

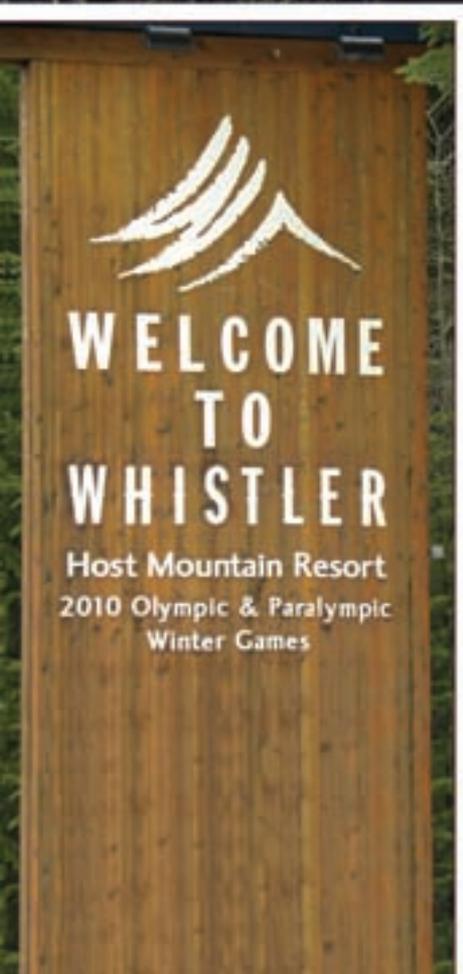
A TMB Publication

Phc News

plumbing & hydronic contractor news

2010 Winter Olympics – Implementing
geothermal like you’ve never seen

Story on page 38



Take Control with Burnham

ES2™ 

SIMPLICITY!

- Gas fired atmospheric boiler
- 85% AFUE, ENERGY STAR rated
- Cast iron heat exchanger
- Equipped with Burnham's innovative "Plug & Play" IQ control system

IQ control system



The IQ Panel accepts optional IQ Option Cards for **simple** "plug & play" installation of outdoor reset, low water cutoff, and aquastat. The IQ Control System integrates aquastat, relay, and ignition functions into a single module. It features an LED readout which displays boiler status and diagnostic information. **A touchscreen interface is also available!**



85%
Atmospheric
Gas Boiler

**UNMATCHED
CAPABILITIES**

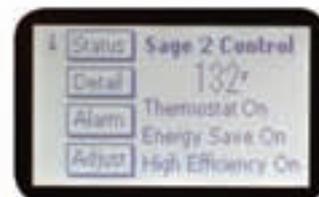
95%
Condensing
Gas Boiler

Alpine™

EASY TO USE!

- Gas fired condensing boiler
- 95% AFUE, ENERGY STAR rated
- Stainless steel heat exchanger
- Equipped with Burnham's powerful and easy-to-use Sage2 Boiler Control System™

Burnham
Sage2™
boiler control system



The Burnham Sage2 features a two-color backlit **touchscreen display**, and offers intuitive menus using words & sentences, not cryptic codes. This eliminates the frustrating scrolling associated with many other systems.

Circle 1 on Reader Reply Card

Tell your local Burnham Representative that you want to be **IN CONTROL** with Burnham!

 **Burnham**
by U.S. Boiler Company

www.burnham.com

More heat than a SWAT team.
Green enough for the tree huggers.
Who says you can't please everyone?

PRESTIGE SOLO

Available in five models with capacities ranging from 60,000 to 399,000 Btu/hr.



All the warmth. None of the guilt. Featuring a high efficiency stainless steel condensing gas boiler whose power is matched only by its 95% efficiency, the wall mounted Prestige Series is sure to provide your residential customers with consistent heat and savings all year long. Kumbaya anyone?

For more information, visit www.triangletube.com

** Image shown with Plexiglas® front is for display purposes only.*



Circle 2 on Reader Reply Card



On the Cover

Vancouver, British Columbia hosts the 2010 Winter Olympic games next month, and the Whistler Athletes Village will keep the participants warm and comfortable using an innovative geothermal system that extracts heat from the sanitary sewage system for space and water heating. Story on page 38.

Features

40 Forecast for 2010

We elicit knowledgeable industry forecasts from Skip Pfeffer, PHCC president; David Singleton, QSC chairman; Dan Foley, owner and president of Foley Mechanical, Inc.; and Watts Radiant. All agree that challenges confront the industry but growth is on the horizon.

46, 50 What's BIM?

That's short for Building Information Modeling, and it's a hot concept of virtual conceptualizing a project that is gaining traction among contractors needing to see how the finished job will appear before a wrench is turned.



Phc News

plumbing & hydronic contractor news

Departments



Tankless going mainstream — pg. 52

www.phcnews.com

Owner

Tom M. Brown, Jr.

Chief Editor

John Mesenbrink

Managing Editor

James Schaible

Contributing Editors

Mary Jo Martin

Mark Bruno

Richard DiToma

Morris R. Beschloss

Paul Rohrs

Dan Holohan

Ellen Rohr

Production Manager

Cate C. Brown

Administrative Assistant

Sadie Bechtold

Editorial Offices

1838 Techny Court

Northbrook, IL 60062

Phone: 847/564-1127

Fax: 847/564-1264,

publisher@tmbpublishing.com

Sales Offices

David Schulte, Publisher

Midwest, Southeast,

Eastern Canada

1838 Techny Court

Northbrook, IL 60062

847/564-1127

Fax: 847/564-1264

dave@tmbpublishing.com

Brad Burnside, East

1838 Techny Court

Northbrook, IL 60062

847/564-1127

Fax: 847/564-1264

brad@tmbpublishing.com

Diane Spangler, West, Texas

Diane Spangler

P.O. Box 9802

Fountain Valley, CA 92728

714/839-6700

Fax: 714/839-6777

diane@tmbpublishing.com

Direct subscription

inquiries to:

Cynthia Lewis

Creative Data Services

519 E. Briarcliff Road

Bolingbrook, IL 60440

clewis@cds1976.com

630-739-0900 x203

Fax: 630-739-7648

TMB Publishing, Inc.

Tom M. Brown Jr., President

WHY DO THIS?

When You Could
DO THIS!

The Isolator
Uni-Flange Ball Valve

THE MOST OPTIONS
ANYWHERE

- Original Isolators
- Hi-Flow Drains
- Rotating Flanges
- Integral Check Valves
- Slotted Holes For High Velocity Pumps

PATENTED
DESIGN

As featured in this
issue's cover story.

“Webstone's valves are fantastic. They save me time, they save me money and when I see a boiler job installed without Webstone valves I always ask myself, is this contractor crazy?”

Brian Debeaver
Owner, Mile High Plumbing & Handyman Golden, CO

Webstone
Company, Inc.

www.webstonevalves.com
One Apple Way
Wareham, MA 01956
Tel: (800) 225-9129
Fax: (800) 336-6133

Columns

DAN HOLOHAN: Early scientists defined the way things work18

PAUL ROHRS: Simple heating systems provide a nice break22

ELLEN ROHR: The balance sheet can be one of your best tools24

BRISTOL STICKNEY: SWH, SRCC & OG-300 are terms you should know26

RICHARD DITOMA: Your profit margin probably is too low30

MORRIS BESCHLOSS: Weldbend on a roll despite rough times36

In the News

Dual PMG listing from UL, ICC6

The Pulse: Tubing cutter tips; fuel and metal prices up8

Kudos to Taco for preserving jobs .10

Energy programs gain ground12

New board for PHCC education . . .14

HeatingHelp: the Wall20

Navien America bringing tankless water heating to the masses . . .52

Utah mountain lodge mines solar silver for DHW system56

Siemens 'greens' Housing Authority .64

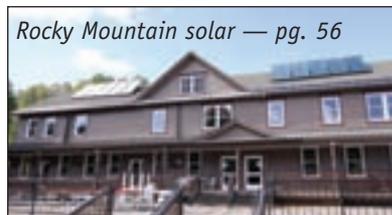
Nexstar contest nets \$18M+ for member companies65

Product News: Boilers and water heaters60, 62

From the Editors

Water heating sector expecting cool 2010 business climate66

Rocky Mountain solar — pg. 56



Circle 3 on Reader Reply Card

THE PAST CANNOT PREDICT THE FUTURE



**PRO-PAL
SERIES**

BALL DRAIN

"Great valve, saves so much time!"

*Richy Becker
Becker's Plumbing & Heating
Scranton, PA*

"Very practical and high quality"
Dane Anderson, APHAC, Galva, IL

"Also perfect for Solar"
*Chris Warfel, Entech Engineering
Block Island, RI*

- Installs in half the time
- Less leak paths— full flow
- Available 1/2"– 2" IPS and SWT
- Use it after the water meter
- Use it in pre-fab headers
- Use it anywhere you need a ball valve and a drain



**As featured in this
issue's cover story.**

Webstone
INNOVATION

www.webstonevalves.com
Tel: (800) 225-9529 • Fax (800) 336-5133

G U A R A N T E E D F O R L I F E

Circle 4 on Reader Reply Card

**What's
in your
future?**



ICC Evaluation Service and UL introduce dual PMG listing

ICC EVALUATION SERVICE, INC.® (ICC-ES®) and Underwriters Laboratories (UL) have established a dual PMG listing program for plumbing, mechanical, and fuel gas (PMG) products. The purpose of the program is to provide code officials and construction professionals with a reliable means to verify that PMG products comply with

applicable codes and standards.

Jeff Smith, general manager of UL's Global Water & Food Business, announced the program by saying, "This strategic alliance leverages the shared strengths of UL and ICC-ES: credibility, integrity, technical expertise, and brand recognition. The dual PMG listing program pro-

vides manufacturers and regulators with a one-stop resource for determining the code compliance and standards compliance of PMG products. We at UL are excited to be working with ICC-ES to bring added value and convenience to this industry." For more info, www.icc-es.org or www.ul.com/water.

Slant/Fin hires director of national accounts

SLANT/FIN CORP. announced the hiring of Phil La Rosa. Phil will hold the position of director of National Accounts. La Rosa has more than 30 years experience as a sales executive in the hydronic heating industry.



AHRI warns consumers about modification of gas-fired appliances

ARLINGTON, VA. — The Air-Conditioning, Heating, and Refrigeration Institute (AHRI), warned consumers about the dangers of unauthorized and unapproved altering or any gas-fired heating appliance. Manufacturers must use specific engineering and design knowledge to develop gas-fired heating appliances that operate safely and properly under a variety of conditions.

The product designs are tested and certified by third-party independent testing agencies, like CSA International, ETL/Intertek and Underwriters Laboratories for compliance with nationally recognized voluntary consensus safety standards. Any unauthorized modification to a gas-fired appliance, no matter how minor, can alter the design and compromise the safety of that unit. For example, an alteration that changes the combustion process may cause carbon monoxide (CO) emissions that exceed the limits specified in the safety standards. Modifications should only be made that are authorized by the original equipment manufacturer (OEM) or other recognized authority and performed by qualified service personnel.

"Any unauthorized modification to a gas burning appliance voids its safety certification and may expose consumers to a risk of property damage, personal injury, or even death," said AHRI chief technical advisor Frank A. Stanonik.

Webstone ready for new lead-free laws

WEBSTONE will be offering select EXP Tankless Water Heater Service Valves kits that are compliant with California and Vermont's new lead-free requirements. As of January 1, 2010 the patented EXP E2 will be available in our signature "Clean-Brass"™ construction, cUPC certified for compliance with AB 1953 & NSF/ANSI 61-8 Annex G. Call (800) 225-9529 for details.

STAINLESS STEEL

PEX FITTINGS AND VALVES

- EXCEEDS CALIFORNIA LEAD-FREE LEGISLATION
- HIGH QUALITY & WIDELY USED WORLDWIDE
- MEET ASTM F1807 STANDARD
- COMPETITIVE PRICED





See us at:



Link-tech™
www.linktechj.com



PEX tools for copper rings (US Patent 7,688,822)



PEX tools for cinch clamps (Patent pending)



Battery PEX crimp tools

Circle 5 on Reader Reply Card

Introducing the

Elite

Heating Boiler

Best
Turndown
Ratio
6 to 1

The Elite Boiler has an outstanding 6 to 1 turn down ratio. Greater turndown allows this appliance to modulate at lower firing rates which reduces short cycling, conserves energy and improves component reliability.

