? Is it high efficiency? Is it room by room comfort? Is it one that doesn’t leak? Is it one that’s trouble free? Is it one that looks nice? And what constitutes quality workmanship? Plumb and straight? Shiny and compact? Clean shaven installers with snappy uniforms?

The obvious answer is “all of the above.” But it may not be that obvious to your customer, and that customer’s definition of quality is the only one that matters. Some folks get wowed by the latest and greatest while others want tried and true. Some folks want consistent comfort while others want workers in their home that don’t look like wayward Manson family members. It’s different strokes for different folks.

Quality workmanship can be part of a value-added proposition, and only part, provided you define quality workmanship for your customer in terms that are meaningful to them, and then back it up with proof. If you’re working with a homeowner, look around their home a little while you’re talking with them.

If the house looks like a candidate for the cover of the next issue of *Anal Retentive Weekly*, chances are they’re going to value neat, good looking work. If it’s summer and the AC isn’t running, or if it’s winter and everyone’s wearing sweaters and shivering, it’s a good bet that energy efficiency will float their boat. If they dress casually and the house has a “lived-in” look, they may very well value room by room comfort. The keys are there, you just have to know what you’re looking for.

Also understand that most folks don’t have the wherewithal to define quality workmanship, especially when it comes to hydronics. The great hydronics futurist Robert Bean says that most people in North America have no frame of reference for what hydronics is supposed to look like. That’s because virtually every system installed is a collection of dissimilar parts that look like nuclear power plants built by Moe, Larry and Curly. A forced air system, by comparison, looks like a forced air system. They all look the same and people find comfort in that.

(Turn to *Show & tell them*, page 36.)

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**If a certain type of product can make my job easier, speedier or more profitable, it most certainly has value beyond its price. A less expensive product may have less value if it slows me down, requires more effort to use or eats up my profits.**

---



**Q:** What is the name of the only gas hybrid water heater with Energy Star approval?  
*hint: I's, O's, & U's are vowels not used.*

**A:** \_\_\_\_\_

828



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## Contract pricing

(Continued from page 32)

with that price?” Since the consumer is paying on a T&M basis, your tech is obligated to itemize the time spent and the material used to perform the task with the related costs of each. If the consumer goes shopping after the fact and finds a competitor who would have charged for less time at a lower rate and/or finds material for less than the amount you charged them, the excrement will contact the rotary oscillator.

### Contract pricing puts out the fires of apprehension

With contract pricing, all you have to do is describe the task with your price and all other terms and get the consumer's signed approval and authorization of the proposal and price before starting the job. The consumer is solely responsible for the decision to accept or reject your proposal. Upon satisfactory completion, your obligations are fulfilled. How you arrived at the price is none of their concern, unless they are going to buy your business and take on the responsibilities and obligations for which you are accountable.

If the consumer asks “How did you come up with that price?” regarding your contract price your tech can respond in a positive, intelligent manner that will show the consumer that your business is run professionally with financial prudence.

Example: “We use a cost integrated factoring system that enables us to give you an accurate price for any given diagnosis, service, repair, replacement, installation, alteration or consultation. It takes into consideration the many costs we incur in order to service your needs properly, to assure that we are here to stand behind our work and to service your future needs. That's why we can give you the exact price prior to commencement of work for your approval and authorization.”

The items which go into a cost integrated factoring system are (you may have more or less): salaries; F.I.C.A. matching funds; unemployment, disability, workers' compensation, liability, completed operations, catastrophe and health insurances; vacation and holiday pay; rent;

utilities; maintenance; office supplies and equipment; postage; telephones (land line); mobile phones; answering services; vehicles with related vehicular expenses; tools and tool maintenance; advertising; travel; licenses; dues; uniforms; bank charges; accountant and legal services; education and material. The discretionary decision to provide costs of items is the sole responsibility of the owner or authorized manager of your company, not that of the tech.

Contract pricing is similar to the sales price procedures for most items and services used by the public. Logical, intelligent consumers never ask for a price breakdown of the ingredients of the food they purchase in a supermarket or restaurant, the material used to manufacture their clothes, the items associated with the building in which they reside or each part of the new car they buy. Once they have chosen a product or service, the total price is the only factor they need in order to make their decision.

You can defeat the enemy within by implementing proper intelligent protocols. Your business team will have the data needed to increase the self-esteem of each individual and of the team in totality. This will remove contractor/technician trepidation while instilling confidence in your business in the mind of the consumer as their trepidation subsides.

Figure 1 shows the improved results of two contractors I am currently coaching who are in the infancy of their respective changes. Note the improved results (Col. 6, 7 and 8) they are experiencing. If you need help to set up proper procedures, give me a call at 845/639-5050. I wish you well! ■

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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## This is your perfect life

(Continued from page 30)

How much time would you spend in your business? What hours would you work, ideally? Find pictures that capture how you see this business. Incorporate business elements into your perfect life.

• Acknowledge what you have created already and be grateful for it. Lots of things are going right for you, are just perfect as they are! Next, look at what you still want to create. Could you take action in this direction? Could you find the information you need and act on it? Sure you could.

• Write it all down. Add the picture pages. This is your Perfect Life.

If it feels good just imaging this life, then imagine it. Stop focusing on (obsessing about?) the areas of your life that aren't working. Notice how many elements of the perfect life you have going for you already. Isn't the reason why you want what you don't have is that you think it will make you happier? What if, instead of waiting for the diamond mine to appear, you chose to be happy right now?

If you find that you need some information before taking the next

step, send me a video explaining your challenge. What's the problem? Send your video to me at contact@barebonesbiz.com or post on my Facebook page at www.facebook.com/barebonesbiz. I'll pick a few videos a month and reply with a video that solves the problem. I'll get you the information you need. That takes away that excuse. Then let's see whether you are willing to take action. You'll get only love and support from me as you dig for your “diamonds.”

*“When you determine what you want, you have made the most important decision of your life. You have to know what you want in order to attain it.”* – Douglas Lurton

### One more thing...

If the information you are looking for is how to get the phone to ring NOW, Al Levi and I are offering the Get More Calls teleseminar program to help you do just that. We'll share three super simple marketing drivers that always work (and we offer a money-back guarantee). The system always works...if you work it. Interested? Check out www.GetMoreCallsNow.com. ■

## Show & tell them

(Continued from page 34)

When using quality workmanship as part of your value-added proposition it's important that you define it in terms your customer can understand. You do this with both words and pictures. This is where a brag book is especially helpful. This can be a photo album, a PowerPoint presentation or a page on your web-

mechanical room and the king of all mechanical rooms.

Show them the mechanical room, yes, but also show them you've worked in homes just like theirs or maybe in ones just a little nicer. Show them what the finished living space looks like and show the happy homeowners enjoying the living comfort that you have provided.

### Customers will listen to you say you're wonderful, but they'd rather hear it from someone just like them

site showing your past work. The brag book should focus on your people at work, the finished mechanical room and, especially, the finished home.

It's important to remember that we in the trade get all torqued up looking at mechanical rooms. It excites us and we love looking at them. But “we” are not the customer. He or she isn't really equipped to see or tell the difference between a very nice

Also include testimonials from those happy customers, praising your quality workmanship, whether it's neat, efficient or comfortable.

Customers will listen to you say you're wonderful, but they'd rather hear it from someone just like them, someone who gave you their money in exchange for your services and was glad that they did.

More on the concept of “value-added” next time. ■

# NEW FLOW-AIDE GETS YOU BACK

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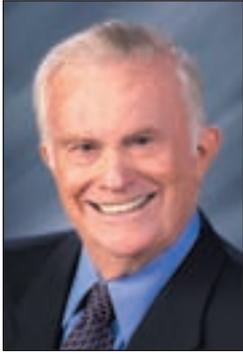


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BY MORRIS BESCHLOSS  
PVF & economic analyst emeritus

## U.S. banks mitigate commercial real estate scare

It has been almost a year since America's regional, local, even major, banks started bracing themselves for the repayment onslaught of more than \$25 billion of past due outstanding commercial real estate loans.

This "bubble" of debt has been growing steadily since the 2008 financial meltdown, recently reaching over 9% of bank-held commercial real estate loans that are 30 days or more overdue. Although the federal government was ready to step in with tailor-made relief programs, the banks have taken it upon themselves by deferring due dates with indefinite extensions, hoping that conditions in the wide-ranging commercial markets — shopping malls, office buildings, condominium towers, institutional structures, etc. — will change for the better in the reasonably foreseeable future.

With the current level of problems almost quadrupling the amount of debt that existed as late as the end of 2007, the repayment capability of most developers has been complicated by overall commercial values that, according to Moody's Investors Service, have sunk 42% below the October 2007 peak.

Federal regulators have been supportive of the banking sector's temporizing the current unsolvable crisis. They have allowed banks to liberally restructure loans and allowed them to be classified as "performing," even if the underlying property has fallen below the loan amount — an ominous warning against ultimate repayment.

Banks hold some \$176 billion of souring commercial real estate loans. About two-thirds of bank commercial real estate maturing between now and 2014 are underwater, as the loans in most cases are larger than today's estimated value of the underlying property. This could eventually mean major write-offs, no matter how long the payments are stretched out. Since the relevant banks have not been setting aside sufficient cash to offset the massive losses that will eventually emerge, a hit to these institutions' earnings would muddy up already stressed-out balance sheets.

Even if marginal survival could be accomplished by the hardest hit banks, they most likely would have to seek safe havens in mergers or sellouts. The crowding out of additional loans required by future projects would make such requests harder to fulfill and available only at a substantially higher rate of interest.

For now, the best that can be expected is an alleviation of a financial catastrophe that could reignite the potential financial meltdown that instigated the late 2008 outbreak of the subsequent "Great Recession."

### Aalberts Industries emerges as a potentially dominant PVF sector force

With the surprise acquisition of Conbraco, heretofore relatively unknown Dutch multi-national Aalberts Industries is emerging as a potential new powerhouse in the U.S. pipe-valve-fittings firmament.

This U.S. participation is neither innovative nor even of recent vintage; for more than a decade, wholly owned subsidiaries Elkhart Brass and Lasco plastic fittings and affiliated products have provided Aalberts a solid base of operation in the American market. However, these companies, which are reportedly doing well as independent manufacturers and marketers, could become part of an overall juggernaut that would catapult the new combo to the top of the heap in the commercial, residential and light industrial markets.

Even these formidable acquisitions are dwarfed by the

purchase of Conbraco, one of the PVF industry's largest privately-owned manufacturing companies, with sales in excess of \$200 million in annual revenues. Thirty-five year old, fast growing Dutch flow control conglomerate Aalberts is now positioned to solidify its brand names and to take its place as a broad-spectrum valve and fitting force. It could join in the leadership of the U.S. manufacturing-marketing scene in that sector of pipe-valve-fittings where ball valve giant Conbraco predominates.

With Conbraco's massive contractor and industrial ball valve market penetration, a coordination with Aalbert's valve and fittings units should give Aalberts Industries a potential growth position, establishing the Dutch-based corporation as a major factor to be reckoned with. Conversely, Aalberts will provide the conduit to open new markets for Conbraco in Europe, where Aalberts' holdings are firmly established. It will be interesting to see what steps founder Jan Aalberts will take to capitalize on the combination of U.S. based PVF assets he has acquired.

With corporate sales of more than \$1.5 billion in 2009, as listed on the Amsterdam Stock Exchange, it would seem a certainty that Aalberts Industries will be on the prowl for additional U.S. acquisitions, synergistic with its present product line development. The emergence of this new, primarily family-owned valve and fittings behemoth would certainly create a new power balance in America's PVF sector's infrastructure.

### Natural gas usage predicted to double in forthcoming years

A report released on Friday, June 25, by the Massachusetts Institute of Technology stated that, in the next 20 years, natural gas will double its share of the American energy market, from today's 20% to 40%. Much of this expansion will come at the expense of coal usage, which is not expected to attain the role of a "clean" energy source, as a powering element for America's expanding power generation.

The use of natural gas as a substitute for gasoline still seems far-fetched at this stage, although it is increasingly used in government vehicles — trucks and buses that can be resupplied at large central locations.

Although billionaire entrepreneur T. Boone Pickens has already invested both his money and reputation in the future of natural gas, it's still questionable whether that aspect of natural gas growth is viable. With the breakthrough of "fracking" shale, which has the capability of releasing untold billions of cubic feet of natural gas, supply appears to have been resolved for many years to come.

Natural gas usage generates only one half the amount of CO<sub>2</sub> and greenhouse gases released by coal, but this may not satisfy the Environmental Protection Agency extremists, who believe that even this diminished amount is too excessive. It seems that the EPA is putting its bets on wind, solar and geothermal energy, even though global experts predict that the long-term energy outlook still indicates that 80% of world energy usage 50 years from now will depend on oil and natural gas.

Even the realization of these facts would not be enough to convince the EPA to change its stance. Its belief system calls for clean air mandates, even if this results in the rationing of power for electrical generation and the limitation of automobile and truck usage on American highways. As long as the current cadre of Environmental Protection Agency members are empowered by the White

(Turn to Beschloss, page 40.)

With the current level of problems almost quadrupling the amount of debt that existed as late as the end of 2007, the repayment capability of most developers has been complicated by overall commercial values that, according to Moody's Investors Service, have sunk 42% below the October 2007 peak.

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GAS CONNECTORS

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## Beschloss

(Continued from page 38.)

House, this approach will not change and will present a serious confrontation in America's energy development plans in the years ahead.

As Congressional recesses and vacations between now and the November mid-term elections highlight the lack of major initiatives passed

during this shrinking interim, the widening schism between the Administration and U.S. business becomes increasingly stark.

No issue dramatizes this difference more dramatically than the unemployment conundrum. The Administration's answer is to repeatedly lengthen interminable unemployment payments to the millions of job seekers that cannot be absorbed by

today's stagnant economic scenario. Businesses, large and small, have asked for protection against stifling regulations and confiscatory taxes that are on the presidential menu after the first of the year, but these concerns go unanswered.

Nothing highlights the forthcoming election campaign more emphatically than these two disparate stands. President Obama believes that the Re-

publicans' refusal to once again extend unemployment compensation will be a windfall for his supporters, who will make this a major campaign issue. The fact that this will only accelerate the federal budget deficit and add to an already unsustainable debt is considered inconsequential to the current policy makers.

Having relied on an unlimited credit card, to be repaid at some distant future date with substantially cheaper dollars, this extension of the original \$800 billion stimulus,

**The Administration's answer [to unemployment] is to repeatedly lengthen interminable unemployment payments to the millions of job seekers that cannot be absorbed by today's stagnant economic scenario.**

passed shortly after Obama took office, continues unabated.

The Administration has no intention of addressing the private sector's increasing concerns, which is likened to a boycott against hiring by these businesses, partly due to Obama's perceived hostility. Even GE chairman Jeff Immelt, a vocal supporter of the White House, has accused the presidential team of panicking the business community into shutting its doors to additional hires.

The president's answer has been to pass the buck, literally and figuratively, to an 18 person bipartisan fiscal responsibility commission, headed by former senator Alan Simpson (R-Wyo.) and Erskine Bowles, current president of the University of North Carolina and former President Clinton's chief of staff. The commission's recommendations, which will purportedly be taken up by Congress after its realignment in January 2011, will form the basis for reining in current government expenditures.

The Administration hopes to enhance its humanitarian concerns for those out of a job without having to address the ballooning debt overhang. The outcome of the November mid-term elections may well depend on whether this sugar pill will be swallowed by the American electorate. ■

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## Steady as she goes: heating industry tacking toward steady growth

BY JOHN MESENBRINK  
chief editor

Soft, flat and steady. Those are the buzzwords when describing the water heating economic forecast. To be positive, at least it can't get worse, right. Well, let's hope not! The industry may never achieve numbers it witnessed years ago when start-ups were cruising. Nevertheless, the economy is holding steady and is poised for "modest" Q1 growth.

The focus of the industry, for the most part, has shifted to energy efficiency, remodel and repair, government jobs and riding what's left of the commercial wave. Backlogs have been thinned and bidding competitive, but let's hope for a stronger 2011. Companies are relying on stronger customer service and better trained technicians to minimize callbacks and increase

word-of-mouth business.

To get a better understanding of the water heating dynamic, *Phc News* recently went looking for answers in forecasting the short- and long-term future of the water heating industry. *Phc News* conducted exclusive interviews with four major water heating manufacturers to get a pulse on the industry: economic forecast, the latest trends and new products and training.

The four major players represented are: Bruce Carnevale, vice president sales and marketing, Bradford White; David Chisolm, brand manager, A.O. Smith; Charles (Chuck) Rohde, wholesaler market manager and Jeff Haney, product manager, Rheem Water Heating; and Stirling Boston, director of marketing, Lochinvar Corporation.

(Turn to Water Heating, page 44.)

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For contractors who want a smart, simplified solution for complete radiant and HVAC system integration and control.
- **Geothermal Webinar**  
For contractors interested in learning the concept of geodomics – combining geothermal and hydronic radiant systems.
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**A.O. Smith**  
**David Chisolm,**  
**Brand Manager**

*In general terms, how would you forecast the water heating market (economy) for Q4 2010 and early 2011?*

We see the general water heater market staying relatively flat for the balance of 2010 with modest recoveries in 2011. It will be quite some time before the market recovers to the previous level that we experienced in 2008/2009.