Best
Venting
200 Feet

HeatTransfer
Advanced Heating and
Hot Water Systems



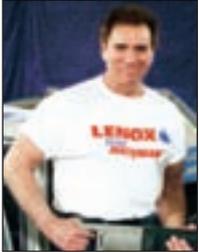
Best
Range
6 inputs,
floor & wall
mount

The Elite Heating Boiler® offers six input options ranging from 80,000 to 399,000 BTU's. This range will offer you the flexibility that you need to properly size your installation.

Up To
98%
AFUE

Maximize your venting options. The Elite Heating Boiler® offers an impressive combined 200 vent length feet allowing incredible installation flexibility. All Elite Heating Boilers are vented in easy to install PVC venting and utilize a built in ULC S636 compliant CPVC adaptor.

TOOL TIPS with Hackman



Tubing Cutter – the right tool for the job

Tool Tips feature trade tips from Lee “HACKMAN” Breton, marketing services manager

for LENOX, team hackman event manager and car cutter extraordinaire. Every month, hackman shares insight from his 25+ years in the tool industry.

Thinking of picking up a new tubing cutter? I have a couple of suggestions on what to look for. Overall, you should be looking for quality construction, cutting wheel tracking, a professional deburring tool, ease of use in tight spaces, ability to provide a clean cut and easy-to-replace cutter wheels.

A professional-style deburring tool cleanly and easily deburrs pipes with the replaceable machinist's reamer. Alternatively, if you use a tubing cutter with a wedge-style deburring tool, it can actually expand the tube out if too much force is

used. This can enlarge the outside diameter of the tube and prevent fittings from connecting properly.

Another important feature to look for is a roller tracking system that



keeps the tube in place to prevent threading. Larger capacity tubing cutters feature a four-roller system that holds the pipe at four points versus two, enabling a highly accurate cut without the “walking” often associated with a two-roller cutter. The four-roller system also allows you to make accurate cuts on larger tubings than a two-roller cutter.

For a highly accurate cut every time, you must choose the right tool for the job. Tubing cutters come in a variety of sizes, so it is important to get the right size for your specific job. Cutter wheels are also available for specific materials. For example,

there are wheels for cutting difficult-to-cut metals like brass and stainless steel, or softer materials like copper, aluminum. Specific wheels for PVC and plastic are also an option.

It's important to get a tubing cutter with a ball-bearing driven tension knob to make for easier spinning in hand estimated sizes. An added feature to look for is a full-stop system

that keeps the wheel and roller from colliding after cutting, keeping the wheel sharper longer.

Quick tips for quick tube cutting

- With the open side of the tubing cutter facing you, place it on the tube and turn the tension knob so the cutting wheel is against the outside wall of the tube.

- To begin cutting, place your hand on the tension knob and push the tubing cutter down and around.

- As you rotate the tubing cutter, your hand automatically tensions the knob making for a faster cut without having to remove your hand. ■

FUELS

GASOLINE

Area	\$/gal.	Change
U.S. average	2.665	↑
East Coast	2.653	↑
New England	2.685	↑
Central Atlantic	2.686	↑
Lower Atlantic	2.618	↑
Midwest	2.637	↑
Gulf Coast	2.525	↑
Rocky Mountain	2.509	↓
West Coast	2.900	↑
California	2.987	↑

DIESEL

Area	\$/gal.	Change
U.S. average	2.797	↑
East Coast	2.827	↑
New England	2.935	↑
Central Atlantic	2.932	↑
Lower Atlantic	2.772	↑
Midwest	2.771	↑
Gulf Coast	2.750	↑
Rocky Mountain	2.746	↓
West Coast	2.908	↑
California	2.959	↑

METALS

*Copper	\$3.47/lb.	↑	**Aluminum	\$1.01/lb.	↑
---------	------------	---	------------	------------	---

Prices valid as of 1/4/10. 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 prices according to NYMEX.com. ** Aluminum prices according to metalprices.com.

Never run out of hot water again.

Eemax provides an endless supply of energy-efficient hot water.

- ▶ 99% efficient
- ▶ External fingertip digital temperature control
- ▶ LED temperature display
- ▶ Self-modulating heating elements
- ▶ Water connections: "Quick Connect"

Eemax
For Water Solutions. Build It Easy.

Trust the #1 brand of electric tankless water heaters in the U.S.
800-543-6163 / Eemax.com

Made in USA



THIS LEAKING PIPE
DOESN'T CARE ABOUT THE
FINANCIAL CRISIS.

There's business out there.
With **Benjamin Franklin Plumbing®**,
more of it could be coming to you.

In good times and bad times, people
always have things that need to be fixed.
As a Benjamin Franklin franchisee, you can be
the one they call. We've got the brand name
recognition, the operating systems and the
support to help make your business a success.
Customers needing plumbing repairs are calling
Benjamin Franklin Plumbing right now.
So should you.

To learn how you can dominate your marketplace
with Benjamin Franklin Plumbing,
call 866-484-5560 or visit
www.thankyoubenjaminfranklin.com/phc



If there's any delay, it's you we pay!®

Taco's work-share initiative gets mention in AP article on Obama Jobs Summit

CRANSTON, R.I. — Taco, Inc. was highlighted in a widely reported Associated Press story on the recent White House Jobs Summit. The company's successful attempts to avoid laying off any of its workers during

the downturn this year was discussed at some length in the article.

The AP article focused on strategies that companies can undertake to create and preserve jobs. The first of four examples cited in the article

concerned Taco's experience. Rather than lay off experienced workers during the course of this year, Taco elected to carry out a lay-off avoidance strategy called WorkShare, whereby workers worked a

day less each week and made up much of the difference in lost salary with unemployment compensation. WorkShare also allowed workers at Taco to keep their benefits intact.

The WorkShare effort affected almost 300 Taco production employees in R.I. and Mass., and was carried out in conjunction with the R.I. Dept. of Labor & Training and the Mass. Dept. of Workforce Development. "WorkShare has allowed us to make the best out of a difficult situation," commented Taco's senior vice president of Human Resources, Kyle Adamonis. "It makes it possible for us to keep our valued



employees and maintain our production, although at the slightly diminished level dictated by our circumstances."

Taco CEO and president John Hazen White, Jr. has long maintained that his workers are his most important obligation, even beyond his customers. "Taco employees are my number one priority," he said, "because they are the key to our success."

R.I. employers, in addition to Taco, have used WorkShare to avert the equivalent of 5,800 layoffs through October of this year, the AP article stated, adding that 17 states now participate in a version of the program.

Taco adds 5 new pump lines in Autodesk Seek

Taco has added five new commercial pump lines as Autodesk Seek: Revit design files. The files are available in three file formats (Revit, AutoCAD 2D and AutoCAD 3D) for the use of design engineers and building construction professionals. The files are accessible at www.taco-hvac.com/revit.html or at <http://seek.autodesk.com>.

Taco commercial pump lines now available via Autodesk are:

- KS Vertical Split-Coupled Inline Pumps;
- KV Vertical Close-Coupled In-line Pumps;
- TC Series Vertical Split Case Pumps;
- CI Series Close-Coupled End Suction Pumps;
- TA Series Horizontal Split Case Pumps; and
- FI Series Base Mounted Split-Coupled End Suction Pumps.

PEX Pipe and Murray Clamps

THE RIGHT CONNECTION!



KEYSTONE HEAVY DUTY SEAMLESS PEX/PAP CLAMPS

Designed Specifically for PEX Plumbing Pipe



- Tested, Listed & Certified by NSF International
- Applications for potable water and radiant heat systems
- Effective sealing with all major brands of PEX Pipe
- Suitable use on metal and plastic insert fittings
- Superior design provides 360-degree seal even in lower temperature installations
- Meets or exceeds ASTM F-2098 requirements
- Patented design minimizes mis-crimps
- One tool crimps all PEX/PAP clamps for faster installation

ONE TOOL CRIMPS ALL SIZES

Made In North America

INNOVATION • TECHNOLOGY • SERVICE

MURRAY CORPORATION

HUNT VALLEY, MARYLAND 21031 • PHONE: 410-771-0380 • FAX: 410-771-5576
 EMAIL: sales@murraycorp.com • WEBSITE: www.murraycorp.com

THE MOST TRUSTED NAME IN CLAMPING SOLUTIONS FOR OVER 90 YEARS!

Circle 9 on Reader Reply Card



Model 22

HOT

WOODFORD 22 SERIES HOT/COLD WALL FAUCETS

COLD



BECAUSE MAN



Model V22

Now, the convenience of year-round outside cold *and* hot water is easy, reliable and maintenance-free.

Woodford models 22 and V22 are freezeless, anti-rupture, and drain automatically with the hose removed. Our patented Pressure Release Valve (PRV Stem) releases at approximately 300 psi, eliminating the chance of pipe rupture.

We've also improved water flow and added long-lasting, more ergonomic powder-coated oval handles. And Woodford quality comes at no extra charge.

DOES NOT LIVE BY COLD WATER ALONE.



WOODFORD MANUFACTURING COMPANY

2121 Waynoka Road
Colorado Springs, CO 80915
800.621.6032 tel
www.woodfordmfg.com

Circle 10 on Reader Reply Card



TRUE OR FALSE:

Disposers
are loud.



The Evolution
PRO Series™ is put
to the test with
Jamie and Adam

from Discovery Channel's
MythBusters.

Can Evolution PRO Series
take on an entire Thanksgiving
dinner without interrupting the
family conversation?

See for yourself.

Build your InSinkEerator prod-
uct knowledge and your busi-
ness. Order the

**Evolution PRO Series
"Throwdown" Training Kit.**

Call 1-800-323-5050.



EMERSON
Appliance Solutions

©2009 InSinkEerator® is a division of Emerson Electric Co. All Rights Reserved.

Energy efficiency program budgets leap 35% in 2009

BOSTON — Budgets for ratepayer funded energy efficiency programs in the United States and Canada topped a record six billion dollars for 2009, illustrating the ongoing and growing support for energy savings and environmental benefits at the state and provincial level. Utility funding increased 35 percent over the \$4.5 billion committed in 2008. Not including onetime U.S. stimulus funding directed to energy efficiency, the U.S. totaled \$5.3 billion, doubling from \$2.6 billion in 2006. Eight Canadian provinces together reached \$800 million, a small reduction from 2008, but showing growth from the 2007 total of \$600 million.

Gas programs demonstrated the most rapid expansion, soaring 274 percent since 2006 and increasing nearly 80 percent over 2008 in the United States. Canadian gas programs rose 25 percent on top of a 39 percent rise in 2008. Consortium for Energy Efficiency (CEE) members administer 89 percent of U.S. gas budgets and 74 percent of Canadian budgets.

Electric budgets in the United States went from a 21 percent increase in 2008 over 2007 to a whopping 37 percent over 2008. CEE members administer 88 percent of U.S. electric budgets reported; Canadian members administer 94 percent. The largest gains were from southeast and south central states, regions that grew more than 76 percent. While most provinces in Canada reported either increases or first time budgets for electric efficiency, decreases in program spending in Ontario and low efficiency loan activity in New Brunswick, both due to the

economic downturn, meant a slight decrease in Canada overall to just under \$0.7 billion.

Impacts measured by CEE members showed savings of 93,000 GWh of electricity and more than 343 million therms of gas, avoiding more than 55 million metric tons of CO₂. The carbon dioxide emissions avoided by CEE member efforts in 2008 are equivalent to the annual emissions from nearly 12 coal-fired power plants—more than two percent of the output of all coal-fired power plants in the United States in 2005. Based on the average retail price of electricity and gas in 2008, the combined utility bill savings for consumers delivered by CEE member programs in that year climbed to more than \$8.4 billion.

Data were collected from 46 states, up from 37 in 2008, and from eight provinces. Working with the American Gas Association and the Institute for Electric Efficiency for the first time, CEE has completed collection of budget and impact data from ratepayer funded energy efficiency programs and plans to make detailed analysis of the data along with our Annual Industry Report available early in 2010. New this year is the collection of expenditure data for 2008, which showed that these programs are spending their allocated budgets.

Major contributors to this year's data collection effort were the American Gas Association and the Institute for Electric Efficiency. Joining forces with these organizations eliminated duplication of effort by all three organizations, reduced the reporting burden for respondents, and enlarged the pool threefold.

How manufacturers benefit from loyalty reward programs

PALATINE, ILL. — Contractors and other industry professionals weigh factors such as price, reputation and availability when purchasing products for commercial or residential jobs. When all things are relatively equal in the buyer's mind, an incentive can swing a product purchase decision one way versus another. But buyers report that the incentives have to be worth their while and that obtaining — and keeping — their loyalty can be a tricky balance of offering enough value to tip the scales in their favor.

James Nowakowski, president of Accountability Information Management Inc., a Palatine, Ill., firm that develops and operates various types of incentive programs for manufacturers, said that many contractors find that the effort to enroll and qualify products for these programs is worth the trouble as long as the pay-off is substantial and realistic to attain. "Companies need to be committed to their customers on all levels and that includes customer incentive programs," said Nowakowski. "It's important to have strong customer relationships, and it all comes down to building loyalty and maintaining trust. Rewarding customers for their faithfulness is part of that relationship." The president of a Cincinnati-area commercial contracting firm with more than 100 employees recounts how he knew nothing about incentive programs until he placed a large

order with a manufacturer's representative several years ago. The salesman informed him that his purchase would qualify for thousands of points in the manufacturer's loyalty rewards program, and the president discovered how quickly the points added up. "Once I saw the points collecting, I kept doing it," he said. "It got to be part of a game." The contracting firm president said an incentive program itself isn't enough to warrant purchasing from one manufacturer instead of another; good service and product quality are most important to him. But the incentive program is a "motivator" to specify that manufacturer's products, as long as the prizes are worthwhile. Trading earned points for money or a catalog item, such as a laptop computer, sports tickets or a home entertainment system, is much more persuasive than promotional trinkets.

Nowakowski said program participants essentially "lock in" their loyalty to win prizes. Research conducted by Accountability found that program members increase their business with a manufacturer that has a loyalty program by more than 25% and that loyalty programs are more influential than rebate offers. "This loyalty translates into much greater value for the manufacturer over the long run than simply beating the competition on a single job bid," he said.



Grind more. Hear less.™



Presenting The Evolution™ PRO Series®

The world's most advanced line of food waste disposers.

.....

MULTIGRIND™

Using MultiGrind technology, the Evolution PRO Series disposers are engineered to quickly grind even the most challenging foods. Like rib bones, corncobs and celery.

.....

SOUNDSEAL®

Innovative features such as the Anti-Vibration Mount,® SoundLimiter™ insulation and Quiet Collar® Sink Baffle - which caps the disposer with a thin barrier of water - make up SoundSeal technology. The result is up to a 60% reduction in noise.

.....

For details on the breakthrough features and technologies of the Evolution PRO Series, talk to your wholesaler or contact your local InSinkErator representative. You can also visit www.insinkerator.com or call 1-800-558-5700.



© 2009 InSinkErator, InSinkErator® is a division of Emerson Electric Co. All rights reserved.
*The mounting collar configuration is a trademark of Emerson Electric Co.

Circle 12 on Reader Reply Card

PHCC Educational Foundation establishes new Board of Directors

FALLS CHURCH, VA. — Sixteen new members of the Plumbing-Heating-Cooling Contractors (PHCC) Educational Foundation Board of Directors were sworn in at their first in-person meeting on October 20, 2009. This is the first time since the Foundation was established in 1986 that the Foundation has had a board of members distinct from the PHCC — National Association board.

“There is so much important work for both organizations to get done that everyone felt the time was right for us to establish a separate board that could devote their full attention to Foundation governance and educational programming,” commented Foundation Chairperson Bill Jones. “The change has also allowed us to reach out to the indus-

try and include some additional talent on the board.”

The individuals seated in newly established Foundation board positions will allow the organization to tap into a broad range industry expertise. Rex Martin of NIBCO INC. is the Foundation board’s first industry manufacturer representative. Thomas Applegate from the Association for Career and Technical Education is serving as the professional educator representative. The board now also includes representatives from the PHCC Association Executives Council and the PHCC National Auxiliary, two groups that play critical roles within the PHCC family.

The new board members will be working actively in 2010 to help the Foundation accomplish its educa-

tional goals and will serve as liaisons to the volunteer-led committees that power the Foundation’s program development.

2009-2010 PHCC Educational Foundation Board of Directors

- Chairperson: William P. Jones, Raven Mechanical, Houston, Texas
- Vice Chairperson: Jo Rae Wagner, CTO, Inc., Harlingen, Texas
- Secretary-Treasurer: Ron Newman, Lakes Plb., Htg. and Cooling, Inc., Spirit Lake, Iowa
- Board Members: Thomas Applegate, Laurie Crigler, Nancy Jones, Michael J. Kastner, Frank Maddalon, Rex Martin, Frank Monroe, Skip Pfeffer, George Raburn, Ann Rivers, Paul Swan, Ike Casey and Gerry Kennedy. For more info, www.phccweb.org.

PHCC Educational Foundation welcomes new donors

The PHCC Educational Foundation announced the addition of four new major Endowment Fund donors to their Board of Governors.

- James and Patricia Lewis, James L. Lewis, Inc., Chenago Forks, N.Y.
- Frank and Iris Maddalon, F.R. Maddalon Plumbing and Heating, Inc., Trenton, N.J.
- Ron and Jeanette Newman, Lakes Plumbing, Heating and Cooling, Inc., Spirit Lake, Iowa.
- PHCC of Massachusetts State Chapter, Braintree, Mass.

The Foundation Board of Governors consists of contractors, manufacturers, and wholesalers who have made major contributions of their funds, time and expertise to supporting education and training for the plumbing-heating-cooling industry.



System 2000, the world's leading technology for heat and hot water efficiency, . . . is still made in the USA!

Even in the face of rising costs, Energy Kinetics *continues to invest in America.*

For over 30 years, we've built System 2000 using reliable industry standard *American-made* components and materials, including specially formulated US steel, with insulation, jackets, fittings, piping, and even our state of the art Digital Energy Manager with Hybrid Energy Recovery* – *all made in the USA.*

And here are more benefits your customers will appreciate!

- **Energy efficiency.** System 2000 is so efficient it tested better than all the 90-95% AFUE systems in the US Department of Energy's Brookhaven National Lab study called "The Performance of Integrated Hydronic Systems"![†]
- **Technician and installer friendly.** Our pre-piped and pre-wired installation saves up to 6 man hours of labor. Plus, the swing down access door and industry standard components provide easy tune-ups and diagnostics.
- **Built with solar energy.** Customers enthusiastic about renewable energy will be happy to know that System 2000 is built with power from our own award winning solar array (below).



Our award winning renewable solar energy array

Join us by calling toll free today!

Better than the 90-95% AFUE systems tested!

American made
SYSTEM 2000

Call us today for **800-661-0902**
more information www.system2000.com

* For this renewable energy initiative, System 2000/Energy Kinetics was named "2008 New Jersey Clean Energy Small Business Leader of the Year."

As an ENERGY STAR® Partner, Energy Kinetics has determined that this product meets ENERGY STAR® guidelines for energy efficiency. System 2000 has an AFUE rating of up to 87.9%. † The color yellow for heating boilers is a registered trademark of Energy Kinetics. ‡ United States Department of Energy Brookhaven National Laboratory (2007), by Dr. T. Butcher.

THE SOUND OF SPEED



The Emerson logo is a trademark and service mark of Emerson Electric Co. ©2010, RIDGID, Inc.

BAM!

Wrap the chain...press the trigger...and BAM! That's how fast and easy it is to cut soil pipe with the RIDGID Press Snap™ Soil Pipe Cutter. Designed for use with all RIDGID standard press tools, Press Snap cuts 1-1/2" to 4" service weight and no hub soil pipe in seconds.

With Press Snap, there's no more manual ratcheting...and no lengthy lever arms. It's a snap to cut with Press Snap!

Learn more and schedule demonstrations: 800.769.7743 or www.RIDGIDForum.com/press_snap.

We Build Reputations™

RIDGID

Circle 14 on Reader Reply Card


EMERSON
Professional Tools

DIAGNOSTICS

PRESSING

PIPE & TUBE TOOLS

DRAIN MAINTENANCE

POWER TOOLS

1st Annual James McComas Scholarship Award announced

The Oilheating Industry is continually looking for qualified heating technicians to work in the industry. National Association of Oil Heating Service Managers (NAOHSM), whose mission is education, takes the lead with this effort by annually offering scholarships to those students interested in furthering their education in this field.

One such believer in the need for education and quality service was James McComas, owner of McComas Fuel Co., Baltimore. Jim passed away in December 2009 at the age of 51. The news of his passing was shocking to many in the Md. oilheat community. When national V.P. Ralph Adams, Parker Fuel Company, heard of his friend's passing, his immediate thought was how to keep the memory of Jim alive. Remembering his early years of spending time in a classroom

with Jim, both learning about oilheat, Ralph suggested a scholarship in his name.

James is survived by his wife Emmalee, Monkton, Md., and their five children.

The James McComas Scholarship award will be given along with a minimum of eight other scholarships at the association's annual Awards Banquet, Tuesday, May 25th, Providence, R.I.

To be considered a candidate for a scholarship, an applicant is required to write a 500-word essay entitled, "What are your thoughts about the oil heating industry and what appeals to you about this segment of the energy industry?" The essay, along with a simple application, is to be submitted to the National office no later than Friday, March 19, 2010. For more info, www.naoahsm.org.



Mestek mourns death of colleague

Mestek announces the recent passing of friend and colleague Stephen M. Schwaber, executive vice president, Mestek Distributor Products Group, at the young age of 53. Steve leaves behind his wife Cindy, the love of his life, his beloved

mother Katherine, his children Christopher and Timothy, his step-son Jessie, and his brother Robert and sister Deborah.



Calculate facility water usage, savings with iPhone App from Sloan Valve Co.

FRANKLIN PARK, ILL. — Calculate facility water usage and potential savings on the go with the new Save H₂O water savings calculator from Sloan Valve Company, a free business application for the iPhone platform.

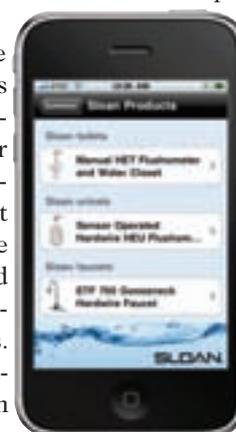
This new iApp for the iPhone allows facilities managers, architects, engineers, plumbers and other professionals to immediately estimate current water usage and determine savings that could be gained by switching to water-efficient plumbing products. The Save H₂O iApp is suitable for new construction or existing facilities in commercial, hospitality and residential markets.

"Water is the most precious resource we have, and the iApp is a way of educating others on how they can help reduce their environmental impact while saving money," said

Tim Schiffbauer, Sloan's director of marketing.

To calculate water usage and savings, the Sloan iApp asks users to input information, such as the type and quantity of toilets and urinals currently in the facility, the number of people who use the restrooms and local water rates. The iApp displays photos and specifications for a variety of Sloan water-efficient plumbing products. Save H₂O immediately reveals its calculations and allows users to alter variables for different results.

Although consumer-oriented iApps are common for the iPhone, applications for the commercial market are fairly unique. "For a manufacturing company to do this is pretty remarkable," said Tim Courtney, director of marketing and brand strategy for KeyLimeTie, which developed the Save H₂O iApp for Sloan.