*What are some new trends you are seeing or are initiating in the water heating marketplace?*

There is a general trend of new technology being driven by the demand for higher energy efficiency products. This trend is impacted by a number of factors: government and state incentives, utility rebates, consumer awareness, energy costs, etc. Likewise, with this new technology, advanced electronic controls and diagnostics are also emerging. With the advancement of these new technologies, homeowners now have many options when selecting a water heater. Regardless of fuel type, there are better performing, more energy efficient options now available.

*Is your company offering any new products, incentives or training?*

There is an entire portfolio of high efficiency products now available from A. O. Smith. From the Cirrex solar water heating system to hybrid gas (Next) and electric (Voltex) models to a high efficiency gas model (Effex), there are options for every lifestyle. With an increased focus on driving energy efficiency, there are now many options for homeowners regardless of their fuel type.

*Describe any government incentives, rebates. Do your products qualify for ENERGY STAR®?*

Several of the high efficiency portfolio products qualify for the Federal Tax Credit, as well as other state and local utility incentives. The Hybrid Electric model (A. O. Smith Voltex) qualifies for a 30% Federal Tax Credit up to \$1,500. Likewise that model often qualifies for additional state and utility rebates. A. O. Smith's Next Hybrid gas model also qualifies for the Federal Tax Credit and many other state and local utility rebates. Many of these incentives expire at the end of 2010. On the other hand, A. O. Smith Cirrex solar thermal system qualifies for the Federal Tax Credit of 30% of the total installed cost with no upper limit. This credit is valid until the end of 2016.

Regarding Energy Star, the A. O. Smith Effex model is a high efficiency gas model that is ideal for replacement applications. With an EF of .70, it exceeds the upcoming (more stringent) phase of ENERGY STAR. In addition to the Effex model, A. O. Smith's Cirrex and Voltex models are also ENERGY STAR qualified.



**Lochinvar Corp.**  
**Stirling Boston,**  
**Director of Marketing**

*What are some new trends you are seeing or are initiating in the water heating marketplace?*

With the ongoing trend toward green building, Lochinvar is at the forefront of offering high-efficiency water heaters that keep energy usage and operating costs to an absolute minimum. In addition, Lochinvar is now offering new solar indirect water heaters, which draw heated water from a separate solar energy collector.

*Is your company offering any new products, incentives or training?*

Lochinvar has expanded upon its highly successful Squire® indirect water heater line to include a total of 12 stainless steel models with capacities between 30 and 119 gallons. Among the new models are six solar units, each of which features a hybrid system incorporating solar thermal panels along with a secondary boiler heating coil or electric back-up.

The ARMOR® water heater, which offers thermal efficiencies up to 98% and is available with inputs ranging from 150,000 to 800,000 Btu/hr, is now equipped with the enhanced SMART SYSTEM™ user control. The re-engineered SMART SYSTEM design features a larger display screen — nearly twice the size of the original, soft keys for quick and easy use, as well as color coding functionality. The interface displays a blue screen during normal system operation, while a yellow screen signals that maintenance is due and a red screen notifies the user that the appliance is in lockout mode.

In addition, the upgraded SMART SYSTEM offers two selectable cascade options to allow the user to fine-tune the sequencing of multiple-unit installations. While the built-in-cascading sequencer still allows up to eight boilers to be installed with Lead-Lag operation, the upgraded control now also offers the option of Efficiency Optimized cascade operation, under which multiple units in the system modulate at the same firing rate to meet load requirements.

Lochinvar recently announced their Solar Thermal Heating initiative, which is the result of a new partnership with TiSUN® GmbH of Tyrol, Austria. The partnership between Lochinvar and TiSUN has resulted in a winning team with smart strategies that provide the exact product, training and support that contractors need to provide renewable energy solutions for their clients.

Lochinvar also is expanding its current finished product warehouse facility in Lebanon, Tenn. As Lochinvar's residential boiler business continues to grow and the company extends its offering to include new commercial solar thermal products and additional stainless steel indirect water heaters, many



**Bradford White**  
**Bruce Carnevale,**  
**Vice President Sales & Marketing**

*In general terms, how would you forecast the water heating market (economy) for Q4 2010 and early 2011?*

In general, the water heater market has recovered nicely in the first half of 2010. The total market is up about 7% year over year through June, with growth in residential gas outpacing residential electric by about 3 to 1. This is likely driven by Energy Star rebates and new technologies in gas products such as Bradford White's ICON System and some hybrid technologies. I expect this general trend to continue through the rest of 2010 and into the beginning of 2011.



*What are some new trends you are seeing or are initiating in the water heating marketplace?*

There has been a significant shift in sales toward the wholesale channel (away from the retail channel) in the first half of 2010. Again, this trend is more predominant with the residential gas category, but the residential electric category has also shifted towards wholesale. Clearly there is interest in products which are marketed as being more energy efficient such as Energy Star qualified models, hybrid gas models, heat pump water heaters, solar and tankless models. High efficiency (condensing) tankless models are quickly gaining share in the tankless market (not unlike mod-con boilers, but at a much slower rate).

*Is your company offering any new products, incentives or training?*

Bradford White continues with our strategy of bringing practical, energy saving technology to our broader product offering so that the majority of consumers can benefit (ICON and ICON Accessory Packages). At the same time, we continue to expand our line of specialty products such as our Combi1 and Combi2 Series of combination water heating/space heating models; our line of 32 different solar models (including a very unique solar water heater with gas back-up); and the ultra high efficiency Residential eF models.

of which will be manufactured at the Lebanon headquarters, this expansion is a strategic step towards ensuring that demand is met and growth is maximized. The expansion will add a total of 23,000 square feet to the Lebanon Distribution Center. Lochinvar expects the project to be completed in August of 2010. The facility's current operation will experience minimal disruption during the construction period.

**Do your products qualify for Energy Star?**

Energy Star is a residential appliance incentive. For boilers, it is for models under 300,000 Btu/hr with an AFUE rating of 85% or better. With AFUE ratings of 95% and 96%, Lochinvar Knight boilers are ENERGY STAR appliances. Currently, there is a federal rebate of up to \$1,500 for the installation of ENERGY STAR boilers. Also, many state and gas utilities offer rebate programs in addition to the federal program.

**Describe any government incentives, rebates. Do your products qualify for ENERGY STAR®?**

Federal government energy tax credits are set to expire at the end of 2010. State rebate programs continue in some states under the "cash for clunkers appliance" program. This was funded by the federal government, but administered by the states. Each state has its own criteria and rebate levels. We maintain a database of all of the state rebate programs to assist our customers with what can be a very confusing process. We have many products which qualify for the current ENERGY STAR program, and we have already introduced our "D4" Series of flue dampered residential gas models, which meet the September, 2010 ENERGY STAR requirement of .67 Energy Factor.

There is interest in heat pump water heaters, but based on our research, the sales seem to be below expectation even with the 30% tax credit. It will be interesting to see what happens when the tax incentives are gone. However, with the new DOE minimum energy efficiency standards for 2015, heat pump water heaters will likely become standard for capacities more than 55 gallons.

**Rheem Water Heating  
Charles (Chuck) Rohde, Wholesaler Market  
Manager & Jeff Haney, Product Manager**

**In general terms, how would you forecast the water heating market (economy) for Q4 2010 and early 2011?**

We expect the water heater market to be up 5-7% in Q4 2010 and flat to up slightly in Q1 2011.

**What are some new trends you are seeing or are initiating in the water heating marketplace?**

Trends include the development of high energy factor (EF), alternative technology products (heat pump, solar, condensing gas and other hybrid gas); as well as Energy Star and compact/small footprint combo water/air heating products. Also, partnerships with off-grid, electric generation appliances (i.e., wind generation). Trends for the consumer include interconnectivity of HVAC appliances; energy management and demand response management.

**Is Rheem offering any new products or training?**

- Online product and technology training for Rheem-Ruud plumbing contractors and utility partners.



- Combination products, such as tankless with solar; HPWH with solar.

- Water heaters with internal heat exchangers and thermal storage tanks for alternative energy sources.

- Rheem introduced its new Integrated HVAC & Water Heating System Powered by Tankless Technology, a product that offers home heating and hot water from a single source. When combined with Rheem cooling equipment, the system offers complete air and water home comfort. The system is designed, built, and warranted by a single manufacturer, ensuring seamless product integration.

**Do your products qualify for ENERGY STAR®?**

Rheem tankless water heaters are ENERGY STAR qualified and eligible for a federal tax credit of 30 percent of the total installed cost, up to \$1,500. The Rheem Integrated HVAC & Water Heating System Powered by Tankless Technology is protected by a five-year air handler warranty and a 10-year tankless heat exchanger warranty.

**Congratulations Bill Raymond and Frank & Lindy Plumbing & Heating for being #1 on the Top 20 under 20 list!**



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# Dog day afternoons

## Dog park's solar-powered restroom goes off-grid

When Heritage Park, the 1,238-acre park is located in Johnson County, (Olathe), Kansas, needed to go a little “off-gridding,” a top-notch solar photovoltaic (PV), hot water and radiant floor system — a complete

In particular, the off-leash dog park needed an oasis of the human kind. To accommodate the 200+-person traffic per day, a state-of-the-art off-grid restroom was designed, built and is now in full working order. This 30-acre, fenced open

both solar thermal and solar PV systems to facilitate the off-grid application. This simple restroom became a cost-efficient energy efficient green building by utilizing the following:

- Photovoltaic source of electrical power;



Bob Dolan, owner of BMK Plumbing & Solar of the Midwest, stands proud atop the solar powered restroom in Olathe, Kansas. The completed installation used 120 Viessmann Vitosol 300-T evacuated tubes for solar thermal and 20 Suntech 175-watt panels for the facility's electricity needs.

solar-powered restroom facility — was the answer. Heritage Park's overall recreational facilities include 10 picnic shelters (two large capacity), a 40-acre lake, marina with pedal boat rentals, a 30-acre dog area, concessions, shelters and picnic areas, play areas, athletic fields for softball, football, soccer, and the 18-hole championship Heritage Park Golf Course and driving range.

space with a small pond is a play land for hundreds of canines — and happy humans — to roam free.

Architect Berger Devine Yaeger (BDY), who spec'd the system, was approached by the Johnson County Parks district to design a simple restroom structure in Heritage Park that could be used year round. Because of its location, off grid was chosen for energy design. The building features

- In-slab radiant heat with rooftop solar vacuum heating tubes;
- Passive solar heating by the use of a Trombe wall;
- Indirect lighting through the use of clearstory windows;
- Durable CFMU insulated masonry wall construction; and
- Structurally-insulated roof panels.

The contractor for the solar thermal job was Bob Dolan, owner, BMK Plumbing & Solar of the Midwest, who won the contract to install waste, vents, water, radiant floor heating, solar thermal and solar PV.

The solar thermal system consists of 120 Viessmann Vitosol-300 evacuated tubes supplied to BMK Plumbing from Metropolitan Industries, Romeoville, Ill.; there are a total of four 30-tube manifolds. The solar thermal tubes are for heating the floor, which, of course, has radiant tubing installed in it.

The Vitosol 300-T high performance vacuum tube collector operates according to the proven heat pipe principle. It consequently offers particularly high operational reliability.

One of the specific applications of the Vitosol 300-T is in systems with long phases of high solar irradiation without heat transfer, so called stagnation phases. The dry connection of the heat pipe tubes inside the header and the integral temperature limiter ensure particularly high operational reliability.

In heat pipe systems, the solar medium does not flow directly through the collector tube. Instead, a process medium, which circulates in the copper pipe below the absorber, evaporates when subjected to solar irradiation, and transfers the heat to the solar medium via a heat exchanger.

The condensers are completely surrounded by the patented Duotec twin-pipe heat exchangers. This absorbs the heat particularly well and passes it into the heat transfer medium flowing past it.

Also, a temperature limiter integrated into the Vitosol 300-T protects the system against overheating during longer idle periods.

The system also used a Viessmann Divicon pumping station and a solar controller.

The hot water storage tank is a 400-gallon solar tank custom-built by Metropolitan Industries and has double coils for taking heat off the solar system and transferring it to the radiant floor system. The tank is well insulated with 3" foam on the top and 2" on the sides.

As a back-up heating source, a 150-gallon propane tank was used.

The solar PV system — consisting of solar modules that convert the sun's energy into electricity — is made up of 20 Suntech 175-watt PV panels — supplied by Conergy — which charge 24 batteries. Conergy selects the best solar modules in the industry, including selections from BP, Sanyo and GE. The DC power in the batteries is converted to AC power, which runs the lights, fans, solar pumping station and radiant floor pumping station.

“My good friends at Pestinger Heating and Air, Salina, Kansas, who installed the HVAC, electrical and solar PV system, partnered with me on the electrical and mechanical part of the project,” said Dolan.

The net energy usage is conservatively estimated at 2,347 kWh and 378 gallons of propane, as estimated by Richard Beardmore, engineer, Latimer Sommers & Associates. (See Figure 1 & Figure 2 for potential thermal and PV savings.) “Since the solar PV and solar thermal systems were designed to carry the loads on sunny days, it's all savings; but we do

(Turn to Solar... page 48.)



The 400-gallon solar tank was custom-built by Metropolitan Industries and has double coils for taking heat off the solar system and transferring it to the radiant floor system.

# Heat-Flo Does the Job For You!

Heat-Flo designs, develops, and manufactures a wide range of high quality products for HVAC, Hydronic and Radiant heating applications.

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## Indirect Water Heaters

The Heat-Flo indirect is designed with the installer in mind. All connections are on top for a neat, clean installation. The smooth wall stainless coil will collect less lime and sediment, and deliver full output for years. The brass drain and relief valves are factory installed, and a Honeywell Control is included. All 316L stainless tank and coil, a flexible thermoplastic jacket, and R-12 insulation add up to quality second to none. Available in 30, 40, 50, 60, 80, and 115 gallons.

## Dual Coil Indirect Water Heater

Our dual-coil domestic hot water storage tanks are made in 60, 80 and 115 gallon units. The lower heat exchanger coil can be connected to solar collectors, and the upper heat exchanger coil can be connected to a hot water boiler for backup. The units are provided with the two heating coils and two 3/8" ID thermal wells to control each coil independently.

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Heat-Flo Hot Water Storage / Booster Tanks are fully insulated, all stainless steel construction, and supplied with thermostat, drain and T+P valves factory installed. Units are supplied with hot and cold connections, and two dip tubes to circulate water through the heat source, and in and out of the tank.



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Hot Water Storage/  
Booster Tanks

Dual Coil Indirect  
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Circle 32 on Reader Reply Card

## Solar restroom provides off-grid 'relief'

(Continued from page 46.)  
have propane as a backup source," said Beardmore.

"With the uniqueness of the solar thermal and solar PV on this project, the general contractor, Wilcott

Construction, took great care in detailing to the architects, Berger Devine Yaeger (BDY), and engineers, Latimer Sommers & Associates, all items that came up in the construction process — which had



The collectors are rapidly interconnected through the reliable stainless steel corrugated pipe plug-in connectors on installation. The individual tubes can be precisely aligned with the sun by axial rotation.