THE NEW T-H2
Quality | Service | Reliability
2nd Generation High Efficiency Tankless

T-H2DV / T-H2OS

PVC Venting
0" Clearance
Easy-Link 4 Units
Super High Efficiency

W W W . T A K A G I . C O M
8 8 8 . 8 8 2 . 5 2 4 4

Circle 15 on Reader Reply Card

When it comes to air in system water,
no matter how far your problems stretch
our solutions stretch farther.



Air in heating or cooling system water can create serious problems

— corrosion, accelerated wear, inefficiency, noise, poorly heated or cooled rooms, and on-going complaints.

Spirotherm makes air problems a thing of the past. Our Spirovent® Microbubble™ Separators, with the patented Spirotube® core, **completely eliminate 100% of the free air, 100% of the entrained air, and up to 99.6% of the dissolved air in the system.**

*** Broadest selection in the industry**

Threaded — Sweat — Vertical — Sizes through 2" — Solar models available

*** Proven Performance with millions installed worldwide**

Stocked by the best wholesalers; installed by quality contractors.

*** Designed and engineered for unsurpassed efficiency**

Patented "Dry" vent head — Patented coalescing medium
20 year warranty

*** *The first, and still the best.***

SPIROTHERM

A SPIRO ENTERPRISES COMPANY

Spirotherm, Inc.

25 N. Brandon Drive

Glendale Heights, IL 60139

800.323.5264

www.spirotherm.com

info@spirotherm.com

Circle 16 on Reader Reply Card



BY DAN HOLOHAN
contributing writer

Meet Bill Henry

The first time I saw a Spirovent air separator in action was at a plumbing supply house in Brooklyn, New York. It was set up with see-through piping and I got to use a bicycle pump to inject air into the moving water. I stood there for a while, pumping away. The Spirovent caught the air and spit it out. It was fun, but then, I'm easily amused.

The salesman smiled at me and told me about microbubbles (a new term for me), and how they would collide with and adhere to the inner workings of the Spirovent, and then leave by way of the vent. He also mentioned Henry's Law, which was something I had never heard of at the time, but I nodded with great respect nonetheless. Didn't want to look dumb.

When I got back home, I looked up Henry's Law in the dictionary and learned that it had to do with the way a gas will dissolve in a liquid, depending on pressure. It turns out the more pressure you put on a liquid, the more gas it will hold in solution. Vice versa, of course. Oh, and the hotter water gets the less air it will hold in solution (and vice versa). I sort of knew all of that by watching water boil and soda pop open, but I had never put a name to it. Now I knew.

And that got me thinking a lot about club soda. I had written a book called *Pumping Away* and I needed a simple visual that would show what happens to dissolved gas when you lower the pressure on the water. Club soda fit the bill. I started taking a bottle of that fizzy stuff with me whenever I left home to do a seminar. Shaking a bottle of club soda and popping the top is a marvelous way of demonstrating Henry's Law to a group of contractors, and one they will long remember. Well, at least the ones in the front row will remember.

I did this for years (still do) but I never gave much thought to who the Henry of Henry's Law was, so one day I decided to look into that. I did this because I am curious by nature, and because I have too much time on my hands. Here's what I learned.

Bill Henry's daddy, Tom, was a rich doctor who also owned an industrial chemical business in Manchester, England in the late 1700s. (Try putting those two professions together nowadays. You could probably make your own patients.) Tom Henry was the first guy to suggest that you could bleach clothing with chlorine. How about that? Isn't it good to know that Clorox and the proper location of hydronic air separators have their roots within the same family?

Anyway, Little Billy showed up just before Christmas in 1774 and all went well until he reached the age of 10. That's when a beam fell from the ceiling, landed right on him, and left him with chronic pain for the rest of his life. Because of this, he wasn't able to play with the other kids so stayed inside and hit the books. He hit them hard.

At 16, he began studying medicine, and at 21 he entered the University of Edinburgh in Scotland, but only stayed a year. He left the university to help his father with his medical practice and to work in the family business. He spent the next 10 years doing original research in chemistry, which plays a big part in this story. And then, because he didn't like to leave things undone, he returned to medical school at 31 and got his medical degree two years later. Oh, and he did his dissertation on, of all things, uric acid (a.k.a. pee), which I think is splendid because it ties Bill Henry even closer to the business of plumbing and heating.

Now, we are all influenced by those who came before,

and Bill Henry was no different. A generation earlier there had been a fellow in France by the name of Antoine Lavoisier. Heard of him? He was the guy who first said that matter can neither be created nor destroyed, and he

John Dalton and Bill Henry are the guys who gave us H₂O. Think about that the next time you're purging those pipes.

also gave names to two things that are pretty important – those being oxygen and hydrogen. Lavoisier also came up with the first extensive list of elements, and helped create the metric system.

So there. What have you done today?

And you would think that the French would have appreciated all of this, but at the height of the French Revolution, someone accused Antoine Lavoisier of selling watered-down tobacco, so they chopped off his head. Smoke 'em if you got 'em.

Bill Henry was fascinated by Lavoisier's work, and in 1801, while still working with his dad, he put together a book about it, and he did a fine job of explaining it all. He called the book *Elements of Experimental Chemistry*, and this went through 11 editions over the next 30 years. He kept adding to it, and it was this work that introduced generations of chemists to the Frenchman's careful use of experimental measurement. Bill Henry was just 27 years old when wrote that book, and two years later he published the paper that established what we now call Henry's Law. Years and years after that, I'm in some plumbing supply house in Brooklyn and an air-separator salesman is bringing it to my attention.

Ain't life grand?

And how about this? Henry's Law came about because Bill Henry was sitting around wondering why our atmosphere, which is composed of all these different gases, each with its own density, doesn't separate into layers like oil and water. I've never wondered about that. Have you? I mean I've gone through 60 years of life without once considering that. Gosh.

It was Bill Henry's initial thinking about our mixed-up atmosphere that led to the theory of mixed gases, which we today credit mostly to Bill's pal, John Dalton.

I have to tell you about him. You've probably never heard of him. I hadn't. He's the guy who figured out that atoms make up everything. These two guys were hanging out together. One's figuring out atoms and the other's wondering why all the atmosphere doesn't look like a seven-layer cake. They're buds.

And Dalton was brilliant but he was also clumsy and careless around the lab. Oh, and he had very little money for experimenting (he was a teacher). His buddy, Bill, had lots of money, though, and even more patience, so the two men worked together like salt and pepper.

They did most of their experiments with gases because gases are chemically simpler than other forms of matter, and when you're looking for atoms, this helps. Out of all this experimenting came Henry's Law.

Think about that the next time you're installing an air separator, or wondering why the air keeps coming of that compression tank.

So John Dalton goes on to become famous for the atomic theory, which is very cool because suddenly, the world could identify and order elements. From this comes

(Turn to Meet Bill Henry page 20.)

Bill Henry...published the paper that established what we now call Henry's Law [at age 29]. Years and years after that, I'm in some plumbing supply house in Brooklyn and an air-separator salesman is bringing it to my attention.

**Quality Comfort
Added Peace of Mind**

Introducing The New Dunkirk **PWXL** Gas-Fired Hot Water Boiler

Advanced controls and safety features benefit both contractors and customers.



Easy-to-read LED Display constantly monitors water temperature and features four status lights for Power, High Limit, T-Stat and Low Water.

Advantages for the contractor

- Digital display offers at-a-glance diagnostics
- Time saving, factory-installed combination aquastat and LWCO – no need to pipe or wire in the field
- Integrated control with molex connections requires no programming – dial high and low limit differentials with a common screwdriver
- Complies with state codes requiring a low water cut off
- Convenient terminal strip for thermostat connections
- 100% factory tested in a low water condition for reliability

Dunkirk®
America's Hottest Boiler Value!

85 Middle Road, Dunkirk, New York 14048
Phone: 716-366-5500 • Fax: 716-366-1209
Email: heating@dunkirk.com • Web: www.dunkirk.com



Gas & Oil-Fired Hot Water & Steam Boilers / Electric Boilers / Hydronic Controls / Indirect-Fired Water Heaters / Gas and Oil-Fired Furnaces / Ductless Mini-Split Air-Conditioning Systems / VPAC's & VPHP's / Replacement PTAC Chassis

www.ecrinternational.com

Circle 17 on Reader Reply Card

THE WALL

Motor hot spot?

Q: My sister called me after having a very expensive service call. She has a Burnham LE with a Beckett. She read the invoice to me. On it was this long list of new parts. On it, was a new motor for the Beckett. They said the motor had a hot spot. What is that? That long list of parts, I got an idea what that is!

— *Bill*

A: While I have never labeled this problem as such, motors convert current into mechanical movement & give off heat. Too much can cause hot spots due to tight bearings, insulation of winding break down, poor electric connections. I would simply put motor replaced due to overheating caused by (specific problem). I also would have performed a combustion test and adjusted for peak operation efficiency since this affects the combustion. I would have written amp, volt readings for the motor and smoke spot, draft overfire and flue draft, stack temp and CO₂ ratings for the combustion and listed the end efficiency burn rate which should be around ±80% due to the design and conditions.

— *Lance*

Another buffer tank question

Q: Does a buffer tank need to be insulated? And, can a large enough “open-type” (not bladder) steel expansion tank be used or this? Seems to me it will do the same thing. Actually, in the old days, didn't they call a similar type tank “range boilers”? Besides a cosmetic covering, please enlighten me to the difference between the two.

— *Dave*

A: There are some things you are looking for in the buffer tank setup:

1. Tapping sizes so that you can fully utilize the output of the boiler, i.e., 80,000 BTU=1" tapping for boiler side, 120,000= 1 1/4" etc. so you achieve maximum boiler flow without much of a pressure drop.

2. Same thing for the demand

side, your total flow is allowed by the tank tappings.

3. Run time: to have the tank capacity match your desired boiler run time, 3 -5-10 minutes?

4. Insulation: unless standby loss is okay (Hot Rod says, “An uninsulated buffer is really a radiator in the round. Unless you need the heat where the tank is located better insulate it.”

5. Ability to create a temperature differential in the tank by the tank height and tapping's placement.

Looking at the above, a steel expansion tank will fall short. If you could use a 42-gal. galvanized well tank and create tappings and insulation, maybe a start.

— *KBP&H*

A: Four large taps high and low across from one another give you nice flow and a hydro separator device, all in one. Throw an air vent on top also. Many tanks have a domed tank, a great place to collect and vent air. I can't imagine installing less than 40 gallons of buffer if you are going through the time and trouble to buffer. Less capacity than that it starts to look more like an expansion tank.

— *Hot Rod*

Mixing radiant w/old cast iron system

Q: I'd like to put in an entirely new system in an old house. I'd like to keep all the radiators and the excellently fitted old iron pipe while dropping in a new cast-iron boiler and two new thin-slab radiant zones. I have done the heat loss cales, laid out the PEX, pressure tested, fitted slab sensors (Tekmar) and laid the dry bed. Now I'm selecting products to do the controls. I'm set on a traditional Weil-McLain gold series boiler, but the rest is flexible. I'd like to come up with a simple combination of controls to handle these 3 zones:

1 Large cast iron radiant zone.

2 Barrier PEX radiant slabs.

I was considering using set point thermostats in each of the slab

zones, a programable thermostat in the main cast-iron zone. I've built one copper and one steel system in the past, but have never used PEX. I'm familiar with Taco and Tekmar controls. My main concerns are coming up with a system with minimal components that can safely reduce the temperature of the cast-iron boiler for the PEX, protect the boiler from cold returns and ensure even supply of water when needed to all 3 zones. In the past I have used primary/secondary piping, but with the PEX I'm not really sure how it's going to look.

— *Fatty*

A: I would use a simple boiler reset control w/DHW capability like a Honeywell Aquatrol or Tekmar equivalent. For the radiant I would look at using a Taco radiant mixing block. The RMB will give you boiler protection and you can zone both radiant zones off it. It will make a real simple system and give you both the reset for the boiler (cast iron zone) and lower water temp for the radiant. If you really want to get some deep reset, run primary/secondary and use two Taco RMBs.