SOLAR COLLECTOR CERTIFICATION AND RATING				CERTIFIED SOLAR COLLECTOR																											
 SUPPLIER: Viessmann Manufacturing Company (US) Inc. 41 Austin Road Newark, NJ 07106 USA				MODEL: Viessmann 300T-025 3m2 COLLECTOR TYPE: Tubular CERTIFICATION #: 100-2005-0200																											
				COLLECTOR THERMAL PERFORMANCE RATING																											
Megajoules Per Panel Per Day				Efficiency of Hot Water Panel Per Day																											
CATEGORY (To To)	CLEAR DAY (17 kWh/m <sup>2</sup> )	MILDLY CLOUDY DAY (17 kWh/m <sup>2</sup> )	CLOUDY DAY (10 kWh/m <sup>2</sup> )	CATEGORY (To To)	CLEAR DAY (17 kWh/m <sup>2</sup> )	MILDLY CLOUDY DAY (17 kWh/m <sup>2</sup> )	CLOUDY DAY (10 kWh/m <sup>2</sup> )																								
A. 100%	44	34	24	A. 100%	44	34	24																								
B. 100%	44	34	24	B. 100%	44	34	24																								
C. 100%	44	34	24	C. 100%	44	34	24																								
D. 100%	44	34	24	D. 100%	44	34	24																								
E. 100%	44	34	24	E. 100%	44	34	24																								
Original Certification Date: August 6, 2008																															
COLLECTOR SPECIFICATIONS				PRESSURE DROP																											
Gross Area: 4.287 m <sup>2</sup> 46.15 ft <sup>2</sup> Dry Weight: 48 kg 106 lb Test Pressure: 1.50 MPa 21.75 psi				Net Aperture Area: 3.760 m <sup>2</sup> 40.61 ft <sup>2</sup> Fluid Capacity: 1.8 l 0.5 gal																											
COLLECTOR MATERIALS				PRESSURE DROP																											
Frame: Aluminum Cover (Glazing): Glass/Titanium Nitride Cover Assembly: None Absorber Material: Tube - Copper / Plate - Copper Fo. Absorber Coating: Selectrad Selectrad Insulation (Back): None Insulation (Front): None				<table border="1"> <thead> <tr> <th>Flow</th> <th>Temp</th> <th>ΔP</th> <th>Flow</th> <th>Temp</th> <th>ΔP</th> </tr> </thead> <tbody> <tr> <td>100%</td> <td>50°C</td> <td>0.12</td> <td>100%</td> <td>50°C</td> <td>0.12</td> </tr> <tr> <td>100%</td> <td>60°C</td> <td>0.12</td> <td>100%</td> <td>60°C</td> <td>0.12</td> </tr> <tr> <td>100%</td> <td>70°C</td> <td>0.12</td> <td>100%</td> <td>70°C</td> <td>0.12</td> </tr> </tbody> </table>				Flow	Temp	ΔP	Flow	Temp	ΔP	100%	50°C	0.12	100%	50°C	0.12	100%	60°C	0.12	100%	60°C	0.12	100%	70°C	0.12	100%	70°C	0.12
Flow	Temp	ΔP	Flow	Temp	ΔP																										
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100%	70°C	0.12	100%	70°C	0.12																										
TECHNICAL INFORMATION				TECHNICAL INFORMATION																											
Efficiency Equation (NOTE: Based on gross area and (P <sub>o</sub> = 0.14) H <sub>o</sub> = 1.0 - 0.0002 (L <sup>0.75</sup> ) - 0.0018 (D <sup>0.75</sup> ) I <sub>F</sub> Factor: η = 0.978 - 0.0018 (D <sup>0.75</sup> ) - 0.0002 (L <sup>0.75</sup> )				L <sub>min</sub> (mm) 1000 L <sub>max</sub> (mm) 1000 Max ΔT (°C) 30 Max ΔT (°F) 86																											
Incident Angle Modifier (I <sub>F</sub> ) = 1.0 Max ΔT (°C) 30 Max ΔT (°F) 86				Model Tested: Viessmann 300T-025 3m2 Test Fluid: Propylene Glycol & Water Test Flow Rate: 6.00 gpm																											
REMARKS: Collector tested with long side of tubes oriented north-south. L <sub>min</sub> perpendicular to the tubes in listed above. L <sub>max</sub> parallel to the tubes. (L = 0.75m)																															

Figure 1. Potential energy savings on the solar collectors as calculated by Viessmann Mfg. Co.

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## SmartPlate Water Heaters are designed to work with condensing boilers in low-temp systems.

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- Reduces energy costs
- Reduces scale build-up

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- ±4°F under normal load changes
- ±10°F no load to full load

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Each unit ships fully assembled. This includes: control panel and sensors, potable water side circulator with clean out connections, DHW drain valve, as well as shut-off valves and inlet strainers on both the boiler water and DHW sides.

resulted in addressing those issues and kept the project moving forward. The engineers and architects were very forward thinking, as well," said Dolan.

The project wasn't without its share of obstacles. Balancing the cost, maintenance, payback and energy usage were just some of the problems to overcome.

Also, BMK battled the elements while working the project in the winter months. "After a long battle fighting winter weather, the Heritage Park solar-powered restroom is up and running. All that remains now is to allow the sun to do its work to run this facility. Time will be on our side in proving solar thermal and PV can work on buildings such as this," said Dolan. ■



The final energy efficient green building features photovoltaic source of electrical power and in-slab radiant heat with rooftop solar vacuum heating tubes.

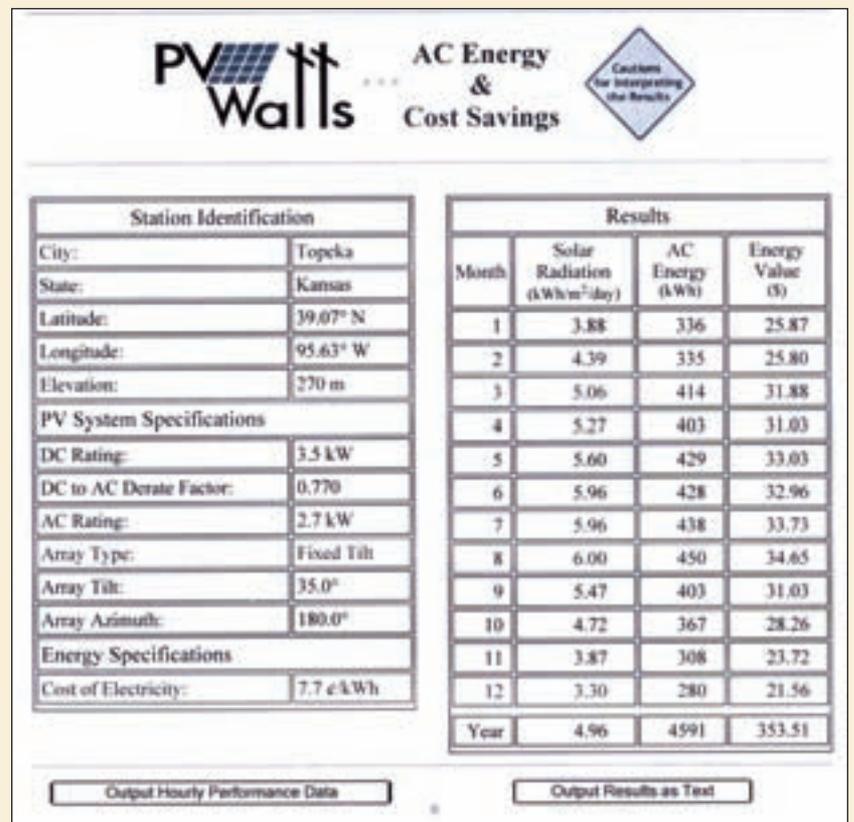


Figure 2. Potential energy savings on the PV system as calculated by PVWatts.

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- Max. boiler water pressure drop is 10 PSIG
- Max. DHW pressure & temp is 150 PSIG @ 180°F
- Max. boiler water pressure & temp is 150 PSIG @ 220°F



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- 20-Year Pressure Vessel Warranty



#### U-Tube Double Wall Heaters

- UL Listed Steam-to-Water & Water-to-Water Heaters
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- <4 ft<sup>2</sup> Footprint
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# PVF market conditions – Q3 2010

## Stainless Steel Pipe

**Pricing** — Price levels are expected to be flat over the full third quarter of 2010. One manufacturer reports that general activity seems to be picking up, but overall mill backlogs are not good.

**Lead Times** — Delivery lead times remain at 6 - 8 weeks, with fill rates down to 10% - 20%. Non-standard material delivery is running 8 - 10 weeks.

**Comments** — Commodities lately seem to be following the general trend of the Dow. If you can figure out what the stock market is going to do, commodities seem to be on the same track according to comments from one manufacturer. Slower global growth and the resolution of a year-long strike by Vale workers will keep nickel prices on a downward trend until the fourth quarter. Stainless steel is the key consuming industry for nickel. Global stainless steel production is expected to slow in the third quarter compared with the average in the first half of the year.

Specials are taking a little longer for shipping in 4 - 6 weeks.

**Comments** — Manufacturers view the fact that nickel and scrap prices have been relatively stable since mid-May as a healthy sign for near future demand prospects. One manufacturer comments that the “boom and bust” cycles can play havoc throughout the entire stainless steel PVF channel as participants are forced to try and “over-think” procurement plans as opposed to purchasing against real time, actual demand requirements. One manufacturer comments that the formula by which surcharges are implemented has a tendency to “overstate” and “understate” actual demand as market participants tend to over-purchase as raw materials spike and under-purchase as raw materials decline significantly. One manufacturer stated that there is too little demand with projects slowing (BP effect). The most volatile issue affecting the PVF market is the government. End users are nervous about the following:

pricing for stainless steel flanges to be down 5% - 7% for 3rd Quarter 2010 due to raw material costs (nickel is down), poor economy, demand and the financial crisis. This down trend follows the prior increase during the 2nd quarter.

**Lead Times** — Fill rates are only 30% - 40% with fill rate of 2 - 3 weeks for stainless and 4 - 6 weeks for nickel alloys.

**Comments** — Projects continue to be very few. Those that are evident are much smaller than before. Due to the existing economy and high unemployment, the PVF industry is in a concerning mode. The raw material price swings and the current government administration's pessimistic view on fossil fuels are issues currently affecting our market. The economy and government regulations are both negative to the industry.

## Carbon Steel Pipe - Seamless, ERW and Continuous Weld

**Pricing** — Manufacturers predict pricing to remain level thru the 3rd



BY GARY CARTRIGHT,  
PVF analyst

uncertainty in the global economy. Steel makers painted a gloomy picture for the short-term prospects of the steel industry during the last week of July, saying global prices had fallen and industrial demand was not recovering as quickly as expected. The negative outlook from Japan to North America sent steel makers' share tumbling as reported by REUTERS in the New York Times. The United States Steel Corporation said it was seeing slower order rates and the AK Steel Holding Corporation said it was cutting production capacity to match weak demand from big steel buyers like the automobile and construction industries. Steel prices had risen slowly over the past year, but in the last few months they have slipped with lower demand and raw material costs rising.

## Carbon Steel Weld Fittings and Flanges

**Pricing** — Manufacturers are not forecasting a price change for carbon steel fittings and flanges for the 3rd Quarter 2010. Manufacturers indicate no significant change in the cost of manufacturing.

**Lead Times** — Deliveries are forecast for 2- 3 weeks with fill rates of 80% - 90% or more.

**Comments** — Manufacturers report that the market remains sluggish and uncertainty is stifling demand. One manufacturer reports that uncertainty in the financial markets, the looming “Cap and Trade” legislation and the BP disaster are causing the industrial and commercial market to take a cautious look at entering into new construction projects along with casting doubts on the continuation of existing projects that are approaching re-financing threshold or drilling authorization. The most volatile issue affecting the PVF market is the current administration's approach to the economy reports a manufacturer. In the near term manufacturers see a return to the  
(Turn to PVF... page 52.)

## North American Stainless Steel Price Index (Grade 304)

Grade 304	June 2009	July 2009	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010	May 2010	June 2010
US\$/Ton	2223	2428	2760	2945	3320	3214	3290	3115	3175	3405	3570	3999	4379
Index	106.9	116.7	132.7	141.6	159.6	154.6	158.2	149.8	152.7	163.7	171.7	192.3	210.0

Furnished by MEPS International (Index Base 1997 = 100)

## Price Data for 316 Stainless Steel Flatroll Product in USD/LB

316 SS Flatroll	Dec 2009	Jan 2010	Feb 2010	Mar 2010	April 2010	May 2010	Jun 2010	July 2010	Average
Low	1.8279	1.7044	1.7407	1.9316	2.0473	2.3014	2.5169	2.2633	2.04169
High	2.0559	1.9324	1.9687	2.1596	2.2753	2.5294	2.7449	2.4913	2.26969
Avg	1.9419	1.8184	1.8547	2.0456	2.1613	2.4154	2.6309	2.3773	2.15569

## Stainless Steel Weld Fittings, 150 and Hi-Pressure Fittings

**Pricing** — (Weld Fitting 150#) (SS Pressure Fittings) One manufacturer predict no change in pricing thru the 4th quarter; however, several other manufacturers indicate pricing will be down 2% - 5%. If nickel prices rise, which is predicted, it may cancel any decrease. It is predicted that nickel prices will be on the rise. Pressure fitting manufacturers indicate price increases of 5% - 7% due to raw material costs.

**Lead Times** — Material is shipping from stock with a fill rate of 90% or better with lead times of 2 - 4 weeks.

health care, Cap-Trade, and 2011 tax increases. Once they feel more comfortable with the rules, then we may see an improvement in the economy. Another comment from one manufacturer concerning the PVF market, “too many players, too few buying customers...if low demand continues, companies will consolidate more or disappear altogether.” Manufacturers indicate that the delivery of forged stainless steel items continue to outpace class 150 fittings.

## Stainless Steel Flanges

**Pricing** — Manufacturers indicate

Quarter due to over-supply, and weak demand.

**Lead Times** — Fill rates are running 20% - 30% with lead times of 6 - 8 weeks.

**Comments** — Steel mill utilization is currently at 72%, down slightly from 73% three months ago. Through June, global blast furnace iron production is up approximately 27% over 2009 levels and steel mill capacity utilization is currently at 80% in Europe and 84% in China. In the global market, steel demand for the balance of 2010 through 2011 is expected to remain at current levels in Europe and North America due to

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## PVF prognostication

(Continued from page 50.)

requests for domestically produced material due to quality issues, availability, inventory carrying costs and liability considerations.

resents a 37.5% year over year increase from the same period in the previous year. Adjusted year to date production through July 17, 2010 was 48.322 million tons, at a capa-

### Price Data for All Carbon Steel Products Composite Price & Index for North America

Carbon Steel	Jul 2009	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010	May 2010	Jun 2010
Price	626	668	680	683	660	659	717	757	775	845	848	790
Index	144.9	154.6	157.4	158.1	152.8	152.5	166.0	175.2	179.4	195.6	196.3	182.9

Furnished by MEPS Steel Prices July 2010

The American Iron & Steel Industries reported that, in the week ending July 17th, 2010, US domestic raw steel production was 1.726 million tons while the capability utilization rate was 71.4%. Production was 1.255 million tons in the week ending July 17, 2009, while the capability utilization rate was 52.4%. The current week production rep-

bility utilization rate of 70.6%. That is a 62.2% year over year increase from the 29,797 million tons during the same period last year, when the capability rate was 44.6%. This estimate is based on reports from companies representing about 75% of the US's raw steel capability and includes revisions for previous months.

### Forged Steel Fittings

**Price** — No price change is forecast for forged steel fitting during the third quarter.

**Lead Times** - Material shipment fill rates are 80% - 90% with lead times for commodity material not in stock running 1 - 2 weeks. The initial ship-

Previously the weakened dollar acted as a barrier to competitiveness. As the dollar strengthened against the Euro, we could begin to see increased pressure. Special bar quality steel, the raw material utilized in forged steel production continues to increase. Beginning the fourth quarter of 2009, we have experienced a 30% increase on raw material costs. The industry is beginning to encounter lower scrap surcharges, but Arcelor Mittal has announced a September 1st \$40/ton increase nullifying the scrap reductions.

### Stainless Steel Gate, Globe, and Check Valves

**Price** — Stainless valve manufacturers for gate, globe and check valves indicate no price change due to raw material costs and demand.

**Lead Times** — Fill rates are running 80% - 90%. Lead times for commodity valves not in stock are forecast for 8 - 12 weeks. Non-stock

(Turn to PVF... page 80.)

ment percentage has increased 2 - 3% from the second quarter of 2010. New capital investments are aiding the manufacturing process with one manufacturer.

**Comments** — Import pressure from Asia, is consistent with the first half of 2010. We have seen an increase from Italian manufactures as currency issues have been reduced.

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# Making the world a better place

*Kimbel Mechanical thrives through efficient project execution*



From l to r: Project manager Brandon Batchelor, Rob Kimbel, CEO/owner, and COO Brad Smith are instrumental in making Kimbel Mechanical Systems Inc. run like a well-oiled machine.

As a dark economic cloud wrapped itself around the U.S. market, one mechanical contracting firm held steady through diversification, a proven track record with multi-family housing, military work and other large scale projects.

Kimbel Mechanical Systems Inc., headquartered in Springdale, Ark., is a firm that now employs 75 people and is actively recruiting a dozen more technicians. A few years before the housing bust, company managers felt what seemed to be a tremor or two that prompted them to assess their involvement in new construction work.

At the time, their military, tax credit, and multi-family work was growing. "So we moved toward these eagerly, and the decision paid off," said Brad Smith, COO.

Over the past few years, a growing percentage of their employees have been involved in these types of projects, anywhere between New England and Texas. They're growing, too, at a time when many larger firms are struggling.

## Jobsites nationwide

For the past five years, Kimbel Me-

chanical has operated on a nearly national scale. With 80 jobsites currently in progress between Massachusetts and Oklahoma, it's no surprise that they run a tight ship.

"Our ability to work successfully over such a broad geographic area can be attributed to many things," said Smith. "We feel we've got a great

units and 10 units that were abandoned by a previous contractor. It's substantial: each of the living units are 1,500- to 1,800-sq.-ft, three-bedroom homes.

Keeping jobs on track and logistics aren't the only things taken seriously. The level of security, logistics and documentation is daunting. All

**Keeping jobs on track and logistics aren't the only things taken seriously. The level of security, logistics and documentation is daunting. All products need to meet a completely separate set of standards on all facets of the job...**

management team, a culture that encourages efficiency and good work, and a highly efficient logistics system. After all, we purchase and move a lot of equipment, supplies and materials over a large area, and the clock is always ticking."

The company is in the process of completing nearly 1,000 single-family home renovations at an Air Force base in Arkansas, expected to be finished in the summer of 2011. They are also completing plumbing installations for 133 new construction

products need to meet a completely separate set of standards on all facets of the job, and installed equipment, must also comply with the Buy American Act.

"Managing materials for any of the military jobsites is 10 times more complicated than for civilian residential jobs," Smith said.

All the military housing units have Bradford White 50-gallon power vent water heaters with the new Icon system. The Icon water heater control system is right in line with the gov-

ernment interests — safety and efficiency all in one simple package.

Kimbel also replaced and repaired many of the sewer taps, mains and lateral lines to the residences. This was a major undertaking since the lines were more than 50 years old. This required close coordination with the general contractor, base housing management, military personnel and the Air Force. A similar project is under construction at an Air Force base in Massachusetts.

The Air Force projects, however, began with a challenging twist. Though neither of the jobsites were Kimbel's first military project, both were well under construction before being abandoned by a large commercial contractor that filed for bankruptcy and dissolved.

When the firm went under, there was a two-and-a-half year period where nothing happened. After that, federal contracts were cut for a new general contractor who chose Kimbel Mechanical Systems to resume the work.

"It was interesting, but unpleasant, to pick up where they left off," added Smith. "There was minimal information and few blueprints available to us, so there was a lot of extra work needed to figure out what was there, and what needed to be done."

In addition to these military projects, Kimbel has worked on military housing projects in Texas, Louisiana, Mississippi, Kansas, and Virginia.

## Guatemala-bound

No doubt, there's a certain level of stress involved in growing a company amidst economic turmoil while sending people and material all over the country. High quality standards must be met consistently while meeting stringent deadlines. Kimbel managers acknowledge these needs and yet, at the same time, set their sites on giving back.

"It has become part of our culture, and now an important part of who we are as a company, and also as individuals," said Smith.

"We know in our hearts that we're blessed through our work and profitability, and — because of this — we knew there was more that we could do to make the world a better place," he added. "We turned our attention toward some of the poorest people in the world — by sending crews to Casa Para Niños, one of the largest orphanages in Central America."

"We believe that life is more than what you put in the bank," continued Smith. "It's not just about us. We, who have, are blessed with the (Turn to History, page 56.)

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Boiler Control
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Circle 57 on Reader Reply Card

## Company history blends quality and discipline

(Continued from page 54.)

opportunity to share what God gave us, with those who do not have.”

So, while some Kimbel crews may be attending to the needs of a large commercial project in Richmond and others preparing for a big retrofit job in Louisiana, several other employees may be thousands of miles away in Central America.

While Kimbel's crews (up to eight workers at a time) are at the orphanage, they fix plumbing in the numerous buildings and help out in any way they can. The scope and variety of work is endless. Projects range from well drilling and water tower construction, to installing strainers on sinks and routine maintenance.

“A friend and I did one project that included busting up some old concrete,” recalled Smith. “We were quite a sight to see, lumbering through customs with a jackhammer and a demo saw. We definitely paid the additional baggage fee that time,” he laughed.

Which employees are sent to Guatemala depends largely on two things; who wants to go, and who has the time. Another consideration is

what specific skill set is needed at the orphanage at that time. “If the guys are willing to volunteer their time, we help them get down there and coordinate the tasks they’ll need to do.”

Smith has been to Guatemala on ten separate occasions. Over the past three years, he and his wife Laura have gone through an arduous adoption process, hoping to open their hearts and home to an 11-year girl named old Suzie. “We already see her as a member of our family and feelings are mutual. We can’t wait to bring her home.”

Established by Miles Kimbel in 1984 in Cleveland, Kimbel Plumbing relocated to Springdale, Ark., 18 years ago. At the time, Miles focused entirely on residential plumbing.

Over the past decade, the firm diversified and began doing mechanical system work as well, changing their name from Kimbel Plumbing to Kimbel Mechanical Systems. To no surprise, the firm’s strong reputation has had no problem holding its own across the new territory.

Kimbel’s mission statement is: *To be the leading professional mechan-*

*ical company in all our markets. Through the delivery of quality work, disciplined project management and on-time completions, we will provide a healthy company to drive the success and sustainable growth of our contractors.*

Now managed by Rob Kimbel, CEO, Smith, and Brandon Batchelor, senior

truck. Often times, three or four trucks will come in at once. As they’re dropping off systems at one end, we’re shipping them out to jobsites at the other.”

“I recall, for a big job at one Air Force base that Kimbel was doing, we shipped them 565 power vent Bradford White water heaters,” said



Project manager Brandon Batchelor bids on a project.

project manager, the company has grown into one of the largest mechanical contractors in the state. The firm had as many as 110 employees but needed to trim back during the worst of the recession.

### Commercial as well

Although the military jobsites are on a commercial scale, Kimbel still considers that work, in essence, to be residential. Of all the work Kimbel does, 80% is residential, comprised chiefly of multi-family units and high-end, single residence houses. Their commercial work is just as varied as work on the residential side, comprised mainly of work at nursing homes, assisted living centers, hotels, office and tenant in-fill.

Kimbel will sometimes work on mechanical systems for large assisted living facilities where energy efficiency, and meeting resident demands, are a top priority.

On a recent job, Kimbel managers specified the placement of a 120-gallon, 95% efficient Bradford White eF water heater to supply kitchen and common area domestic hot water for the main building of a 96-unit facility. All the individual units have a small water heater by the same manufacturer.

### Mass quantities

Kimbel has challenged Bradford White by ordering water heaters by the semi load. “We consistently install 60 water heaters a week out of our Springdale location,” said Smith. Up to 170 water heaters fit on one

Nathan Geyer at wholesale-giant Ferguson Enterprises - Springdale branch. “Kimbel has a big presence here. The size and scale of their operations is impressive.

Sometimes equipment is shipped directly from the factory to the jobsite, or to Kimbel’s warehouse; other times from the wholesaler’s warehouse to the jobsite. It’s no surprise to learn that the company stocks more inventory than many wholesalers do.

“Our relationship with Bradford White was established about 15 years ago. Within the past five or six years, I’ve seen many branches switch to Bradford White, mainly because of the service and product quality,” said Geyer.

On one air base job, Kimbel looked at the plans calling for atmospherically vented water heaters and went back to the GC to explain why direct vent heaters would be much better. Instead of the many “envelope” perforations required, the direct vent approach required only one wall penetration.

“The guys at Kimbel Mechanical Systems are always trying to better understand the plans and improve upon them,” said Tim Watkins, Bradford White’s sales rep at Wiggs, Haun + Bohan, in Nashville. “They don’t have any problem going back to the GC to talk about improvements.”

On the jobsite, or in Guatemala, managers at Kimbel share that vision: they’re making it a better place for everyone. ■



Plumber Derrick McGough installs a water heater.

# Get even.

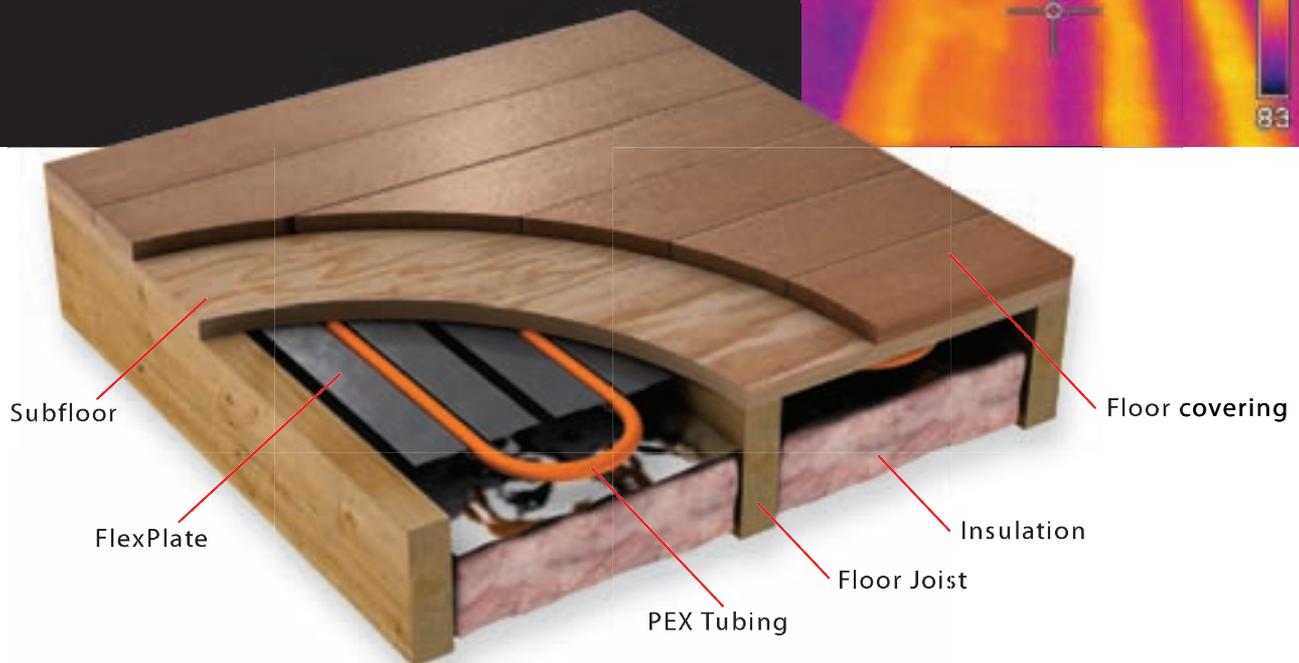
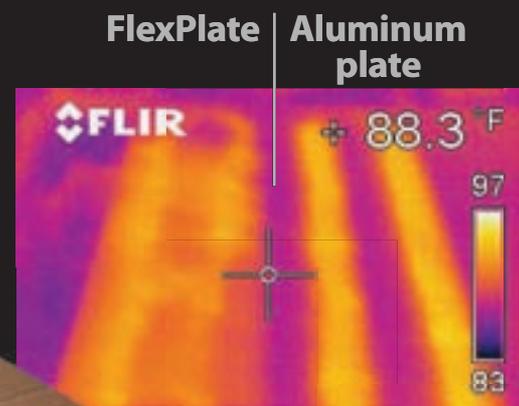
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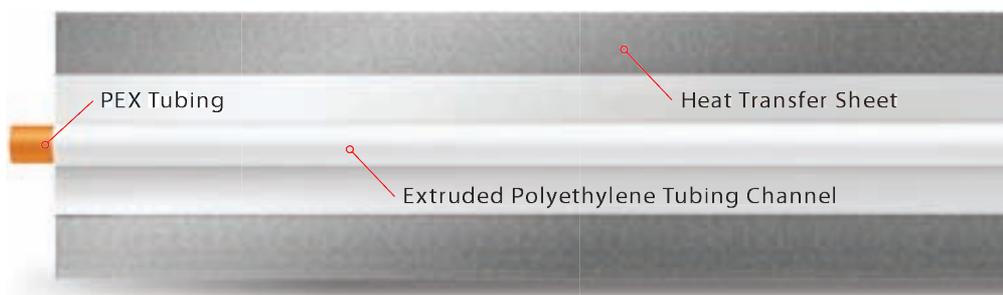
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Circle 38 on Reader Reply Card

# Catholic school gift of mini-split systems is heaven-sent



Looking at completed installations at the Marion Center are (from left to right) Tropic Supply's Charley Del Vecchio (CEO), Chuck Del Vecchio (president); Bob Garrison, president of Garrison Mechanical, and Alex Rodriguez, marketing manager of Tropic Supply.

In 1963, following a personal invitation by Coleman Carroll, the Catholic Archbishop of Miami, 11 Sisters of St. Joseph Benedict Cottolengo — a congregation renowned in Italy for its work among people with developmental disabilities — traveled that winter from Italy to Miami. There, the Sisters immediately saw what the Bishop had gone to Italy to describe: a great need among the children of Miami.

Within a few months, the Sisters were among many others organized by the Bishop, fulfilling his vision for the Archdiocese of Miami to begin a school for students with developmental disabilities.

Work quickly began on 50 acres of “rundown property” in northwest Miami, but the Archdiocese prevailed, opening the Marian Center ([www.mariancenterschool.org](http://www.mariancenterschool.org)) to students in the fall of '64. For the Sisters, it would be the first mission of

Center's 10,000-sq.-ft., single-story school building. The central system that was installed when the building was erected was 40+ years old and, for several years, had a bad habit of conking out when Florida was at its worst.

“We were impaired, and we knew that the old system was on its last leg,” continued Horan. “The conditions were tough on the students and staff and, sadly, we didn't have an emergency fund for anything of this magnitude financially.”

The answer to prayers came through a tie to one of the school's students. Charles Del Vecchio, owner and CEO of Tropic Supply in Miami, a wholesaler of HVAC and mechanical systems, and his son Chuck, president of the firm, were inspired to help through a close and personal look at the school's plight. Chuck's son Chris has been a student at the school for several years.

**“We thank God for the contributions of those amazingly devoted women and are still inspired by their work. Every day is a learning opportunity for us, and for our students.”**

**— Thomas Horan, executive director of the Center.**

its kind beyond European borders. Today, this school is referred to by some as “the hidden jewel of South Florida.”

Today the Marian Center provides educational, residential, clinical, vocational, and recreational services to over 150 students and adults ranging in age from birth through middle adulthood. Its seven buildings are set like gemstones within a lush landscape, palm trees swaying in the wind. Every awe-inspiring detail, and now a legacy of grace and care among the people of Miami, stems from the inspiration of 11 Sisters from Italy whose faith and inspiration were stirred in Miami nearly 50 years ago.

“We thank God for the contributions of those amazingly devoted women and are still inspired by their work. Every day is a learning opportunity for us, and for our students,” said Thomas Horan, executive director of the Center.

Though, according to Horan, one key obstacle frustrated their efforts — the lack of air conditioning at the

Through the years, Tropic Supply had covered the cost of repairing the old chiller system.

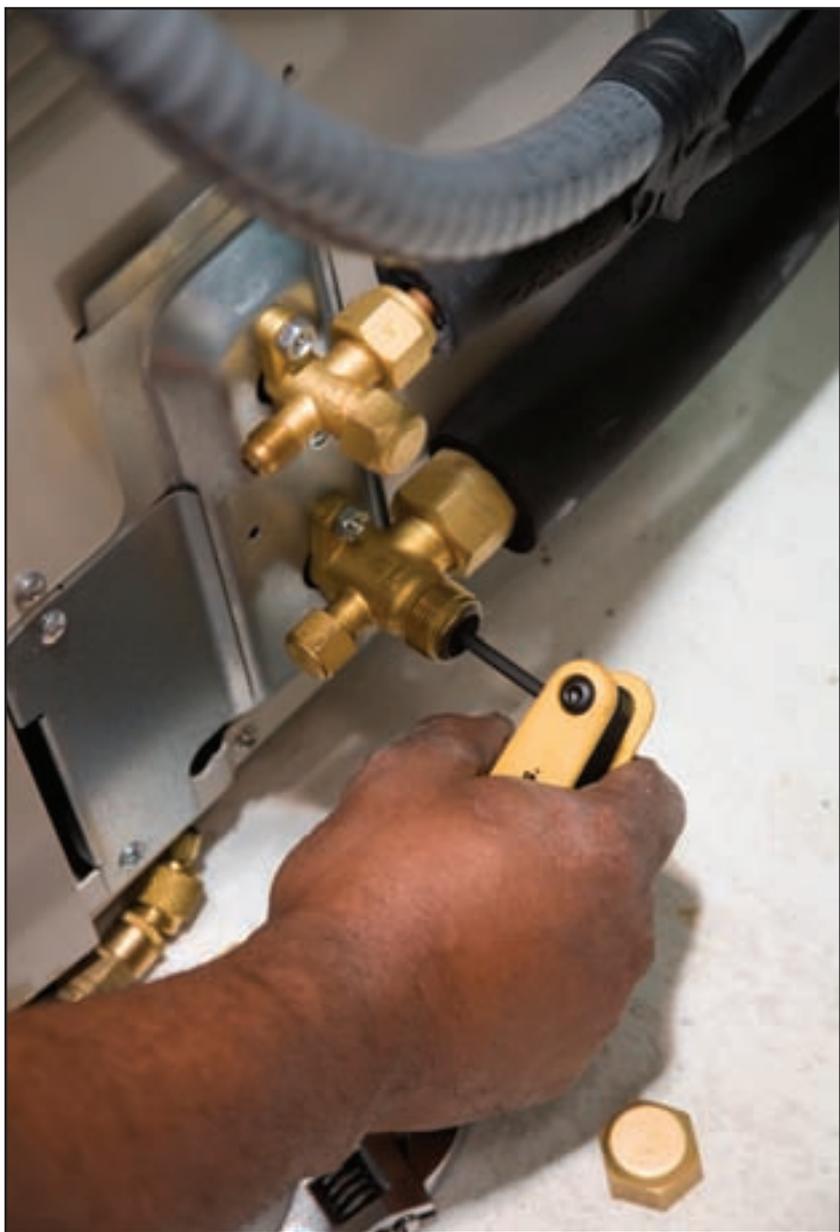
But — just as the students and staff had experienced — the building's existing system, based on a 40-ton, R-22 reciprocating chiller, cooling tower and dozens of fan-coil units, deteriorated further each year. The key dilemma was the discovery that the chilled water piping, buried under the school, had ruptured.