— *radiantwizard*

Add radiant zone to home run system

Q: I have a single zone mod/con system with 1/2" PEX home runs from cast iron rads to radiant manifolds at boiler. The radiator in bathroom (10x7) is being removed and a light-weight pour is going over 1/2" PEX in floor. I am trying to connect the tubing that is already at the bathroom and the boiler room to my system, I do need to run lower temps to my floor so mixing is a must while also keeping this as simple as possible. Ideally this would operate at the same time as my main zone so not to include any thermostat or pumps. Is there a way to use my existing system pump and takeoffs from the manifolds to move water through a mixing valve without running an extra pump? Boiler is set up primary

secondary so two pumps always run.

— *Kevin*

A: Try the Oventrop UniBox. It is designed to take high temps and make a radiant mix temp without additional piping, mixing valve or pump. Simply connect the radiator supply and return to the RFH zone and pipe the return through the Uni-Box, per instructions. There is no easier or less expensive method to install a RFH zone where radiators are the prime heat emitter.

— *Paul*

BUT: The Unibox is a mixing device? I thought it modulated flow only?

— *Rob*

A: Absolutely not! There is no way. You must treat this as an additional zone. Like you said. You understand that you have to mix the water temp down. Once you mix you have to have some way to get the water after the mix through the floor. Best bet is just add the additional zone. Who's mod/con? Does this boiler have the ability to run a second heating curve with a modulating mixing valve or injection pump? Why do you not want to run an extra zone? Is your budget an issue?

— *radiantwizard*

A: Why not add just add a floor sensor and zone valve? Wouldn't the floor sensor control the correct floor temperature for the load?

— *Big Ed*

A: Or a suspended tube application like Ultra Fin. This method suspends the tube below the subfloor and uses the higher temperature without actually touching the tube to the floor. It's not a bad way to go for a small area retrofit. If you can get below the space, of course.

— *Hot Rod*

A: For such a small area have you considered an in-floor, electric system? While intended for floor warming, not heating, they can, and do, work for heating. Use a controller that senses floor temperature.

— *Mike T*

Holoohan

(Continued from page 18.)

the Periodic Table of the Elements, something you probably had to study in school at some point. Ugh.

John Dalton and Bill Henry are the guys who gave us H₂O. Think about that the next time you're purging those pipes.

And how's for being wonderfully human? Although Bill Henry's experimenting helped John Dalton come up with atomic theory, Bill didn't

want to back it. As he got older, he became more reluctant to accept change. He didn't like it when his experiments pointed to something other than what he expected. He held to his old beliefs, such as insisting that heat has mass (it doesn't).

In 1824, a series of unsuccessful surgeries on his hands took away his ability to manipulate instruments. He quit chemistry and turned his full attention to medicine, specifically to the spread of contagious diseases.

In 1831, a cholera epidemic hit

the United Kingdom and it was horrible. Nowadays, we know that the way to prevent the spread of cholera is to wash our dirty clothing in real hot water and chlorine bleach, which Bill's father, Tom, had promoted years earlier, but they didn't try chlorine then. Rather, Bill came up with an inexpensive and simple device that used heat to disinfect clothing. It worked and it probably would have saved countless lives, but for some reason, Bill Henry decided that he didn't like the idea of

the device, so he abandoned it. Thirty years later, Louis Pasteur came up with the germ theory of disease and we all began to pasteurize things with heat. Thirty years later.

In 1836, chronically depressed and filled with the pain that been with him since that long-ago childhood accident, Bill Henry took his own life.

And I hope you'll never look at those air separators and compression tanks in quite the same way ever again. ■



Fire Safety



Radiant Heating



PEX Plumbing



Our goal: No contractor left behind.

And to date, we've trained 100,000 trade professionals on the advanced systems in today's homes. Now it's your turn. Join us in our new North American Training Center, where you'll get hands-on training in the latest plumbing, fire safety, and radiant heating and cooling technologies.

Uponor is committed to helping you build your expertise – and your bottom line.

*To learn more, visit www.uponor-usa.com/training.

Register Today

Sign up for training
and receive a
free tool*

uponor

Formerly Wirsbo

Radiant Design & Application

Plumbing/Fire Sprinklers

Controls

Geothermal

Energy Transport Piping

Circle 18 on Reader Reply Card

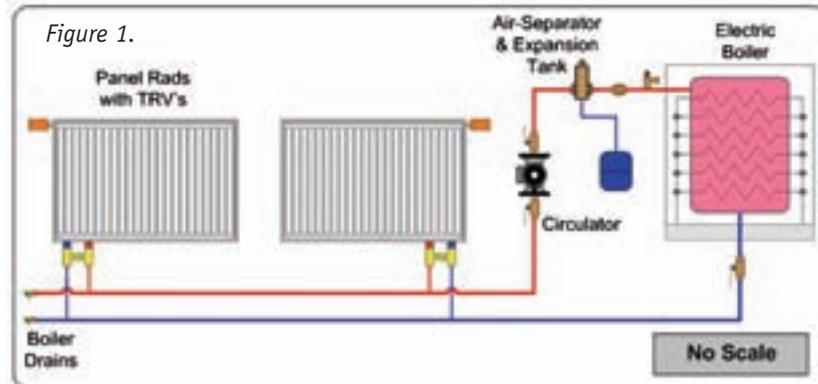


BY PAUL ROHRS
contributing writer

Simple systems

The process contractors go through to procure and complete a large job can be very gratifying. You design the system, write the proposal, land the job, install it, commission the system, and deposit the check that keeps your bottom line in the black. These jobs can range from boiler change-outs on commercial projects, to full-blown radiant floor heat systems in Mega McMansions.

While I enjoy landing, designing, and installing the sys-



tems for McMansions, I also love the small simple systems. I piped a system the other day and after completing it, I stood back and realized how much I really enjoyed the simplicity of it. This system was for a small 19x19 garage that was going to be used as a woodworking shop. The owner needed a very small but responsive system and the primary issue was budget. It was an existing garage with concrete floors. There was going to be quite a bit of equipment filling this shop and each piece of woodworking equipment would be movable so that the owner could bring out a piece of equipment, use it, and return it to its resting place. With woodworking equipment lining the perimeter of this shop, it was clear that the required 30-plus feet of baseboard was not going to be a practical design feature. In-floor heat was going to be a budget breaker because that would require saw cutting out the old concrete, installing the tubing and pouring it back. The homeowner also did not want forced air heat or any heat source with an open flame as a potential ignition source as he would be using stains and varnishes in the finishing process.

The owner's intention was to keep the shop at 62°F during the workday, and then set it back to 52°F at night. This also then dictated a system requiring a fairly quick response time. With design conditions at -4°F, and want-



Figure 3.

ing to run the lowest temps possible so as not to penalize the owner with high fuel bills, it steered the equipment selection to a small electric boiler and the largest panel radiators available without wrecking the budget. The plan also included no make-up water or fill-valve. This was to be a stand-alone system that if water needed to be added, it would have to be done manually.

Figure 1 illustrates the basics of the system. The low-pressure drop through the boiler and the panel rads allowed me to install a single pump to service the system. We are still pumping away from the point-of-no-pressure-change directly into the panel radiators. Figure 2 shows the electronics of the system. While the boiler had the potential to run the system pump and thermostat, I like to electrically separate components with an inexpensive single pump relay and just use the pump relay end-switch for a simple signal for boiler heat. Trouble-shooting this system will always be simple. The thermostat calls

for heat, the pump relay engages the pump and the pump relay end-switch calls for heat to the boiler thermostat terminals. Then the boiler's internal controls check the outdoor temperature, and set a target temp. The boiler then feeds electricity to the elements until the target temper-

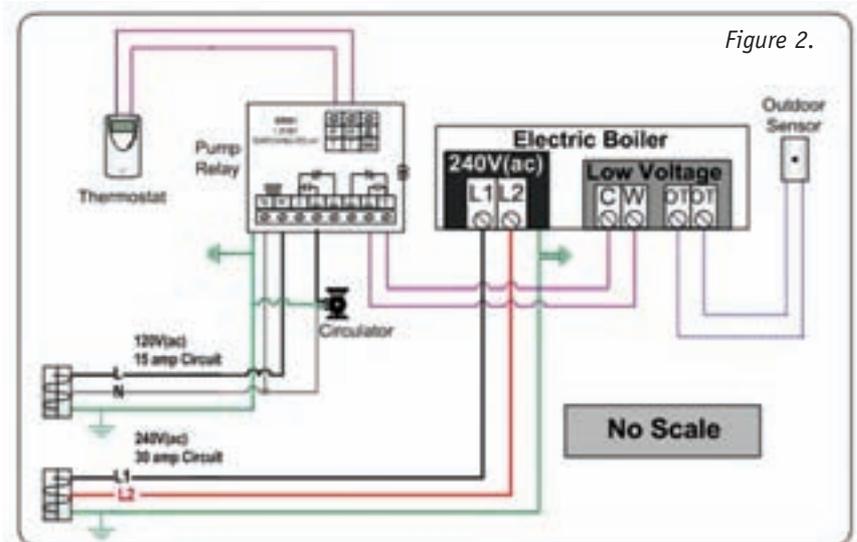


Figure 2.

ature is met or the thermostat is satisfied.

Figure 3 is a picture of the newly commissioned system. There is still some final insulation to install, but this system is ready to go. As convective airflow over the panel radiators is key for proper heating, the owner will have to get into the habit of shop vacuuming out the panel radiators and using a brush (when necessary) if excessive sawdust is generated.

This system was a bit of a departure for me in that I am so used to installing tubing and having a high mass system with large amounts of comfort and a slow, but even response time. This system's small water content (approximately six gallons) really illustrated to me how responsive low mass radiant can be. When the thermostat satisfied at 62°F and ended the call for heat, the panel radiators continued to emit heat and sustain a long off time much like a radiant floor heat system.

Install time was about 10 hours and only took a few minutes to purge and fill. The small amount of install time was directly related to: 1.) The amount of piping between (Turn to Radiant insider, page 26.)

This system's small water content really illustrated to me how responsive low mass radiant can be. When the thermostat satisfied at 62°F and ended the call for heat, the panel radiators continued to emit heat and sustain a long off time much like a radiant floor heat system.



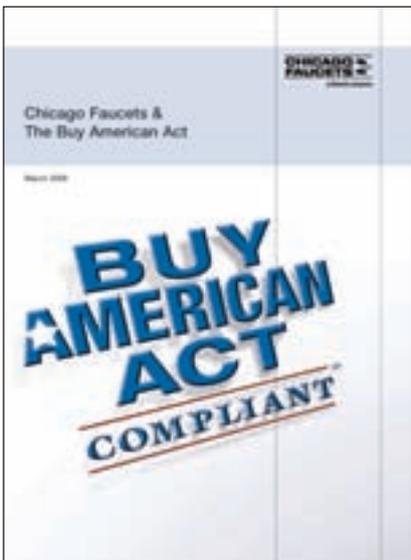
a Geberit company



Antimicrobial Handles from Chicago Faucets

When you install antimicrobial handles from Chicago Faucets, you benefit from Sureshield® Antimicrobial Technology; a process that provides a consistent release of antimicrobial compounds regardless of the amount of moisture present. An easy retrofit for existing products, and a versatile option for new installations, Chicago Faucets antimicrobial handles are designed for prevention and provide an easy way to add a new level of protection to a facility.

Circle 52 on Reader Reply Card



Chicago Faucets & The Buy American Act

The American Recovery and Reinvestment Act recently signed into law includes a Buy American provision favoring domestic sources. Selecting products that meet the requirements of this Act can help support jobs across the USA and assist in our economic recovery. Over 95% of Chicago Faucets products, more than 1,700 items, meet these requirements. Chicago Faucets... unwavering commitment to quality, backed by know-how and determination that is uniquely American.

Circle 53 on Reader Reply Card

ECAST™ Products from Chicago Faucets



ECAST, from Chicago Faucets, is the line of durable, high-quality brass faucets that are designed and manufactured with less than one quarter of one percent (0.25%) total lead content by weighted average. These products are intended for installation where state laws and local codes mandate lead content levels or where lead content is a concern.

Visit ecast.chicagofaucets.com for more information.

Circle 50 on Reader Reply Card



The Most Reliable Electronic Faucet You Can Buy

The HyTronic™ from Chicago Faucets has been built and tested with one goal in mind: to be the most reliable electronic faucet on the market. Water tight electronics and vandal resistant features, combined with a long-life lithium battery, ensure reliable performance for years to come. For a free HyTronic Product Kit with demonstration CD, call 800/323-5060 or circle the number below on the reader service card.

Circle 51 on Reader Reply Card

value redefined.

E-Tronic™ 40

420-CP

New products, new solutions and a whole new level of value.

Value is being redefined with two new options for your lavatory installation from the leading name in commercial faucets - Chicago Faucets. Our new electronic and single handle lavatory faucets provide a durable, dependable option to locations where commercial needs or specific codes must be met. They are an ideal choice for public restrooms in restaurants, gas stations, healthcare facilities, shopping centers, retail and more.

These new products are designed and manufactured to the high quality standards that have made Chicago Faucets the top choice at commercial and institutional locations throughout the world. Now, you can bring Chicago Faucets quality, style and performance to any restroom.

For a free lavatory brochure, please call 800/323-5060 or circle the number below on the reader service card.

CHICAGO FAUCETS
a Geberit company
www.chicagofaucets.com
800-323-5060

Circle 19 on Reader Reply Card



BY ELLEN ROHR
contributing writer

Only three ways

(The names have not been changed and this story is mostly true.)

and Woodward reported it on the front pages. But the company was in financial trouble.

Warren Buffet's business building strategy is this: Seek out companies with undervalued, underutilized assets. Buy them. Fix them. Make lots of money.

He bought the *Washington Post* with that intention. He and Katharine hit it off immediately and he saw the potential in the newspaper and in her management. So he sat her down and taught her business basics. From what I have read about this powerhouse relationship in their biographies, they had a conversation something like this:

Warren: This is the Balance Sheet. Assets on the left, liabilities and equity on the right.

The Balance Sheet reflects the financial condition of the company on

a specific date. The basic accounting formula is the basis for the Balance Sheet:

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$$

ASSETS: The "stuff" the company owns. Anything of value — cash, accounts receivable, trucks, inventory, land.

LIABILITIES: These are sources of assets — how you got the "stuff." These are claims against assets by someone other than the owner. This is a reflection of what the company owes. Notes payable, taxes payable and loans are liabilities.

EQUITY: Equity includes funds that have been supplied to the company to get the "stuff." Equity also reflects ownership of the assets earned through profitability. Equity shows ownership of the assets or

The Balance Sheet is an elegant demonstration of a universal law: for every action there is a reaction. Energy isn't lost; it changes form. Isn't this beautiful? Isn't this fun?

claims against the assets, a reflection of what the company owns.

As a business owner, Job One is to protect the assets. Job Two is to grow the assets. There are only three ways to grow assets"

1: Borrow money.

You could borrow money; assets go up and a Note Payable (a liability) goes up.

2: Invest money in the Company.

When you (or another owner/investor) puts money in the company, assets go up and Paid-In Capital (an equity account) goes up.

3: Create a Profit

When you sell stuff for more than it costs, you'll create a profit. Net Profit is reflected in the equity section of the Balance Sheet. If Net Profit (an equity account) goes up, assets go up, too. This is really the best way to increase assets, to create wealth. Sure you have to pay taxes on your profits, but that's the price you pay to live and work in this fine country. Sometimes investing money in a company can buy time, or equipment, that will help build the profitability of the company.

The Balance Sheet is an elegant demonstration of a universal law: for every action there is a reaction. Energy isn't lost; it changes form. Isn't this beautiful? Isn't this fun?

Katharine: It is! I get it. Let's make some money and make a positive impact on the world!

I like to imagine the conversation between Warren and Katharine this way. Warren Buffet loves business and capitalism and his enthusiasm is contagious. You can manufacture money out of nothing by creating something other people value. You can take a struggling company and fix it. It's a beautiful thing.

If you are scratching your head right now, it could be that you don't get the Balance Sheet. Or maybe your Balance Sheet isn't quite so elegant at the moment. Too much lia-

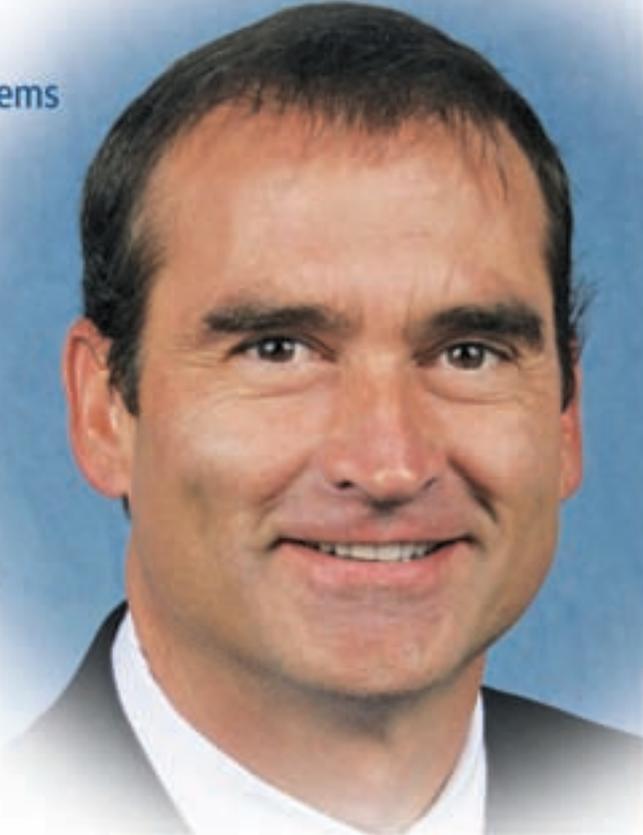
(Turn to Balance in... page 32.)

RAPID Results.

GUIDED BY:
Experienced Coaches • Surefire Systems
Incredible Peer Connections

"As a result of implementing Nexstar's proven systems and working with their coaches, we have grown our revenues to over \$5 million, in spite of the economy."

BOB HAMILTON
Nexstar member since 2003
Owner of Bob Hamilton Plumbing,
Heating & A/C

Call 800-655-9896 • info@nexstarnetwork.com
www.nexstarnetwork.com

Circle 20 on Reader Reply Card

navien

Condensing 98%



Tankless Gas Water Heaters

QUALIFIES FOR FEDERAL TAX CREDIT
Save 30% of the cost,
up to \$1,500!

The Ultimate in Energy Efficiency with Hi-Tech Comfort

- Easy installation and PVC venting
- 3" SCH 40 solid PVC up to 100'
- Industry's highest energy efficiency rating - 98%
- Ready Link® Cascade System
- Optional built-in recirculation system with buffer tank
- Advanced Eco Navien technology
- Extended lifecycle utilizing dual stainless steel heat exchangers
- Advanced remote control - NR-10DU
- Industry's best warranty!

Remote controller
NR-10DU



⁷-CREATOR
KD navien Navien America Inc.



www.navien.com

www.navienamerica.com

Toll Free: **1-800-519-8794**

Circle 21 on Reader Reply Card



BY BRISTOL STICKNEY
contributing writer

Review of SRCC & OG-300

OG-300 solar water heater system comparisons

Solar water heater (SHW) systems are the low hanging fruit for designers, installers and building owners who want to deploy solar heating equipment. Virtually every occupied building has a water heater, and this hot water is needed all year round not just in winter. Solar water heater systems tend to be small and therefore more affordable and easier to install than space heating systems. So anyone who is attracted to solar heating can potentially start small by installing a solar water heater.

Packaged solar water heater systems are becoming more commonplace and more standardized, which makes specification and installation faster and easier as well. It stands to reason that increasing numbers of packaged systems will be installed in the future as solar water heating becomes more commonplace.

When choosing a SHW system, it is a good idea to compare one to another to be sure that when installed, it will meet the needs of the user. In the U.S., the effort to compare solar water heating systems in a standardized way is being led by the SRCC (Solar Rating and Certification Corporation) using a method they call OG-300. I introduced the SRCC and OG-300 water heater test standards in earlier articles in the spring of 2009. See the web archives at *Plumbing Engineer* and *Phc News* magazines for copies of these articles.

Since that time, the SRCC website has improved with searchable test results and performance comparisons for various city locations. Their ratings and comparisons used to be presented as PDF publications with long tables of data, but now, it is more interactive with system types and city locations chosen by the user.

When viewing the results, the solar water heaters are labeled according to their “system type” using the following shorthand:

DF= Direct Forced; IF= Indirect Forced; IT= Indirect Thermosyphon; DI= Direct Integral

(These are the types I look up most often. Others are also available as well.)

Also, while we are clarifying the SRCC shorthand:

OG= Operating Guidelines; Q= Energy; EF= Energy Factor; SEF= Solar Energy Factor (SEF)

Qsolar= (Annual) Solar Savings is presented in KiloWatt Hours (kWhr) when compared to conventional Electric water heaters and Therms when compared to Gas.

SF= (Annual) Solar Fraction is presented for various city locations as a Decimal value.

(e.g. 0.65 means 65% of the annual hot water load provided by solar.)

The fact that a SHW system has been certified by the OG-300 test is in itself a testament that the components and construction of the system comply with certain standards of safety, performance and durability that are part of the testing and inspection procedure. Each SHW system that is listed by the SRCC is presented with a one-line piping diagram, and the study of these piping diagrams alone can be a worthwhile education for anyone interested in the proper placement of collectors, storage tanks, pumps, heat exchangers, valves and other components in a large variety of configurations.

The SEF rating

SRCC uses the Solar Energy Factor (SEF) as its primary

performance rating for solar domestic water heating systems. The SEF is defined as the energy delivered by the system (as useful hot water) divided by the electrical or gas energy put into the system. And while this rating is modeled after the Energy Factor (EF) used by the gas water heater industry, it more closely resembles a Coefficient of Performance (COP) used to rate refrigeration heat pumps where the value is generally always greater than one. It is calculated using the formula:

$$SEF = Q_{del} / (Q_{aux} + Q_{par})$$

Where:

Q_{del} = Energy delivered to the hot water load: Using the SRCC rating conditions, this value is 41,045 Btu/day. This is a reasonable amount of hot water heat for a residential application when about 64.3 gallons are provided by a conventional water heater each day. A 50-gallon conventional water heater tank, for example, could provide this amount of hot water easily under these test conditions.

Q_{aux} = Daily amount of energy used by the auxiliary water heater or backup element with a solar system operating, (Btu/day). To convert to kWh, divide this value by 3,412. To convert to therms, divide this value by 100,000.

Q_{par} = Parasitic energy: Daily amounts of AC electrical energy used to power pumps, controllers, shutters, trackers, or any other item needed to operate the SHW system, (Btu/day). To convert to kWh, divide this value by 3,412.

Using this rating method, there is a direct relationship between solar collector size and SEF test results. The bigger the collectors, the larger the SEF rating value will be. Also, the highest possible rating on the SEF scale would be a system that has no Q_{aux} and no Q_{par}. In other words divide Q_{del} by zero. This can occur when a solar water heater provides 100% solar heat to the heating load, using 100% solar electric pumps and controls requiring no conventional energy. There are some test results that, indeed, show SEF values as high as 999.9 (which imply a SEF rating of infinity)! This indicates that the solar water heater is much larger than it needs to be to provide the heat required from a 50-gallon conventional water heater under these standard test conditions. But a rating of infinity is off the scale, and so does not clearly indicate the magnitude of the oversizing.

SEF rating and its limitations

The SEF rating is defined as a comparison of any solar water heater to an equivalent 50-gallon conventional water heater that consumes 41,045 Btus per day (where most of the hot water is used during the sunny part of the day). For a quick comparison of a conventional residential water heater replacement in this size range, the SEF can be useful. For example, if one 65 gallon SHW system is rated at SEF=2 and another is rated at SEF=4 then you may assume that the second system will provide a greater solar contribution than the first.