“Besides, the Sisters and the students were having an awful time competing with the noise of the fan coil units,” said Sister Lidia Valli, school principal.

“We couldn't decide what was worse, the hissing, whining, gurgling noises from the old room units, or the heat and humidity we and the students had to endure,” said Sister Carla Balentini, facility manager.

Charles Del Vecchio called Tom Horan to say that they would cover the cost of new equipment for the school. “Needless to say, we were delighted,” said Horan.

(Turn to Solutions ... page 60.)



A technician opens the service valve to charge the system.

## 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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# Best solution = greater efficiency

*(Continued from page 58.)*

Considering the many problems with the old system, the Del Vecchio family and school administrators decided that the best solution would be to abandon the ruptured lines and to remove the chiller, cooling tower and fan coil units.

“We were drawn to the energy efficiency of new, smaller R-410A systems,” said Bob Garrison, president of Miami-based Garrison Mechanical,

the firm chosen to replace the ailing equipment. “A big advantage to the installation of multiple, smaller systems would be the ability to easily select which areas of the school to cool.”

When it was apparent that the use of many smaller units would offer far greater efficiency, they settled on a plan to install 23 separate Fujitsu mini-split heat pumps. The Del Vecchio family, with the help of engineers at Formica & Associates, drew

up plans for installation of ductless split systems that they would donate to the Center.

According to Garrison, the school building is a single-story rectangle with a central hall and six large classrooms, all of which also have a smaller observation room behind a two-way mirror. There are also several bathrooms, a library and administrative offices. According to Chuck Del Vecchio, key jobsite challenges were the many sliding glass walls and the school’s poured concrete roof. “There’s no attic space up there to run refrigerant lines, to conceal ducts or to hide air handlers. It was an open-and-shut case for mini-splits.”

Garrison Mechanical work crews began the job with initial preparations. “Once the grounds were cleared, we framed-out and poured concrete slabs for all of the condensing units,” explained Garrison. “Then we removed and scrapped all of the old equipment.”

The last facet of the job – installation of new equipment – began in the summer of ’09. According to Garrison, the job moved briskly in phases with two, two-man crews.

“We began at one end of the building and completely installed and wired each new system, placing them on-line and ready for service,” said Garrison. “This took less than a month, start to finish.”

During that time, Garrison’s crew enacted an earlier plan to make the indoor units fit into spaces where the old equipment had been. Wood enclosures, stained to match other furnishings, were installed to conceal and offer easy access to fresh air filtration, a Miami code requirement. The evaporator units were then attached to the outer face of these enclosures for an aesthetic touch greatly appreciated by the school.

According to Garrison, the facility received a total of 39½ tons of heat pump comfort control with air filtration and humidity control, and with a jump from 7 or 8 SEER to 16 to 18-SEER. The school now enjoys a huge improvement to operational efficiency.

“The difference is amazing,” concluded Horan. “We had become so conditioned to the noise of the old units, and their inability to keep us comfortable. Now, just entering the rooms, experiencing the comfort and not hearing all that rattle . . . it’s a Thank God moment every day.” ■



*Eugene Roman, Garrison Mechanical technician, and Carlos Roman, tech, complete a Fujitsu air handler installation.*



*Garfield Thompson, Garrison Mech. technician, completes electrical connections to a condensing unit.*

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Circle 40 on Reader Reply Card

# Lead-free leaders



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## Uponor to offer lead-free brass fire sprinkler adapter for multi-purpose systems

APPLE VALLEY, MINN. — Easier to install and more cost-effective compared with traditional stainless-steel fire sprinkler adapters, the ProPEX® Lead-free Brass Fire Sprinkler Adapter from Uponor is an industry-first. Made of lead-free brass to effectively meet state lead-level legislation and conform to NSF Annex G for lead-free plumbing requirements, the new adapter provides easier installation on a variety

of mounting surfaces.

“The new ProPEX Lead-free Brass Fire Sprinkler Adapter offers installers flexible pre-assembly and mounting options with no blocking required,” said Jayson Drake, senior product manager, plumbing and fire safety, at Uponor.

Available in ¾" and 1" tees, each assembly requires a mounting bracket and a push-on locking nut (sold separately). The adapter also

features Uponor’s proven, cold-expansion ProPEX fitting system for strong, durable and reliable connections without the need for torches, glues, solvents or gauges.



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panion flanges and installation flanges)  
The new line of lead-free products reinforces ITT’s ongoing commitment to green, energy-efficient solutions. For more info, visit [www.bellgossett.com](http://www.bellgossett.com).

## New lead-free bulletin available from B&G

MORTON GROVE, ILL. — A new bulletin (A-151) describing the full line of Bell Gossett lead-free potable water products is now available at [www.bellgossett.com](http://www.bellgossett.com). Ranging from pumps and boosters to tanks and valves, the potable water products are offered in lead-free brass materials and meet the requirements of California’s AB1953 and Vermont’s

S152 legislation, as well as exceed the current requirements in the other 48 states.

The new bulletin (A-151) explains how Bell Gossett’s expanding line of potable water products provides efficient, safe, and responsible lead-free operation. Products described in the brochure include:

- Commercial Pumps — (Series 60 AB, Series 90 AB, Series 1522)

## NSF International certifies first European brass manufacturers to new low lead requirements

ANN ARBOR, MICH. — NSF International, a global public health and safety organization, announced the following three Italian-based companies, K.M.E Brass S.R.L., S.A. Eredi Gnutti Metalli S.P.A., and Trafilerie Carlo Gnutti S.P.A., the first European brass manufacturers certified to NSF’s low lead content requirements for plumbing products (NSF/ANSI Standard 61, Annex G). The standard outlines the testing requirements for any product that comes into contact with drinking water to ensure the product does not contribute excessive levels of contaminants, including lead, to drinking water.

NSF/ANSI Standard 61, Annex G – Weighted Average Lead Content Evaluation Procedure to a 0.25 Percent Lead Requirement – was developed to help protect the public from exposure to lead by mandating a maximum weighted average lead content of ≤ 0.25 percent in products that come into contact with drinking water. The requirements

for Annex G also include compliance with NSF/ANSI Standard 61, the American National Standard for drinking water products.

These lead requirements apply to manufacturers of faucets, valves, pipes, water fittings, and any product that comes in contact with drinking water. Products made from an NSF-certified brass alloy require separate testing and certification to NSF 61, Annex G to ensure contamination does not occur during processing.

“NSF International developed NSF/ANSI 61, Annex G through a consensus-based process that included input from industry, regulators and other experts. Annex G provides a means of evaluating and certifying low lead products to ensure they also comply with the National Standard,” said Bob Ferguson, vice president of NSF International’s Water Programs. “By achieving Annex G certification, these manufacturers can provide assurance to regulators, consumers, and plumbing product manufactur-

ers that these brass products have been tested and comply with the low lead requirements in various U.S. states.”

The three Italian companies that have achieved this certification, K.M.E Brass S.R.L., S.A. Eredi Gnutti

## Good news, bad news for small town’s water

FROM [WWW.WEARELEADFREE.NET](http://WWW.WEARELEADFREE.NET) — When presented with a choice, most people opt for the bad news first, so here it is. Lead is still present in the water of 10 homes (60 were sampled) in Galesburg, Illinois, a small town located 200 miles southwest of Chicago. So perhaps you’re asking, “What could possibly be the good news knowing lead is still working its way into the local water supply”? I guess this is the optimists’ “glass is half full” (of lead) perspective.

Consider that back in 1992 when lead was first discovered, the amount measured in the water supply was 45 parts per billion (ppb), more than three times the allowable limit by the EPA. The most recent report released

Metalli S.P.A., and Trafilerie Carlo Gnutti S.P.A., are entitled to bear the NSF Annex G Certification Mark. All three companies are also listed on the NSF website to demonstrate compliance with the new requirements.

For more information on NSF/ANSI Standard 61/Annex G requirements or NSF testing and certification services, visit [www.nsf.org](http://www.nsf.org)

by the City of Galesburg’s Water Division revealed the lead content has been reduced to 16 ppb, just 1 ppb over the EPA’s allowable amount. That’s nearly a 2/3 reduction. Consistent readings have been hard to come by, but recent results indicate the trend is clearly in the right direction.

A new treatment plant is being brought online this month in hopes of further improving future readings. As reported earlier, the city continues to provide helpful tips to reducing personnel lead exposure in drinking and cooking water. For a small town known for having one of the largest railroad yards in the country, Galesburg appears to be back on the right track.

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Circle 41 on Reader Reply Card

# Cost study proves advantage of stand-alone over multipurpose fire sprinkler systems

## Engineering company designs residential fire sprinkler system three ways to identify cost and performance advantages

BY ERIC PRICE

The home building industry continues to be divided when it comes to identifying the preferred residential fire sprinkler system design — stand-alone vs. multipurpose. Although most professionals agree that two independent systems offer superior integrity, proponents of multipurpose systems have long claimed a cost advantage in integrating the plumbing and fire sprinkler systems.

In theory, a multipurpose system appears to be the more economical choice under the premise that it requires less material and can be installed by a single contractor. However, a recent side-by-side comparative cost study has contradicted this premise.

A two-story, single-family, 2,200-square-foot (4,400 sq. ft. including finished basement) home in Madison, Wisconsin, was chosen as the test site. Blueprints were created to design the home's fire sprinkler system three different ways: a BlazeMaster® CPVC stand-alone system; a combination BlazeMaster/FlowGuard Gold® CPVC multipurpose system; and a full PEX multipurpose system using a tee and branch fire sprinkler design. Three local contractors were asked to bid on the various designs in order to provide prevailing market rates and ensure the most competitive bid.

In computing the total installed cost for the three options, it was confirmed that the BlazeMaster CPVC stand-alone system was the most cost-effective option. Although the cost differential of the BlazeMaster CPVC stand-alone system over the multipurpose alternatives was nominal, it does put to rest the perception that multipurpose systems offer a significant cost advantage. The actual cost comparisons are as follows:

(Pricing includes hot and cold water plumbing material and labor)

- BlazeMaster CPVC stand-alone



A BlazeMaster CPVC stand-alone fire sprinkler system installation.

system \$14,109;

- BlazeMaster/FlowGuard Gold® CPVC multipurpose system \$14,506;
- PEX multipurpose system (tee and branch design on the plumbing system) \$14,857; and
- PEX multipurpose system (manifold design on the plumbing system) \$15,170.

Looking at the fire sprinkler side of the system only, the following comparisons were made:

**BlazeMaster CPVC stand-alone system:** 480 ft of 1" BlazeMaster pipe with 43 heads; 70 hours of labor; Total installed cost of \$7,210 (\$1.66 per square foot).

**BlazeMaster/FlowGuard Gold CPVC multipurpose system:** 480 ft of 1" BlazeMaster pipe with 43 heads; 82 hours of labor; Total installed cost of \$8,282 (\$1.91 per square foot).

**PEX-looped multipurpose system:** 800 ft of PEX tubing and fittings with 43 heads plus the added cost of a pump required to deliver enough water pressure through the PEX system (this was more cost effective than up-sizing the pipe and fittings. If the pump was not used, more fire sprinkler heads would have been necessary because of the smaller CTS (copper tube size) pipe); 77 hours of

labor; Total installed cost of \$10,017 (\$2.31 per square foot).

To understand how and why the CPVC stand-alone system fared so well economically, it's important to consider the expense of the additional tees and transition fittings needed to create the multipurpose systems. These items not only add to the total material costs but also, to a lesser extent, to the labor costs.

It's also important to note the impact of the colder climate at the Wisconsin test site. Had the project been located in a warmer climate where slab homes are more common, the cost savings of the CPVC stand-alone system over the multipurpose options would likely have been more dramatic. Since the Madison home has a basement, the fire sprinkler lines were run in the same area of the home as the cold water plumbing lines. Had there been no basement, the fire sprinkler pipes would have been run through the attic. This would have required additional feet of piping to connect with the plumbing pipe below the walls.

### Other considerations

Although some building professionals may be surprised to see the cost results, those who have intimate knowledge of the mechanical properties of CPVC and PEX should readily understand why the BlazeMaster CPVC systems fared so well. If the two piping systems could be designed the same, the final costs might look different. The reality, however, is that PEX and CPVC systems do not lay out the same because PEX pipe has to be looped. In some homes, this practice of going up and looping back down may require twice as much PEX pipe to be used compared with a comparable CPVC design.

In addition, the internal diameter of a PEX pipe is significantly smaller than a similarly sized CPVC pipe. In fact, the internal diameter of a 1" PEX pipe is actually less than the internal diameter of a ¾" CPVC sprinkler pipe. That's because CPVC sprinkler pipe is manufactured to IPS (iron pipe size) SDR 13.5 dimensions to allow for increased water flow. PEX pipe, on the other hand, is manufactured to CTS SDR 9 dimensions. As a result, more piping loops are typically required to deliver the same amount of water through a PEX system. Or, as in the case of the Madison test site, a pump was necessary to meet minimum flow requirements.

It's also important to note that the (Turn to Safety ... page 66.)

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*"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"*

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*"American Made"*

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

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

Circle 42 on Reader Reply Card

## The importance of safety

(Continued from page 64.)

cost savings sometimes claimed by proponents of PEX piping results from the pipe's flexibility, which translates into a faster, easier and, thus, more economical installation. This is true for PEX pipe in 1/2" diameter. However, 1/2" PEX pipe is not used in

multipurpose systems for the reason just mentioned—its smaller internal diameter. Generally, 3/4" PEX pipe is the absolute minimum size that can be used. But in many cases, 3/4" PEX doesn't work hydraulically, so 1" PEX pipe is needed to deliver sufficient water pressure. The

reality is that, at 1" diameter, PEX pipe loses much of its flexibility and becomes more difficult to install, thus losing any labor cost savings it might have offered. PEX pipe in diameters greater than 1" is extremely rigid, bulky and comparatively expensive to purchase.

No backflow preventer was included because, contrary to popular

belief, less than 20% of systems require them. If a backflow preventer was included, it would have added less than \$100. Another even less expensive option would have been to hook a nearby line to a toilet. This arrangement is known as a passive purge system.

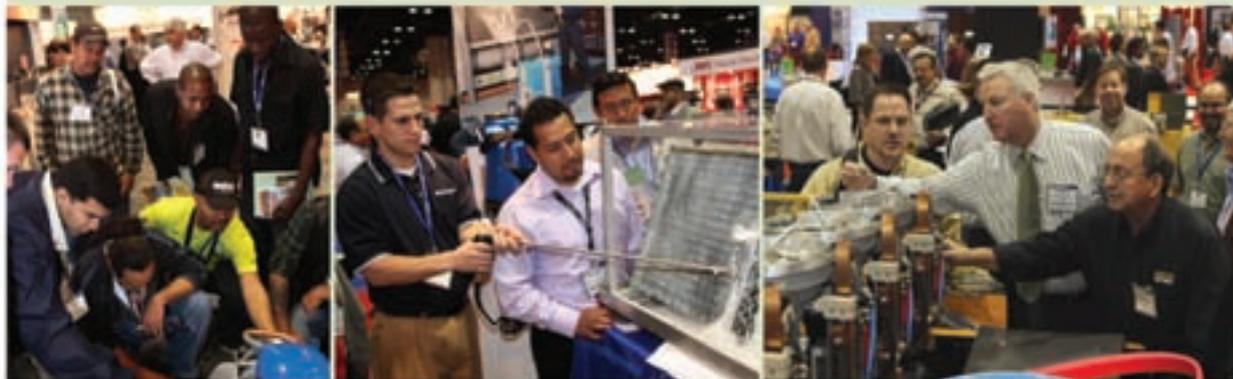
With something as important as a life safety system, cost is not the only criteria when identifying the best piping material or system design. A safe, reliable performance is everyone's priority. That's why some jurisdictions don't allow any type of multipurpose system. California, for example, a state that has required fire sprinkler systems in homes in various cities for many years, continues to favor stand-alone systems in its code. A major reason is the difficulty in hooking up an alarm bell with a multipurpose system since it's difficult to detect the difference between water flowing to help extinguish a fire versus a toilet flushing. In addition, any repairs or additions made to the plumbing line require the fire sprinkler system to be shut down in a multipurpose system. This presents a potentially risky situation.

Also relevant with regard to safety performance are the flame and smoke properties of the piping materials used in the various systems. CPVC, the only non-metallic piping material approved for both stand-alone and multipurpose systems, will not sustain burning. PEX, on the other hand, which is only approved for use in multipurpose systems, will continue to burn long after the flame has been removed.

That is not to say that a multipurpose system does not have its advantages. The purpose of this article was to prove that cost savings is not one of those advantages. ■

*Eric Price, a 30+-year veteran of the fire sprinkler industry, is president of Engineered Fire Systems, Inc.—the company responsible for designing the various fire sprinkler systems at the Madison test site. Before starting his Grass Valley, California-based fire protection design company in 1984, he spent a number of years working directly with area fire departments and fire marshals to teach them about the mechanics of residential and commercial fire sprinkler systems. Today, Engineered Fire Systems serves clients across the globe, providing engineering, consulting and plan review services to developers, general contractors, building owners, and fire departments.*

## TEST DRIVE *What's* NEW!



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Circle 43 on Reader Reply Card

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### GU195M hybrid water heater

The GU195M encompasses the impressive 98+ percent efficiency while allowing multiple water heating units to be linked and common vented, with a maximum of eight units per group. Ideal for heavy commercial use that needs redundancy, the GU195M controls enable a single unit to automatically shut down in case of a failure while the others continue to operate with no cold water bleed through. **Grand Hall.**

Circle 101 on Reader Reply Card

### Under floor heating plate

The primary material in the Flex-Plate is a specially processed natural graphite giving FlexPlate unique heat conduction properties. An increase in performance maximizes



the thermal efficiency of any under floor radiant system through the use of lower input water temperatures. In some cases it will permit the use of lower temperature sources such as modulating-condensing boilers, ground-source heat pumps and solar thermal. FlexPlate is lightweight and features a simple staple-up installation. **Watts Radiant.**

Circle 102 on Reader Reply Card

### Trench drains

The Smith/ACO Polymer Concrete and Fiberglass trench drain series



and the Enviro-Flo® Polypropylene trench drain series can be utilized to improve drainage flow covering a variety of commercial applications. An assortment of grates and covers are available. **Jay R. Smith Mfg. Co.**

Circle 103 on Reader Reply Card

## ★ Phc News product of the month ★



### Hot-Link system

Used for hot water recirculation, system is ideally suited as a retrofit solution for homes without a dedicated return line. The Hot-Link system includes a composite bypass valve and a stainless steel circulator with a timer and line cord. The one-pump, one-valve combo is easily installed and does away with the need to run a dedicated return line back to the water heater. The Hot Link technology eliminates the wait for hot water, and the wasting of thousands of gallons of water down the drain while waiting for hot water to arrive. The system provides greater convenience and comfort, delivering hot water in an instant. Hot-Link conserves water, energy and cash. **Taco.**

Circle 100 on Reader Reply Card

### Leak detection system

PipeBurst Pro™ is a patented, automated water leak detection system that supplies 24/7 protection against clean water domestic leaks and flooding. Proudly made in



America and assembled by our highly trained local workforce using ISO 9001:2008 quality standards, our customers choose the PipeBurst Pro for supreme quality, reliability and performance for total home or commercial water detection and suppression. The PipeBurst Pro system features high speed wireless connectivity in our FloTrax™ control panel, VIP™ (Valve Interface Panel) and Flood-Bug™/SideKick™ water sensors. **GFD SecureSolutions, a division of GreenField Direct.**

Circle 104 on Reader Reply Card

### Structural sway brace attachment

Universal Sway Brace Attachment permits a secure, non-friction connection without drilling or welding to structural members. The Fig. 828's unique patented design allows for attachment of seismic bracing to wide flange beams, including I-beam, open web, welded steel trusses and



other structures up to 7/8-inch thick, with a maximum design load of 2,015 lbs. both along and across the beam. The one size, stable three-point attachment fits any beam width. Engineered break-off bolts allow for visual verification of proper installation torque. **TOLCO.**

Circle 105 on Reader Reply Card

## HYDRO-CORE



### Forged brass manifold

A revolution in boiler installation and piping — Hydro-Core™ is a patent pending, fully fabricated forged brass manifold that combines precision crafted closely spaced tees with Webstone's Isolator® w/Rotating Flange & Drain™. Designed specifically for hydraulic separation, pump isolation, and purging the near boiler piping or secondary circuit loops. **Webstone.**

Circle 106 on Reader Reply Card

### TempTAP™ thermostatic faucets

Commercial and institutional ASSE 1070 listed TempTAP™ thermostatic faucets feature a powerful paraffin actuator, which controls both temperature and pressure. With TempTAP™ specifying lavatory tempering is easy because there is no need for a separate thermostatic valve under the sink. The tempering is done inside the faucet just inches from the user where it is most effective. **Powers, a Watts Water Technologies Co.**

Circle 107 on Reader Reply Card

### Hand dryers

Aerix Series Hand Dryers dry hands in 10 to 15 seconds using a maxi-



mum 1,150 watts of power. Fan speed and run time can be adjusted to reduce noise and energy usage. **Bradley Corp.**

Circle 108 on Reader Reply Card

## LittleGIANT®

When you purchase a Little Giant GP Series grinder pump from Franklin Electric, you're getting an industry-proven product, trusted by professionals. With a unique patented cutter assembly, the GP Series shreds materials efficiently and effectively with more than 400,000 cuts per minute and easily achieves high-head applications with maximum heads greater than 130 feet. Little Giant brand pumps from Franklin Electric will always be there, providing superior performance in the field.



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Circle 45 on Reader Reply Card



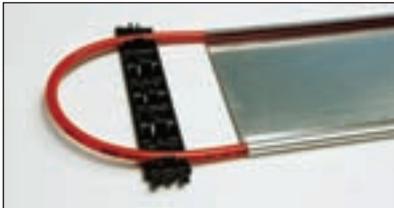
### Push-in fittings, valves, tubing

This standard line of push-in fittings, valves and tubing for water treatment/filtration comply with NSF/ANSI International Standard 61 Annex G for products that come into contact with drinking water. Produced in FDA approved materials for food quality applications. Wetted surfaces comply with FDA requirements for direct contact with food and are listed with NSF International Standards 51 and 61/ANSI Annex G for drinking water. **John Guest USA.**

Circle 110 on Reader Reply Card

### Joist space radiant system

RAUPLATE joist space radiant heating system facilitates more rapid and efficient installations without disrupting an existing floor. Double-channel



heat transfer plates affix to the underside of the subfloor, eliminating the need to change or add height to the existing floor above. With 1 pipe channel on each edge, the pre-drilled heat transfer plate design easily and securely clips in two runs of 1/2" RAUPEX O<sub>2</sub> Barrier pipe. Aluminum plate offers excellent conductive properties and even radiant heat output to the floor above. **REHAU.**

Circle 111 on Reader Reply Card

### Water management software

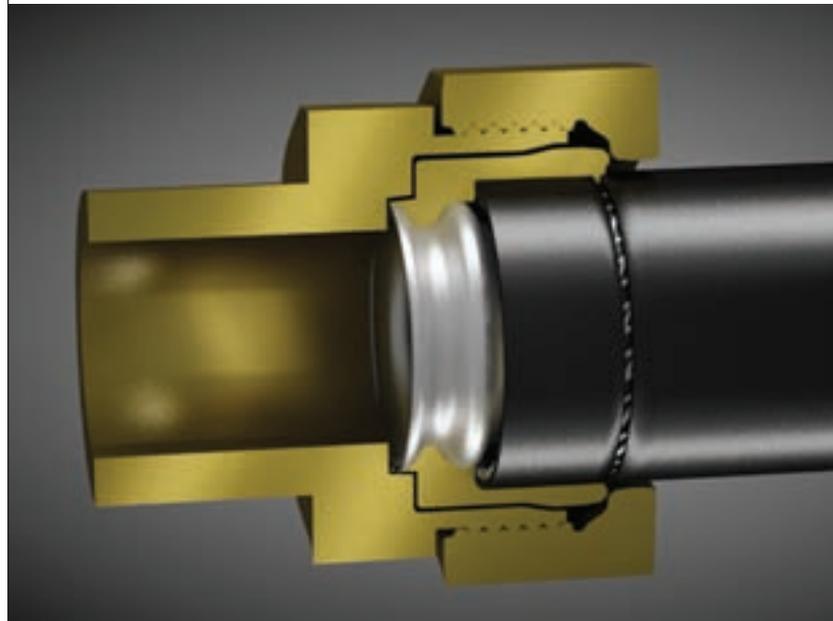
Updated software interface for Master-Trol Electronic Water Management Software controls valve usage



and limits use of plumbing fixtures. The updated software features greater ease-of-use, providing real-time information about toilet, faucet, and shower activity and detailed reports on water consumption. **Acorn Engineering Company.**

Circle 112 on Reader Reply Card

## ★ Phc News product of the month ★



### FlashShield™ CSST tubing

FlashShield™ provides more layers of resistance than any other CSST product currently in the marketplace. FlashShield CSST also eliminates the need for additional manufacturer-required bonding and offers the highest level of lightning protection available in flexible gas piping systems. As a result, the two layers of semi-conductive polymer jackets and the metal mesh help make FlashShield more resistant to the damaging effects of electrical energy than standard CSST. The new fitting is designed with tooth-like indentations that directly touch metal to dissipate arcing and ensure better continuity between the fitting and the metal mesh. **Gastite.**

Circle 109 on Reader Reply Card



### Electronic faucet works in two modes

Available for deck-mount applications, ChekPoint® EC-3106 electronic faucet offers the ability to switch from sensor to manual operation. It converts by simply rotating the top cap of the faucet until it locks into the desired mode. In sensor mode, it can help qualify towards points for LEED certification. Easy to install, is AC/DC capable, features adjustable temperature control, and comes with a 1-year warranty. **T&S Brass.**

Circle 113 on Reader Reply Card

### Hydronic controls

Optima Series line of eight hydronic controls is engineered to work with this company's Prestige boilers for total hydronic system control. Four new boiler controls integrate the boiler seamlessly with other heat sources such as solar or geothermal



systems. Four new valve and pump controls precisely distribute of heat throughout the system. Zone control panel controls up to 5 pumps or valves and can be connected to a second panel for up to 10 pumps or valves. **Triangle Tube.**

Circle 114 on Reader Reply Card



### SMART SYSTEM user interface

Equipped with several new advanced features, the re-engineered SMART SYSTEM is now standard on all KNIGHT® residential heating boiler models, as well as the KNIGHT® XL Commercial Boiler and the ARMOR® Commercial Water Heater. **Lochinvar.**

Circle 115 on Reader Reply Card

### HYDROBOOST bottle filling station

Not only is HYDROBOOST both economical and environmentally friendly, this new bottle filling station is also efficient. With a fill rate of 1.1 – 1.5 gpm, HYDROBOOST dispenses water three times faster than a standard drinking fountain, allowing end-users to quickly quench their thirst. A built-in electronic sensor activates the flow of water when the user places a container in the station's dispensing area, providing hands-free, sanitary operation. To safeguard against the potential for wasted water, the sensor is equipped with a timer that automatically stops the flow of water after 30 seconds. **Halsey Taylor.**

Circle 116 on Reader Reply Card

### Water heater stands

Sioux Chief now has standard floor models for 30 thru 100-gallon capacity water heaters in stock. These stands are made domestically and



meet the requirements of the National Gas Fuel Code, positioning the burner-ignition device 18" above the floor. **Sioux Chief.**

Circle 117 on Reader Reply Card

# navien

## Condensing 98%



Tankless Gas Water Heaters

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Save 30% of the cost,  
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- Extended lifecycle utilizing dual stainless steel heat exchangers
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Circle 46 on Reader Reply Card

### Heat pump water heaters



Hybrid heat pump water heaters with a new 40-gallon model designed for smaller households with a lower hot-water demand. The new HP-40 hybrid meets ENERGY STAR® requirements. The new HP-40 hybrid offers an Energy Factor (EF) of 2.0, or more than twice the energy efficiency of a standard electric storage water heater.

Rheem.

Circle 119 on Reader Reply Card

### Condensing tankless

T-H2-DV and T-H2-OS the 2nd generation condensing tankless model, capable of venting with 3" or 4" schedule 40 PVC. Concentric termination is made of PVC for 0" clearance to combustible and one-wall



penetration for a clean install. The T-H2-DV and T-H2-OS also feature Takagi's Easy link system allowing for installation of up to 4 units with the use of a controller box. The T-H2-DV and T-H2-OS offer 9 GPM Max of endless hot water and can provide up to 36 GPM max when using the Easy link system. Takagi.

Circle 120 on Reader Reply Card

### Tankless water heater

From Noritz's smallest unit to the market's most energy efficient, the NRC111 condensing unit, home-



owners will be able to enjoy endless hot water while being energy efficient. Noritz's flagship model, the NRC111 condensing unit, boasts an astounding .94 energy factor. Noritz America Corp.

Circle 121 on Reader Reply Card

## ★ Phc News product of the month ★



### High-efficiency gas water heaters, ideal for replacement applications

A.O. Smith's family of products includes the EFFEX™ high efficiency gas water heater, which is the most efficient and advanced conventional vent product on the market. The patented air intake system turbo charges the combustion process to produce the highest efficiency possible for a standard atmospheric product. The EFFEX installs with the same gas, water and venting connects as a standard model, but it operates well above the standard efficiency with an Energy Factor of .70, making the EFFEX ENERGY STAR qualified. A.O. Smith.

Circle 118 on Reader Reply Card



### High efficiency boilers

The gas-fired, high efficiency Peerless® Combi 160 is ENERGY STAR® rated and eligible for a federal tax credit. The 93% efficient Peerless® Combi 160 condensing boiler uses pre-mixed burner technology for optimal combustion. The boiler offers hydronic heat and domestic hot water in one complete unit by using an integrated coil-type hot water tank. The built-in tankless heater is capable of producing up to 4 gallons of domestic hot water per minute for ample, low-cost domestic hot water without the expense of a separate water heater. Peerless Boilers.

Circle 122 on Reader Reply Card

### On-demand domestic hot water

The ODW is available in four capacities from 99,000 Btuh to 199,000 Btuh, for performance and efficiency plus the comfort of on-demand domestic hot water. Users will never run out of hot water again. Benefits include ENERGY STAR



rated, energy and space saving because all the units are wall hung. With revolutionary S line heat exchangers, units can reach efficiency levels of more than 92%, which for tax rebates. Because the unit is condensing, it can be vented with schedule 40 PVC. QuietSide.

Circle 123 on Reader Reply Card

### Geothermal comfort system

Synergy3D Series energy-efficient geothermal comfort system provides forced air heating and cooling, hydronic heating for radiant floors and a hot water assist option. Also achieves high efficiencies by utilizing two-step Copeland Scroll UltraTech™ compressors



and variable-speed fan blowers that consume less energy and provide improved comfort. The compressors are mounted on double-isolation plates made of acoustic metal and are wrapped in a compressor blanket to provide whisper-quiet operation. System is ENERGY STAR rated. WaterFurnace Intl., Inc.

Circle 124 on Reader Reply Card

### Residential gas water heater

The D4 series of flue dampered residential gas models meet the 2010 ENERGY STAR requirements of .67 Energy Factor. Company's innovative line of water heaters offer ENERGY STAR® qualified models for every type of application: atmospheric vent, ultra low NOx, power vent, power direct vent, tankless and combination heating. Bradford White.



Circle 125 on Reader Reply Card

### EUTECTIC Series

The specially designed three-pass heat exchanger maximizes heat transfer and delivers 87% AFUE. Plenty



of room for thermal expansion of the flue gases to keep burner and flame noise to a minimum. Slant/Fin.

Circle 126 on Reader Reply Card



### Track loader

The T870 is the largest compact track loader in its lineup. The new loaders are packed with power and performance along with industry-leading lifting heights. The machines provide operators with more powerful hydraulics, increased fuel capacity, higher lift capacities and reach, increased pushing power and higher horsepower than any of current loader models. **Bobcat Co.**

Circle 128 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. Does not harden; allows pre-fab application weeks before system assembly; disassembly years after assembly. Grit-free, lead-free, non-toxic, adheres to oily threads and provides for easy clean up. **Clean-Fit Products, a division of The Mill-Rose Company.**

Circle 129 on Reader Reply Card

### Combo roll groovers

Combo roll groovers feature a new model RGCMB0812 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 to manual operation. Compact, portable, economical. Two wrenches included – one for power grooving and an angled one for manual grooving. **Reed Manufacturing Company.**

Circle 130 on Reader Reply Card

## ★ Phc News tool of the month ★



### Compact video inspection system

Two lightweight systems combine camera, reel and monitor in all-in-one package. A 5.6" LCD color monitor is protected by a padded case and mounted on a rugged flexible gooseneck that swivels to give the best viewing angle. Full size Gen-Eye POD™ features a self-leveling camera and 200 ft. of Gel-Rod® for trouble-shooting 3"-10" drain lines. MINI-POD™ carries 125 ft or 175 ft of push rod. The color mini-camera is small enough to troubleshoot 2"-4" lines. A video out connection allows recording on an external device. **General Pipe Cleaners, a division of General Wire Spring.**

Circle 127 on Reader Reply Card



### Turbo Tube fitting & tube cleaning brush

The Turbo Tube™ Brushing Tool is two brushes in one, so you can clean fittings and copper tubing without changing tools. The fitting section of the Turbo Tube brush cleans inside diameters, while the tube cleaning section cleans outside diameters. This self-cleaning tool is made with stainless steel bristles to prevent rust, and has a heavy-duty ABS housing that is impact-resistant and protects the bristles so they retain their shape. The Turbo Tube mounts easily with a 1/4" hex shank on cordless and electric drills. **Weiler Corp.**

Circle 131 on Reader Reply Card

### Drain cleaning machines

K-45 manual and K-45AF AUTOFEED® drain cleaning machines with optimized power up to 600 RPM. The K-45 drain cleaners are



designed for 3/4- to 2 1/2-inch drain lines. Cable is offered in three sizes of 1/4, 5/16, 3/8 inches, each in varying of lengths of up to 50'. The K-45AF drain cleaner features advanced two-way AUTOFEED letting the operator clean drains better and faster, quickly working back and forth through drain blockages to completely clear lines. The K-45 and K-45AF machines have variable speed operation from 0 to 600 RPM to give the operator complete control in all situations. The inner drum prevents leakage to reduce on-site cleaning and clean-up times. **RIDGID.**

Circle 132 on Reader Reply Card

### New M12TM cordless fork meter

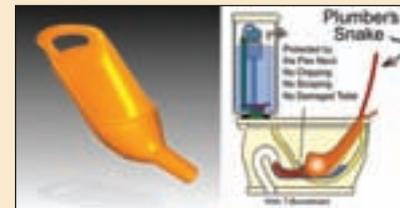
Company expands its LITHIUM-ION system with the new M12TM cordless fork meter. Providing current measurement, voltage measurement, voltage detection and task lighting, the 2207-21 is a four-in-one True-RMS electrical tester for professional residential, commercial and industrial applications. Tool offers Lo-Z measurement to eliminate ghost voltage, a large white on black display for clearer readings, a slide rail system to add proprietary accessories and rugged over-molding for increased durability and grip. **Milwaukee Electric Tool Corp.**

Circle 133 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. **T-BowlShield.**

Circle 134 on Reader Reply Card

### HVAC zip screws

Engineered to fasten sheet metal from 18 to 28 gauge, HVAC Zip Screws are self-piercing and are capable of being driven at angles up to 30 degrees. HyperThread technology provides a tapered point and shank



for consistent driving with almost no metal filings. Up to two layers of 18-gauge steel can be joined, and the unique head design minimizes any stress from base material displacement. **Hilti.**

Circle 135 on Reader Reply Card

## THE WALL

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

## Payback or ROI

**Q:** New buzz words, payback, roi. 5+years ago, you just replaced a boiler never heard of such a thing.

Does this term have any significance today?