As a general rule, when using SEF, it is best to compare solar water heaters of the same size in the same location. The SEF rating tends to reward solar component size. As a single rating, SEF tends to promote large collectors with large tanks, rewarding them with higher rating values (Turn to SRCC, OG-300... page 28.)

Packaged solar water heater systems are becoming more commonplace and more standardized, which makes specification and installation faster and easier as well. It stands to reason that increasing numbers of packaged systems will be installed in the future as solar water heating becomes more commonplace.

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.

Our engineers strive to incorporate product features targeting ease of installation. Less time at the job site translates into labor savings and superior value for our customers.

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.

Hot Water Storage / Booster Tanks

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.



Indirect Water Heaters

Hot Water Storage/
Booster Tanks

Dual Coil Indirect
Water Heater

Try us and see...

Ph. 508-422-9880 | Fax 508-422-9881
sales@heat-flo.com | www.heat-flo.com



Circle 22 on Reader Reply Card

Is Social Networking in your business future?

JOHN HAZEN WHITE, JR.
President & CEO, Taco Inc.



Like just about everyone else in business today, contractors should be getting acquainted with the likes of Facebook, LinkedIn, Twitter and other forms of what's known collectively as Social Media. Why do I say that? We've all heard of them by now, and maybe I'm not the first person to suggest to you that they could play a positive role in your business, should you begin to pay attention and learn how to participate in them. On the flip side, ignoring their marketing potential could be a disservice to growing your business in the years ahead.

Social Media is abuzz these days because it is reaching critical mass. More people are participating and more sites are cropping up. Mass media have embraced Social Media, which has brought it into the mainstream. Now businesses, large and small, are beginning to paying attention. We can compare the rise of Social Media today to the development and mass commercialization of the Internet a decade ago. At that time companies felt compelled to develop their own company website even as they were feeling their way along in terms of its utility to them. It didn't take very long for mom n' pop businesses to catch the Internet bug and have an online presence, even if it was only for show, to say we're here too. Doing business online soon followed, and that changed everything.

Do you remember when folks joined chat groups at sites like AOL? Well, that was the earliest form of online social networking, allowing likeminded people to converse with each other. If you go to Dan Holohan's The Wall at www.heatinghelp.com, you are visiting a social networking site – contracting professionals engaging with one another on topics of common interest. Social Media networking sites allow everyone to have their own version of The Wall.

“With Social Media you can be the star of your own show. That's one of its great appeals.”

You have certainly heard of Facebook, and perhaps you have been invited to join and link up with other contractors and people involved in the HVAC industry. You can easily set up your own Facebook page and engage in a dialogue with an ever expanding group of individuals. You can set up a photo gallery and show photos of your family, your cars and trucks, your pets, and the jobs you're proud to share with other contractors. You can link to industry sites and expand your online presence and linkages. Even more enterprisingly, you (or your more tech savvy kids) can place video on your Facebook page. With Social Media you can be the star of your own show. That's one of its great appeals.

So how can Social Media networking advance your business? As I mentioned above, when the Internet went mainstream companies and individuals wondered what use a website could have for them. Few people glimpsed its full potential. Because the Internet's growth was organic in nature – a combination of advancing technology wedded to constant experimentation – it was impossible to know just how important and universal the Internet was to become to all of us. I think the same potential is there with the future of Social Media. Even the biggest companies right now are trying to assess how they can do business using Social Media. Contractors should do the same. Social Media websites provide a brand new forum for outreach with fellow contractors and prospects, with industry groups, and who knows who else. It's all out there waiting for you. Give it a try in 2010.

Circle 23 on Reader Reply Card

SRCC, OG-300 explained

(Continued from page 26.)

without regard for cost effectiveness, proper sizing or other considerations. Therefore, the SEF rating when taken by itself, may send the wrong message when comparing a large SHW to a smaller one, or when trying to compare any water heater installation that does not match the standard OG-300 test profile. Keep in mind that the more your local conditions differ from the OG-300 test conditions, the less accurate and meaningful the SEF rating will be.

Other useful comparisons

In the Thermal Performance Rating section of the SRCC Web pages, they explain that the Solar Energy Factor (SEF) can be converted to an equivalent Solar Fraction (SF) using the following formula:

$$SF = 1 - (EF \div SEF)$$

The Energy Factor (EF) for the SRCC standard electric auxiliary tank is 0.9 and for the gas tank is 0.6. The Solar Fraction, as considered here, is the portion of the total conventional hot water heating load (delivered energy and tank standby losses) provided by solar energy.

SEF can also be used to calculate the “solar savings” (Qsolar), again described on the SRCC Web pages. Luckily you do not have to do these calculations yourself, since the SF and the Qsolar can be seen in the Annual Performance listings once you have chosen a SHW system (make or model) and a city location to be displayed.

I prefer looking at comparisons of Qsolar & Solar Fraction since these values are more intuitive for me. These ratings allow a direct comparison of energy savings or percent solar contribution respectively, and those concepts seem somehow more familiar and easier to visualize. For example, using the formula above, a solar fraction (SF) of 99% can be expressed as a solar energy factor (SEF) of “infinity.” Which rating would you rather try to explain to a client? Solar Fraction, right?

What is missing

When comparing one SHW system to another for installation in the “real world,” the bottom line always involves a cost comparison. The cost versus solar fraction or the cost versus energy savings in the same location must be compared before a prudent choice can be made. The SRCC literature includes some discussion about how to use their test results to compare cost effectiveness, but there is no cost information included in any of the system descriptions or test data. Accurate costs can only be obtained from local equipment suppliers, and labor costs can only predicted from local experience. So gathering meaningful cost data is up to you.

Also, there are many new solar water heaters and components entering the market every year, and so there are always new SHW systems missing from the SRCC data base.

This does not necessarily mean that new brands, or new technology should be avoided. It just means they haven't been rated yet, so it is up to you to compare these new solar collectors, tanks, heat exchangers, pumps and controls to other more familiar systems.

Final notes

This has been an abbreviated discussion of information available from the SRCC. This can be studied in depth on their web site at <http://www.solar-rating.org>. Brand names, organizations and manufacturers are mentioned in these articles only to provide examples for illustration and discussion and do not constitute any recommendation or endorsement. ■

Bristol Stickney, partner and technical director at Cedar Mountain Solar Systems in Santa Fe, N.M., has been designing, manufacturing, engineering, 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 and is involved in training programs for solar heating professionals (visit online at www.cedarmountain-solar.com for more training information.)

Radiant insider

(Continued from page 22.)

the two panel radiators and electric boiler, and 2.) That I didn't have to contend with venting or gas piping. Another benefit to this small system was that my local mechanical codes didn't require me to pull a permit. The local city inspectors inspect for backflow prevention, combustion air and gas piping, none of which were on this project. The licensed electrician on the job took care of his necessary electrical permits.

I would enjoy doing one of these simple systems a week. They are relatively inexpensive and very simple to install, as well as they really can shine a spotlight on the radiant industry to what is available to owners needing inexpensive systems. It reminds me that I started out designing systems like these before graduating to large more complex systems. If you have a large shop with multiple teams, consider these installs for your rookies. It is a simple way to learn the basic tenets of radiant and with a carefully thought out plan; it will leave little room for rookie mistakes. Another benefit of this system was that I spaced this out over a couple of days. It left me time to do service calls, billing, and other proposals. I am not saying that I don't want to continue to land the big jobs, but landing these smaller jobs may provide a little more balance.

These “McMini” systems are a far cry smaller than the McMansions that consume a lot of equipment and man-hours, but these projects are out there and can add to your bottom line, as well as polish the skills of younger workers. These small systems add value in the industry as they can be fine examples of well-done radiant at a budget price. Don't believe me? The Radiant Panel Associations “System Showcase” awards have a separate category for “Simple Systems.” Now what more motivation do you need to go out and secure these fun little projects? Ready, Set, Go! ■

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.

What are you waiting for? Get your hands on a Bobcat.



- High Efficiency—93% AFUE
- Patented, advanced design, large diameter, aluminum tube and plate heat exchanger
- 2 Models, 4:1 Modulation
- 30,000 to 120,000 Btuh input and 50,000 to 200,000 Btuh input
- Floor Standing or Wall hung
- Natural or LP Gas
- PVC, CPVC or stainless steel for air intake and vent pipe—up to 100' equivalent length
- Self cleaning, no maintenance required
- Quiet operation
- Environmentally friendly—Low NO_x
- 12 year limited warranty and 5 year parts and labor warranty
- Built-in digital control board with outdoor reset included

Slant/Fin.

The next generation of hydronic heating

www.slantfin.com

Circle 24 on Reader Reply Card



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

Think before choosing your profit margin

Numbers don't lie or make mistakes. Humans do! When you lie to yourself, you are not only making a mistake, you are acting foolishly. When you, as a PHC contractor, use selling prices that do not allow you the opportunity to recover your cost of operation and attain the reward you deserve for the value you deliver and the risks associated with the delivery, you are indeed acting in an absurd manner.

Your selling prices are numbers. You and you alone are responsible for the results you get from the numbers you use. You can only establish your selling prices at one of three levels. You can sell your services 1) below your true cost; 2) at your true cost; or 3) above your true cost.

Obviously, options 1 and 2 are for fools. Those options will add stress and frustration to your life. If you choose either option 1 or 2, you will find yourself working longer hours for no additional compensation and missing out on your life while you fool yourself into thinking that's the way this industry is. Additionally, option 1 is foolish because it also subtracts money from your bank account. Neither option 1 nor 2 gives you the opportunity to reap your just reward. Many, if not most, contractors utilize options 1 or 2 because they don't realize they are selling at or below their cost since they do not know how to identify and calculate their true cost, and, take into consideration the factors that affect their cost. Therein is the reason more contractors are miserable rather than happy and content.

Option 3, selling above your true cost, is obviously the only option that gives you a chance to be wise and not to be foolish. However, since there is a difference between selling your services above your estimated cost and selling them far enough above your estimated cost to attain your goal, you must think before choosing your profit margin.

After four decades in the PHC industry, as a PHC contractor since 1978 (and currently) and as a contracting business consultant since 1990 (to date), I have an innate sense that allows me to know when a contractor is fooling him/herself. Unless someone can show me through the correct use of numbers that I am mistaken, I make the following conclusion. Based on the sale of all available hours all the time for all technicians, there is not a single PHC service contractor in the USA with a cost of operation per journeyman/service vehicle of less than \$100.00 per hour. The cost per tech/vehicle hour to many could be much more. In some parts of the country that cost could exceed \$200.00 per tech/vehicle hour.

When I state the word "cost," I mean the cost to the contractor not the customer. The cost of any service to the consumer (the contractor's selling price) should obviously be higher than the cost of that service to the contractor. Since your costs should be calculated on the potential sale of all available hours your profit margin per job will have to be higher than you might think to cover your actual cost and attain the reward you deserve. When all annual potentially available hours are not sold all the time, your true cost of operation per hour as it pertains to any job actually rises.

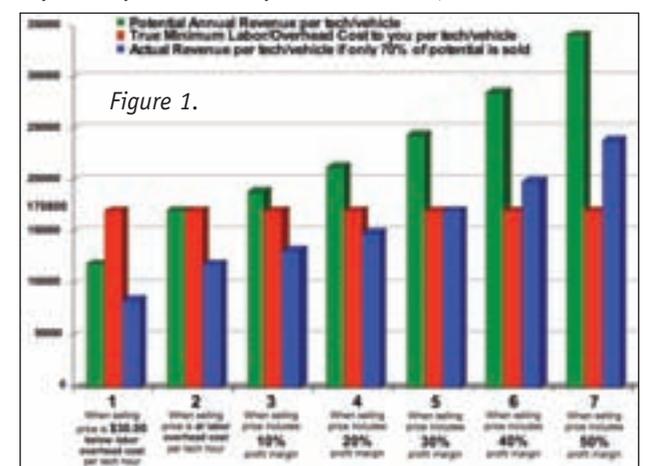
However, for the last two decades, in the process of helping to put many contractors on the path that will give them an opportunity to succeed I have noticed a phenomenon among contractors which actually adds to their frustrations. Many, if not most, sell their service for at least \$30.00 per tech/vehicle hour less than it costs them. That's because they do not correctly calculate their costs. In turn, their potential annual sales per tech/vehicle will be minimally be shortchanged by \$51,240.00 (based on a maximum of 1708 potentially available hours). Ouch!