Can you name 10, no five things where the buyer asked what the payback is? ROI? Well, I'm not your financial advisor, I'm just the heating contractor.

If a client asks, payback has little or no relevance when installing a heating system. Did you ask what the ROI is on your windows, granite

countertops or sound system?

— Pipe4zen

**A:** If it is important to the customer, then you ought to consider it important! I take all legitimate concerns seriously.

— Robert

**A:** As a customer, I might very much care what the payback is. The extreme case is that the cost of a new boiler would not be recovered during its lifetime in spite of its higher efficiency.

Imagine I get a mod-con boiler with

aluminum heat exchanger that is guaranteed for 15 years, and (making up the numbers here) it costs \$1,500 more than a regular boiler that is guaranteed for 30 years. That boiler better save me \$100/year in fuel cost to pay for the cost of the extra efficiency before it is worn out. And, this does not even count the time value of the \$1,500 extra I paid for it. I would either have to borrow that extra money and pay interest, or take it out of my investments and lose interest or dividends. It costs.

I do not know how many homeowners think about things like this, but I bet some do. Unless I am an environmental fanatic, I do not care about efficiency per se. I want to know what the total cost of ownership of the thing is; i.e., the cost to buy and install the beast, plus the maintenance and fuel costs throughout its lifetime.

— JD

**A:** I must becoming a curmudgeon because I don't like either payback or ROI. The focus is too narrow. Consider life-cycle cost as a truer measure of knowing where you really sit with any piece of equipment. Consider all money in, all money out, and when. It's also silly to apply financial metrics to some things. What's the ROI on that dinner I just bought? Most people do replace their heater when the old one fails and the payback is nearly instant. Their family is not freezing. Gotta ask the right questions.

— Larry

**A:** Asking ROI or payback is really another way for the homeowner or end user to not only justify newer technology but separate a contractor who might be blowing smoke to sell the latest and greatest from a contractor who truly knows what he or she is doing and why.

— eluv8

## Want To Get Your Phone Ringing Again?



*"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!!"*

**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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with Al and El

[www.GetMoreCallsNow.com](http://www.GetMoreCallsNow.com)

Circle 47 on Reader Reply Card

## Albuquerque-based mechanical contractor looks ahead despite slow industry

ALBUQUERQUE, N.M. — When the economy took a turn for the worse, the construction industry was one of the hardest hit. With a focus on the future, Miller Bonded Inc. (MBI) is building a 16,000-square-foot

contracting, which means that the executives at Miller Bonded have seen their fair share of industry ups and downs.

“New construction in this region has been very limited, but we are

contractor, directing contractors that supply everything from concrete to drywall to equipment rentals.

The construction team will also take on the job of making sure that the new structure is built to be LEED Gold certified. Utilizing their LEED AP staff, MBI is dedicated to limiting their carbon footprint with this project. “We are always pushing our company to be more green and exploring ways to make our work more sustainable; we are excited about having the opportunity to build our own LEED Gold building,” said Keith Wilson, MBI CEO.

The project is set to be completed in December 2010. The pipe fabrica-

other mechanical contractors. “New Mexico has been very good to us, we feel that right now we have the chance to do our part...keeping our employees working as well as those of other trades,” said Otteni.

MBI has produced pipe fabrication for many years, but with the focus primarily being for the use of their own projects, with the new expansion, they will be able to produce pipe more efficiently for a higher volume for projects. “We’ve been successful as a duct supplier, now we are reaching out to the pipe needs that exist,” said Wilson.

Miller Bonded is a single source contractor for the design, construction and maintenance of mechanical and plumbing systems in office buildings, schools, universities, colleges, hotels, industrial plants, casinos, retail centers, restaurants, prisons and



Miller Bonded Inc. Executives pose for the media during the pipe fabrication and warehouse groundbreaking event.

pipe fabrication shop and warehouse that will be an adjacent to their existing duct fabrication facility and offices.

The Albuquerque-based mechanical contractor was formed in 1995 through a merger of Miller Metal Company and Bonded Plumbing and Heating and has since very successfully become a staple in the New Mexico construction industry. The merger has allowed Miller Bonded to offer more than 100 years of combined experience in mechanical

confident that things will bounce back and when they do Miller Bonded is going to be prepared to move ahead full force, that is why we have decided to initiate our own construction project,” said Ken Otteni, MBI President.

MBI’s construction project will not only put MBI employees to work, but will also bring in employees from more than 30 local companies. MBI will be the mechanical and plumbing contractor on the job, Freeman’s Finest will serve as the general con-



The 16,000-square-foot pipe fabrication shop and warehouse features solar thermal, which will soak up plenty of New Mexico sunshine (see panels on left of building), and hydronic heating.

tion shop will supply pipe for MBI jobs as well as fabricating pipe for

hospitals. With a team of more than 200 employees, Miller Bonded brings over 110 years of combined experience in mechanical contracting to each and every project.

Miller Bonded is a consistent BIM leader and is dedicated to green and sustainable design and construction. Miller Bonded offers a range of services including mechanical piping and plumbing installation, duct and pipe fabrication, CAD detailing and coordination, HVAC installation and system maintenance.

In 1995, Miller Bonded was formed through a merger of Miller Metal Company and Bonded Plumbing & Heating. The company brings more than 100 years of combined experience in mechanical contracting. Miller Bonded would like to thank NCA Architects (Dave Puritz) and the City of Albuquerque (Carmine Raia) for their very diligent, cooperative and fast track effort to complete the plan documents and approve them for construction. ■

### UNM Centennial Engineering Center

A true team effort, award-winning UNM Centennial Engineering Center was designed to incorporate the multiple disciplines of engineering into one center. The mechanical system incorporated new state-of-the-art equipment as well as tying into UNM’s central plant via piping in the “tunnels”. Miller Bonded served as the lead BIM coordinator, easing the challenges of limited construction space and ensuring that UNM students and staff were always provided with a safe walkway to access existing buildings.

#### Tasks:

- Project Design/Assist
- HVAC
- Plumbing
- Pipe Fabrication
- Duct Fabrication
- BIM Coordination

#### Key Features:

- 147,445 square feet
- Four Story Structure
- Laboratory Space
- Classrooms
- Office Space



## An ICONic development arises at Bradford White Corp.

When industry giants combine forces, good things can happen. We've witnessed before how leading, non-competitive OEMs can be more than amicable passers-by in the same industry. This is the case with Honeywell's cooperative effort with both Bradford White and Laars Heating Systems Company.

At this year's AHR Expo, Bradford White announced the availability of its new ICON system, an across-product-line gas valve with an array of brainy components, offering unprecedented safety for end-users, and a wide array of installation and service advantages for installers. The end result of their synergy gives the water heater manufacturer a huge advantage in today's competitive marketplace. And, at no additional cost to wholesalers, it's nothing short of a paradigm shift

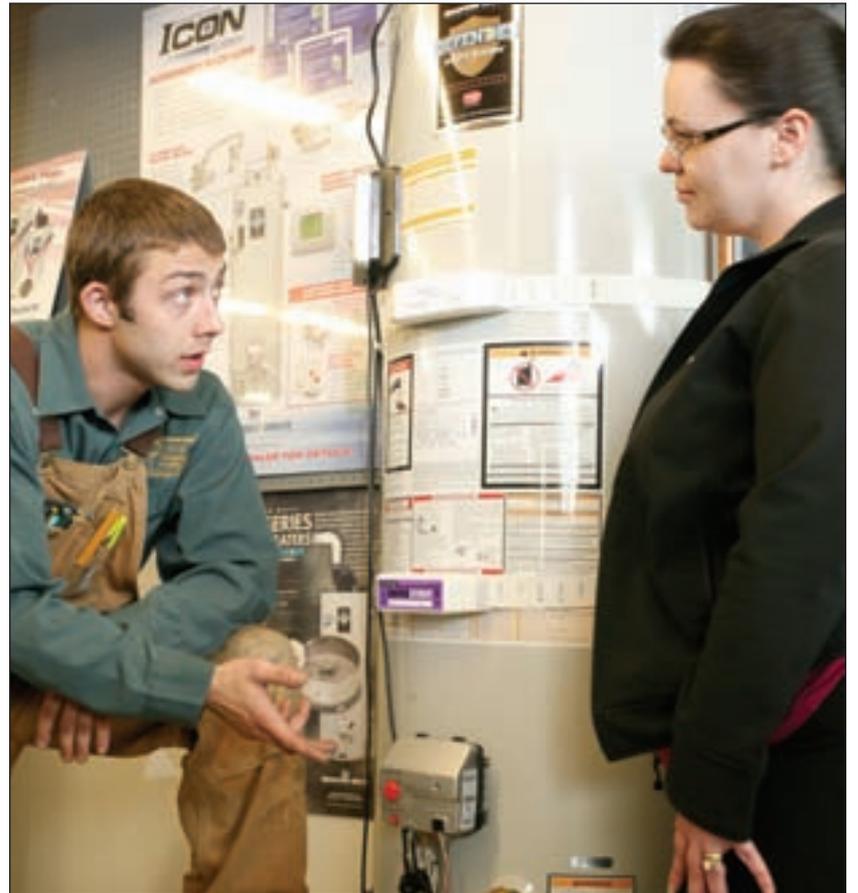
for the marketplace.

### A revolutionary advance in water heating control

Available only to the professional installer and wholesaler, the ICON system is much more than a gas valve. And, assures the manufacturer, it's proven itself through rigorous use in more than 250,000 installed water heater models over the past three years.

"The ICON System has a lineup of features never seen on any water heater before," said Jason Fifer, product manager.

A microprocessor constantly monitors and controls the burner to ensure consistent and accurate water temperatures. The system also works as a diagnostics center for troubleshooting, using an LED light to prompt the installer during



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installation.

The LED also indicates if the pilot flame is on. If it isn't, a built-in Piezo igniter eliminates the need to open the combustion chamber to light the pilot. The entire system is millivolt powered, so no external electricity is required. A thermopile, or a bundle of thermocouples, converts heat from the pilot flame into electricity to operate the gas valve and electronics.

A high strength polymer composite thermowell provides isolation between the electronic temperature sensor and the surrounding water. With this new development, there's no need to drain the tank when removing or replacing the gas valve.

### Accessory module avails versatility

At the AHR Expo, Bradford White also introduced three accessory packages for the ICON System. All of the packages are powered and controlled by the accessory module which includes a multi-color LED status indicator which monitors each of the accessory packages. The module also features an audible alarm with a mute function. The alarm is activated if a leak occurs, and will deactivate automatically if the leak is corrected.

The "protection package" includes an electronic leak detection device that mounts at the base of the heater. If there's a leak, the device triggers the accessory module's alarm, and if there's a prolonged leak, the unit shuts down the burner.

"Once the leak is corrected, the

accessory module will automatically silence the alarm and resume normal operation,” continued Fifer. “If there is no drain pan, the protection package includes a rubber dam which can be installed around the base of the heater. The dam will retain enough water to activate the sensor.”

To go hand in hand with the protection package is the “inlet shut-off valve package.” This package will shut off the water supply to the water heater if the leak detection device senses a leak. It’s an extra safety step beyond the audible alarm. The valve can be installed on the water heater or at any point upstream of the water heater. It features an integral wire harness for easy installation. The accessory module automatically opens the valve when the leak is corrected.

The two-part performance package is all about energy savings. The fully programmable LCD digital control offers full seven day, four period/day programmable control of the water heater. The four periods (wake, leave, return, and sleep) give the homeowner control of the set point for water temperature in the tank based on their usage patterns. Water is kept at optimum temperatures when it will most likely be needed, reducing the wait for hot water.

There’s also a setback feature so that when the homeowner anticipates not needing hot water for an extended length of time, they can lower the set point temperature while out of town. The LCD display is very similar to a home heating and cooling thermostat, complete with a 30+-day backup battery.

“The control can save homeowners as much as 36 percent in energy use,” said Fifer. “It also allows homeowners to program their water heater at the water heater or if wired remotely, anywhere in the home to operate only during the times hot water is required, saving energy and money.”

The second part of the performance package is the enhanced hot water delivery Integrated Mixing Device (IMD). By blending cold and hot water, the IMD allows water in the tank to be stored at higher temperatures while keeping the outlet temperature the same, which also increases the amount of useable hot water by as much as 50 percent. Maintaining a higher tank temperature (say, 140°F to 160°F) kills bacteria in the water supply.

The IMD incorporates several time-saving features. The first is a 1/4-inch NPT cold water port that

can be used in place of a saddle valve when connecting to an ice maker. Also, a 1/2-inch NPT hot water line that can service a washing machine, dishwasher, or other hot water appliance and a 1/2” NPT recirculation inlet can be used for recirculation systems.

Simple to use, the IMD has a push-to-turn knob that sets the outlet temperature. It comes with a factory

setting of 120°F. Requiring only 15 minutes of installation time, the device is much more quickly installed than a traditional mixing valve. “An adhesive thermo-strip indicator is included to so that it’s easy to approximate the mixed hot water temperature,” added Fifer. The strip saves time by eliminating the need to run water at a faucet in order to check system temperature.

“At the show we were asked several times a day: ‘Why has Bradford White invested in such an advanced control technology?’

“In a word — customers,” concluded Fifer. “Customers asked for a sophisticated yet simple control, one that gives them performance enhancements and diagnostic capabilities. We’re confident we delivered that in spades.” ■

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# Contractors learn, recharge at Commercial Maintenance workshop



Most attendees have been to numerous BDR classes over the course of several years. It comes as no surprise that the contracting firms represented in the classrooms are some of the most successful in the country.

“I’ve flown to Seattle twice every year for the past 10, and each time, return home reinvigorated, newly inspired, and having learned something new and valuable for the business each time,” said Mark Stout, president of Stout Heating and Air, an 18-person, full-service mechanical contracting based in Salisbury, NC.

Stout and his son, Ryan, were among the 52 contractors from all corners of the nation that came to the mid-March Commercial Maintenance Sales (CMS) workshop conducted by Seattle-based Business Development Resources (BDR).

A training and coaching firm focused exclusively on the HVAC/R industry, BDR unveiled the new two-and-a-half day class as part of their comprehensive Profit Coach program.

“BDR training’s as thorough and complete as it gets, with all facets of the training focused on improving company success and profitability,” said Stout.

“The purpose of CMS training is to improve the negotiating and pulling-in of high margin commercial replacement sales,” explained Jennifer Shooshanian, BDR instructor.

“We teach attendees to do this by

developing loyal customers through carefully nurtured service relationships, which, in turn, improves and stabilizes service and replacement work and new equipment sales,” she added. “The most immediate benefit is the growth of HVAC service departments, typically the most profitable piece of a contracting firm’s business.”

placement revenue, although that number can be as high as \$13 to \$15. “It’s an immense leap,” said Shooshanian. “Once attendees grasp the importance of this, and why we focus their attention on it, gears begin to spin. That’s when they begin to envision creative ways to personalize the process and make it work for their firm,” she continued.



In the CMS class, you get a real world, clear-cut plan to implement a commercial maintenance program into your business.

According to BDR, every dollar of commercial maintenance generates two to three dollars of repair and re-

The CMS course, one of 25 classes currently offered by BDR, covers all aspects of designing and implement-

ing a new commercial sales program, or revitalizing an existing program. Shooshanian, who has nearly 20 years in the HVAC service industry, developed the course with the help of BDR co-owner Bruce Wiseman. -

“Jennifer is a real fireball,” exclaimed Stout. “You can tell that she lives and breathes in this work; it’s in her blood. BDR’s entire staff is top notch. The classes are high energy, and the material they prepare is phenomenal. I’ve been to most of their classes two or three times and gain something new each time.”

Pat Clark, owner of OCL Enterprises, in Anchorage, Alaska, said “I’ve taken nearly every class BDR has offered in the past 15 years.”

Clark recently sold his contracting business so that he could build a new service firm now focused on a few contract accounts. “One great thing about the CMS class is that it can be applied to an infinite number of business situations,” added Clark. “Whether the firm is small, like mine, or a huge, multi-million dollar company, everyone can learn a lot and find ways to apply the training immediately.”

“You don’t just get lip service with BDR. In the CMS class, you get a real world, clear-cut plan to implement a commercial maintenance program into your business,” explained Barry Tysor. For the past seven years, Tysor, president of Anchor Mechanical Inc., in Douglasville, Ga., has been taking courses with BDR. The company, with 35 employees, is a BDR Profit Coach customer.

When taking a look at BDR’s client list, one reoccurring theme seems to present itself; “Betcha’ can’t take just one class.” Most attendees have been to numerous classes over the course of several years. It comes as no surprise that the contracting firms represented in the classrooms are some of the most successful in the country.

## Unfair advantage

“If a company is content with their market share and profit, there’s no point in attending a BDR class,” said Jolie Heiny, service manager at Mountain View Heating, in Bend, OR. “BDR is contagious. The bottom line is: You are going to make money off your investment.”

Heiny has been to BDR’s Service Dispatch University class twice, and to Creating A Strategic Business plan once. The first time she attended a class, Mountain View Prompted her attendance, but when she got the card in the mail about the CMS course, there wasn’t a moment of

hesitation; the dates were penciled into her already-full calendar.

“It’s like opening up a notebook on exactly how to run a profitable company,” said Heinly. It’s graduate-level training and guerilla tactics all in one, packed into a training experience that’s compelling and — when we go our spate ways — ready to implement.”

ended up without BDR’s Profit Coach guidance when the economy tanked and our sales dropped,” he added. “I have to give credit to BDR, they have helped us run smoother and smarter. They’ve helped me change from an AC mechanic into a smarter, savvier business man and entrepreneur.

Mason experienced for himself that — following the BDR model —



*BDR training’s as thorough and complete as it gets, with all facets of the training focused on improving company success and profitability.*

#### Profit coach

Profit Coach is a program separate from the classes BDR conducts. Through the program, BDR provides clients with individualized, monthly coaching services that have a proven, verifiable track record of driving profitable growth.

growth and forward movement is achieved by improving business structure, putting the right processes in place, financial analysis and the building on planned changes, the most important facet. Since change and positive results never occur overnight, BDR mandates that com-



*Contractors can network with others and discuss business strategies with members of the BDR team.*

Steve Mason owns Mason Mechanical in Mesa, Ariz. He and his wife became Profit Coach customers in ’06.

“We actually dropped in revenue last year and still made a higher net profit than in the last several years. Less work and more money; I can’t complain,” said Mason.

“I don’t know where we would have

panies sign up for the program for a minimum of one year.

“Ultimately, the amount of success a company experiences depends on how well the new plans are put to use,” said Wiseman. “We place a lot of importance in creating a nutrient-rich petri dish, or crucible, for that growth. It’s what we do best.” ■

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## Special ceremony marks opening of India water heater plant

BANGALORE, INDIA — A special ribbon cutting ceremony attended by company officials, dealers, and customers marked the official opening of A. O. Smith's newest manufacturing operation, a residential water heater plant in Bangalore, India.

A. O. Smith chairman and chief executive officer Paul W. Jones and A. O. Smith Water Products Company president Ajita G. Rajendra hosted the event, which included more than 150 dealers and customers from throughout India. A. O. Smith is the first U.S. water heater company to establish a manufacturing presence in the country.

The 76,000-square-foot plant, located in the Harohali Karnataka In-

dustrial Area, will manufacture glass-lined residential water heaters for the Indian market in sizes ranging from six liters up to 100 liters. The plant is located on 20 acres just outside of Bangalore; the site also will serve as the headquarters for A. O. Smith's Indian business.

"A. O. Smith is known as a company that emphasizes manufacturing and process technology, and this plant will take its rightful place as one of our showpiece operations, an outstanding addition to our global capabilities," Jones said during the ceremony.

"Over the last 15 years, the company has greatly expanded its presence in markets outside the United

States," he continued. "Now, we are embarking on the next phase of global expansion with this exciting new facility in India. And while we are still very new in this country, we are excited about the growth potential it has to offer, not just in terms of water heaters, but also electric motors and water purification products."

A. O. Smith began researching the Indian market five years ago, Rajendra said, and its efforts in establishing the business included developing a series of products specifically designed for the Indian consumer, building a distribution network and stocking warehouses throughout the country, and hiring a strong local team. Rajendra also acknowledged

the importance of the company's strategic partnership with Jaquar, one of the largest suppliers in the sanitary ware channel in India.

"Bangalore's location is ideal, strategically located in the midst of one of our key markets, with good infrastructure to meet our long-term distribution needs. The city also has a well-educated work force with tremendous exposure to the latest technology, which we also felt was essential to our success. As is the case with any A. O. Smith operation in the world, the plant combines a balanced mix of technology and well-trained employees. This potent combination allows us to build products of consistently high quality," said Rajendra.

## PVF market report

(Continued from page 52.)

specials are running 16 - 20 week lead times.

**Comments** — Manufacturers indicate raw material costs have increased slightly, but they expect more stabilization through the last half of 2010. They also predict very strong growth opportunities beginning now through 2015.

### Bronze and Iron Gate, Globe, and Check Valves

**Price** — Bronze valves are forecast for a 1% - 2<sup>1</sup>/<sub>2</sub>% increase through the 3rd quarter, while Iron valves are forecast to increase 3% - 5%.

**Lead Times** — Fill rates for Bronze valves are 80% - 90% and Iron valves are lower at 70% - 80%. Lease times for Bronze and Iron valves are forecast for 4 - 8 weeks.

**Comments** — Raw materials costs for bronze ingot has increased greatly and are expected to continue to increase thru 2010. Overall demand for Bronze valves are up 20% versus

2009. The pulp and paper business is stable. Chemical plant opportunities are increasing. Mechanical construction is expected to remain at lower levels. MRO activity is high.

### Cast Steel Gate, Globe, and Check Valves

**Price** — Manufacturers indicate no change in pricing for third quarter 2010.

**Lead Times** — Lead times are running 4 - 8 weeks with fill rates of 70% - 80%. Specials are shipping in 16 - 20 weeks.

**Comments** — Raw material costs are increasing somewhat. Overall there is a lot of inventory of commodity product in the US stocks; however, the inventory is decreasing. Very strong growth is expected in the cast steel market over the balance of 2010 and the next several years.

### Forged Steel Gate, Globe, and Check Valves

**Price** — One manufacturer indicates no change this quarter due to

supply and demand, and another indicates a 3% - 5% increase due to raw material costs.

**Lead Times** — Lead times are running slightly longer for forged steel valves at 6 - 12 weeks. Fill rates are also low on this commodity at 50% - 65%.

**Comments** — One manufacturer comments that forged steel valves sales are up over 2009, but not yet back to the 2008 levels. Foreign competitors for forged steel valves create downward price pressure. End users are expanding AMLs to permit use of these foreign products for cost savings. Manufacturers are looking for lower cost solutions, so more and more production is shifted from the US to lower cost locations. Global supply and integration is the biggest change in the industry. Another manufacturer also notes that

plants around the world have scaled back capacity by 10% - 20% compared with 2009 production levels.

### Quarter Turn Valves — Ball and Wafer

**Price** — No significant price

changes are forecast for this quarter.

**Lead Times** — Fill rates for quarter turn valves are running 70% - 80% with lead times of 4 - 6 weeks. One manufacturer indicates they have improved many of the lead time problems they experienced in the first half of 2010.

**Comments** — Foreign competition for ball valves have increased substantially from China, India and Korea. One manufacturer reports that a source commented that China is a concern, because they have purchased so much scrap metal. The concern is that radio-active material has been found in fittings and flanges from China. ■

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# INDUSTRY NEWS

## Hilti Diagnostic Centers reduce downtime

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According to Amy Cole, Senior vice president of channels, "Hilti is proud

to be the first in the industry to provide this type of innovative service. By providing minor repairs, battery testing and laser calibration checks, we help our customers reduce downtime which is critical to their productivity."

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## Watermelons and stale beer

BY JOHN MEISENBRINK,  
editor

Every year about this time I go searching for answers — for *Phc News*' Heating Season Preview — on how the economy will shake out in the water heating market. Experts tell me that all indicators point to a flat and soft Q4 2010 and up slightly in early 2011. Soft and flat — I'm not referring to feeling out fruit in the produce aisle and guzzling a stale pint at the local watering hole.

For the most part, let's take soft, flat and up slightly for now, because it isn't DOWN! Let's take what we can get as the water heating industry begins to dust itself off and readies itself for short-term and long-term future recovery.

"We expect the water heater market to be up 5-7% in Q4 2010 and flat to up slightly in Q1 2011," said Charles (Chuck) Rohde, wholesaler market manager, Rheem Water Heating.

The residential water heater market is making strides in recovery. "In general, the water heater market has recovered nicely in the first half of 2010. The total market is up about 7% year over year through June, with growth in residential gas outpacing residential electric by about 3-to-1," said Bruce Carnevale, vice president of sales and marketing, Bradford White.

I wish it was better news, but really the biggest ally you'll need is time. There are some solutions out there that can stem the tide, however. "With

the ongoing trend toward green building, Lochinvar is at the forefront of offering high-efficiency water heaters that keep energy usage and operating costs to an absolute minimum. In addition, we are now offering new solar indirect water heaters, which draw heated water from a separate solar energy collector," said Sterling Boston, director of marketing, Lochinvar Corporation.

Therefore, this general trend of new technology is being driven by the demand for higher energy efficiency products. This trend is impacted by a number of factors: government and state incentives, utility rebates, consumer awareness, energy costs, etc. "Likewise, with this new technology, advanced electronic controls and diagnostics are also emerging," said David Chisolm, brand manager, A.O. Smith.

"Trends include the development of high energy factor (EF), alternative technology products (heat pump, solar, condensing gas and other hybrid gas), as well as ENERGY STAR and compact/small footprint combo water/air heating products. Also, partnerships with off-grid, electric generation appliances (i.e., wind generation) are gaining momentum. Trends for the consumer include interconnectivity of HVAC appliances — energy management and demand response management," said Jeff Haney, product manager, Rheem Water Heating.

Let's not project all doom and gloom, for the market is picking up, although perhaps not to the

point where it once was — pre-2008 numbers. Let's face it, we might not see that for some time.

**Therefore, this general trend of new technology is being driven by the demand for higher energy efficiency products. This trend is impacted by a number of factors: government and state incentives, utility rebates, consumer awareness, energy costs, etc.**

"We see the general water heater market staying relatively flat for the balance of 2010 with modest recoveries in 2011. It will be quite some time before the market recovers to the previous level that we experienced," said Chisolm. ■

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Application to mail at Periodical #022-074.

POSTMASTER: Send address changes to Plumbing & Hydronic Contractor News, Creative Data Services, 519 E. Briarcliff Road, Bolingbrook, IL 60440. *clewis@cds1976.com*  
Publications mail agreement No. 41499518: Return undeliverable Canadian addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill ON L4B 4R6

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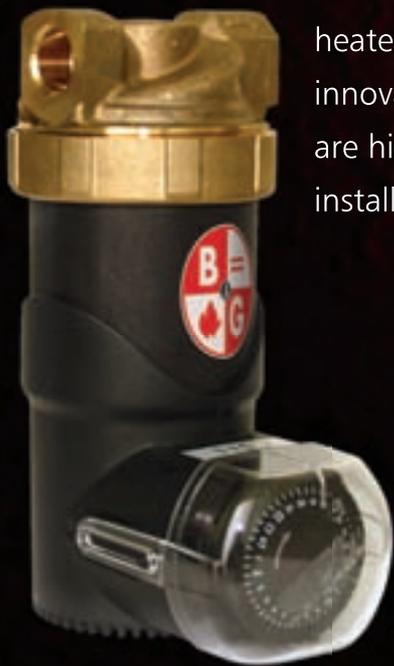


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# Diversify your business potential by attending a Viega training program on some of the latest technologies in the plumbing and heating industry.

## CAD 101

This course will cover the basic knowledge of 2D drawing commands.

This course will include:

- Basic Drawing Commands
- Basic Modify Commands
- Basic Radiant Layout
- Plotting

## Radiant Piping and Controls

This course focuses on different piping arrangements and control strategies which can be considered when installing a radiant system. Applications such as hybrid systems, multiple temperature piping arrangements, as well as system component placement will be covered.

This course will include:

- Piping Theory
  - Radiant Heating
  - DHW
  - High Temp
  - Geothermal
  - Solar
- Mixing Options
  - Injection Mixing
  - Mixing Valves
  - Diverting Valves
- Distribution Piping
  - Parallel
  - Series
- Controls
  - Outdoor Reset
  - Zoning
  - Hands on Installation

## Radiant Design and Software

Day one is dedicated to design theory and practices where you will achieve a greater understanding of how to maximize your radiant design. The second day takes place in our state of the art, amphitheater style computer lab allowing you to get first hand experience utilizing the most up-to-date Viega Radiant software release.

This course will include:

- Design Considerations
- Manual Heat Loss
- Radiant Panel Design
- Budget Quote Estimating
- Material Selection
- Reports and Submittals

## Radiant Week

This course is comprised of two multi-day courses culminating into a week long radiant experience. It combines Radiant Systems, Radiant Design and Software along with Radiant Piping and Controls.

## Hydronics 101 and Radiant Systems

This course will provide you with a basic understanding of how Hydronic system components work as well as the different options that are available to you. This course will also allow you to expand your knowledge of radiant installation options. You will leave with an understanding of the features and benefits of radiant systems and the ability to estimate materials for a variety of applications.

This course will include:

- Hydronic Components
  - Piping Materials
  - Boiler Options
  - DHW Options
  - Hydronic Accessories
- Advantages of Radiant Heating
  - Dry vs. Wet Systems
  - High vs. Low Mass Systems
- System Anatomy
  - Climate Panel System Design
  - Material Calculations
  - Panel Design
  - Hands On Installation

Register online now at [www.viega.net/training](http://www.viega.net/training).

## Manual J Heating and Cooling Loads

This course will cover the calculation of Residential Heating and Cooling loads based on ACCA's Manual J.

This course will include:

- Design Condition
- Windows and Sky Lights
- Infiltration

## NFPA 13D Fire Sprinkler

This course will cover design and installation options for NFPA 13D Residential Fire Sprinkler Systems.

This course will include:

- NFPA 13D Requirements
- Installation Considerations
- System Design
- Walls
- Ventilation
- Duct Losses

## Snow and Ice Melting

This class will take an in-depth look at the design and installation of hydronic snow and ice melting systems. Coursework will include design, installation practices, estimating operating cost, piping and control options.

This course will include:

- Design
  - Load Selection
  - Calculations
- Applications
  - Concrete
  - Asphalt
  - Pavers
- Piping and Controls
  - Mixing Options
  - Control Strategies
- Operating Cost
  - Intermittent
  - Idling
  - Cold Start

## Geothermal and Solar

This course will cover design and installation options for Geothermal and Solar Systems.

This course will include:

- Geothermal
  - Socket Fusion
  - Ground Source Options
  - Ground Source Design
  - System Payback
  - Utilization of Software for Ground Source Design and System Payback
- Solar
  - Panel Options
  - Solar Design Consideration
  - Collector Sizing for DHW Production
  - System Payback
- Utilization of Software for Collector Sizing for DHW Production and System Payback

# Viega Educational Facility Course Descriptions

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in plumbing and  
heating systems

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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.



1980



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

Production of plastic tubing, PureFlow® PEX products begins.



1996

1999



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

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



2008



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

2009

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.

The new century saw rapid growth in Viega innovations, including PureFlow – the first PEX press plumbing technology,

ProPressG™ for solderless fuel gas applications, hybrid technology to connect copper to PEX, the Smart Connect® feature to quickly identify unpressed fittings and several innovations in the Viega ProRadiant line.

From Franz-Anselm Viegener's first product introduction in 1899, Viega's family heritage of innovation, quality and service still flows through all Viega products and the people who design, make, sell and support them. It is this heritage of better ideas that allows Viega to extend its reach to exceed customer expectations around the globe.



A heritage of better ideas since 1899

The global leader in plumbing and heating systems

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