No wonder there is stress and frustration in the industry. \$51,240.00 per tech/vehicle annually would certainly ease their pain. But, by fudging the numbers, they cheat themselves, their employees, creditors, and/or clientele as they try to make their faulty numbers work. That doesn't decrease stress and frustration. It just exacerbates it.

When you charge the "going broke rate" that many contractors charge in order to compete with the ignoramuses who don't know how to, or choose not to, use correct numbers for fear of losing work, you will wind up buying jobs, partially at your cost, rather than selling your services profitably. You will have to work longer hours with no extra compensation. Your employees can't be compensated in a manner commensurate with their contribution to your business. In turn, this creates the problem of getting and keeping good help. Your creditors must wait to get paid as you borrow from Peter to pay Paul. Your clientele receives mediocre performance rather than the excellence they deserve and which could be provided at correct and properly profitable selling prices. And, everyone's stress and frustration just mounts higher. All because your selling prices were too low because the numbers you used were incorrect.

To show the importance of using correct numbers to arrive at your selling prices and give you some insight as to the proper choice for your profit margin, I have created the chart in figure 1. The numbers used in the chart are based on that aforementioned minimum \$100.00 cost to you per tech/vehicle hour. At a maximum annual 1708 potentially productive hours per tech/vehicle you have an annual estimated cost (to you) of \$170,800.00 per tech/vehicle. Your total cost and cost per tech/vehicle hour may very well be higher.

I have broken the chart into seven scenarios. Based on that minimum cost to you of \$100.00 per tech/vehicle hour, the green bar in the chart indicates your maximum annual potential sales per tech/vehicle for each scenario. The red bar designates your minimum annual cost to operate one tech/service truck, and is at the same level in each of the seven scenarios. That's because you always have that cost, for the most part, regardless of the amount of hours you actually sell. The blue bar shows the actual revenue brought into your business per tech/service truck if you only sell 70% of your available 1,708 hours.



Scenario 1 shows that when you sell your services for less than it really costs you, you can never recover your cost. Duh! You can never make a profit. Double Duh! You actually pay, in part, for the privilege of servicing the public. In this scenario stress and frustration levels are extremely high.

Scenario 2 shows that if you sell at your calculated cost you can only recover your cost if you sell all your available hours. (Turn to *Get the correct numbers*, page 32.)

I have noticed a phenomenon among contractors which actually adds to their frustrations. Many, if not most, sell their service for at least \$30.00 per tech/vehicle hour less than it costs them.

Gen-Eye SD™

Video Pipe Inspection System

Lighter.
Compact.
All-in-one Design.



The Gen-Eye SD™ gives you all the features of a full size video inspection system in a compact, portable package.

With the SD card reader, you can record video or still images – a one GB card records about two hours of video. Keep a copy for your records and make copies for your customers.

In addition to the card reader, the Gen-Eye SD includes an 8" LCD color monitor and a full keyboard with nine pages of memory for on-screen titling.



The fully adjustable docking arm mounts onto a big capacity reel. It's loaded with tough Gel-Rod™ push rod that protects against moisture damage if the rod is cut or abraded. And the color self-leveling camera makes it easier for you and your customers to follow the action. With this easily maneuverable, all-in-one package you're set to troubleshoot 3" to 10" lines. You can even mount the SD onto a mini reel to get down to 2" to 4" lines.

The Gen-Eye SD also includes built-in voice over microphone, on-screen distance counter, date/time stamp, AC and DC power cords, and 512 Hz transmitter for camera location.

General
PIPE CLEANERS

www.drainbrain.com

To learn more or to arrange a free demo,
call the Drain Brains® at 800-245-6200 or 412-771-6300,
or visit www.drainbrain.com/gen-eye.

The toughest tools down the line.™

Circle 25 on Reader Reply Card

© General Wire Spring 2010

Balance in all things

(Continued from page 24.)

ability? Too little in assets? Let's do a little sleuthing and discover what the Balance Sheet has to share. It's helpful to know the Score in the game of business. You can always make it better.

A sample Balance Sheet is shown at the upper right. Suppose this is your company and this is your first year in business. Let's take a look at what this Scorecard tells us about the financial health of the company, particularly when it comes to protecting and growing the assets.

Quick Ratio and Debt-to-Equity Ratio

The *Quick Ratio* is a look at what you have in Cash and Accounts Receivable compared to what you have in Current Liabilities.

1-1110: Cash2,459
1-2100: Accounts Receivable...19,870
Total.....\$22,329
Total Current Liabilities\$35,642
 $22,329 \div 35,642 = .63$

In other words, you have 63 cents for every dollar you need to cover your bills. .63 to 1. Not good. Also, most of that money is tied up in Accounts Receivable. Time to collect! Set a goal of getting this ratio to at least 1.5, or \$1.50 in Cash and Accounts Receivable for every \$1 in Current Liabilities.

The *Debt-to-Equity Ratio* is a look at your Total Liabilities to your Total Equity (chart at right).

For every dollar you have in equity you have \$25 in liabilities. 25 to 1. The amount of debt you carry is up to you, and what you are comfortable with. Consider aiming for a Debt to Equity ratio of 3 to 1. Maybe you would like to be debt free? Know this — the banks and the supply houses are not going to manage this for you unless you stop making your payments.

Gulp. You are operating at a loss, losing wealth and increasing debt. Time to change course. As Hot Rod has told me when I am losing an argument, "When you are digging a hole for yourself, it's a good idea to stop digging."

You could fix this! Like Warren Buffet.

This Balance Sheet is a simple example. (Dear accounting folks, please no nitpicking. My numbers are made up to illustrate common problems.) According to this Balance Sheet, your company is in trouble. You are running out of cash and your assets are dwindling. Profits fix lots of problems — these problems specifically. If you could increase profits by, say, \$10,000 before this month is over, you would see assets go up. If those profits were delivered to the asset of Cash, not Accounts Receivable, even better. You could pay down your Current Liabilities.

$Total Liabilities = 48,142$
 $Total Equity = 1,932$
 $48,142 \div 1,932 = 25$

Your ratios would improve. Life would get better for you. So, craft and execute a plan for improving Marketing, Sales, Operations; whatever you choose that will impact profitability and cash.

Business is easy. As Jim Rohn said, "Easy means something you can do." You can do this.

Into and out of the company

One more thing: Discuss with your CPA how you should reflect the money you put into and take out of your company. Not only will it affect these ratios, your actions have tax implications.

You might put cash into your company and call it a liability, a Note Payable to you. However, Uncle Sam wants to see that loan treated as a real loan, with loan documents, interest paid and payments made. You might take money out of the company and call it an asset, an Account Receivable from you. Uncle Sam might see that and call it income that you haven't paid taxes on. I vote that money into and out of the company by the owner is reflected in the equity section of the Balance Sheet. Then, review quarterly with your

ASSETS \$\$\$

Current Assets

1-1110: Cash2,459
1-2100: Accounts Receivable19,870
1-1800: Inventory12,745

Total Current Assets\$35,074

Fixed Assets

1-2100: Truck - Original Cost18,000
1-3100: Accumulated Depreciation3,000

Total Fixed Assets\$15,000

TOTAL ASSETS\$50,074

LIABILITIES & EQUITY

Current Liabilities

2-1100: Accounts Payable8,654
2.1500: Credit Card26,988

Total Current Liabilities\$35,642

Long Term Liabilities

2-2100: Note Payable — Truck Loan12,500

Total Liabilities\$48,142

Equity

3-1000: Paid-In Capital5,000
3-3500: Net Income3,068

Total Equity\$1,932

TOTAL LIABILITIES & EQUITY\$50,074

CPA to consider your tax exposure and strategy.

The problems are where the game is, where the fun is! Really. Don't panic. Review your financial situation and vow to make it better.

Does this help? I hope so! Questions, comments, challenges? Reach me at contact@barebonesbiz.com
Xo\$, Ellen

Al Levi and I are offering an amazing new program. It's all about less stress and more success. Focusing on the right things, one step at a time. And you can try it for \$1. Check it out at www.StepByStepBusinessBuilding.com.

Get the correct numbers

(Continued from page 30.)

able hours. In this scenario, profit can never be attained. If you sell less than all available hours you can't recover your cost. In either of these cases, you are only fooling yourself. In this scenario stress and frustration levels are still extremely high. It should be noted that since no contractor sells all their available tech/vehicle hours all the time, selling at your cost means you are really selling below your cost.

Scenarios 3 to 7 show the results you will get at different profit margins starting at 10% and incrementally rising by 10% for each subsequent scenario.

Scenarios 3 and 4, at 10% and 20% profit margins respectively, show that you make a profit if you sell all your hours. But, you can't even recover your cost if you sell only 70% of your available time at either of these mar-

gins. As a matter of fact, at 90% and 80% of your available time sold respectively, options 3 and 4 still present extremely high stress and frustration levels since at 90% and 80% you can only recover your cost.

Scenario 5 at 30% shows you make a profit, and, if you only sell 70% of your available time, you can at least still recover your cost. Once again, at 70% of your available time sold, stress and frustration are still extremely high.

Scenarios 6 and 7 at 40% and 50% profit margins respectively show that you recover your cost and make a profit whether you sell all your hours or only 70% of your hours. Stress and frustration levels drop dramatically. Obviously, if you sell less than 70% of your available hours you will decrease the potential for profit. Option 6 at 60% and option 7 at 50% of potential hours sold will

allow you respectively to recover your cost of operation, but, not make a profit. At 60% and 50% you will again increase your stress and frustration levels.

By taking this information into consideration, you can begin the thought process before choosing your profit margin. Keep in mind that the \$100.00 cost I used is, in my opinion, the minimum cost. Your cost can be higher. If you need assistance in calculating your cost; choosing the right profit margin; or, any business matter which will give you an opportunity to succeed, give me a call at 845-639-5050.

Make the year 2010 better for the industry which includes you, your family, your employees, your clientele, and your creditors. When you don't use correct numbers, you have no chance at success. But, when you use the correct numbers the industry is better off because:

1. You and your family will have

the chance to make a profit and lower concerns about getting the bills paid.

2. Your employees will be more content to stay in your employment.

3. You will be better able to serve your clientele.

4. Your creditors will be paid in a timely manner.

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

To receive more info about his

- ⇒ SERVICES
- ⇒ "HOW TO" BUSINESS BOOKS WITH MANAGEMENT THEORIES & METHODS
- ⇒ CONSULTATIONS
- ⇒ WORKSHOPS
- ⇒ SEMINARS
- ⇒ CUSTOMIZED PRICE GUIDES

contact Richard:

Call: 845-639-5050

Fax: 845-639-6791

E-mail: richardditoma@verizon.net

Mail: R & G Profit-Ability, Inc

P.O. Box 282, West Nyack, NY 10994

sync

▶ 1.5 MILLION
BTU/HR

KNIGHTXL

▶ 800,000
BTU/HR

ARMOR

▶ 500,000
BTU/HR

KNIGHT

▶ 210,000
BTU/HR

APPEARING ON
1.25.10

**ONCE AGAIN,
THE STAGE IS SET FOR
INNOVATION**

Over 20 years ago, Lochinvar introduced Power-Fin® water heaters and boilers, and revolutionized the way water is heated. We were a decade ahead of the industry then, and we've continued this tradition of leadership with innovations like Copper-Fin II®, ARMOR®, SHIELD™, KNIGHT® and SYNC™. *Now, the stage is set for our next major product launch.*

**Come see our newest performer at the 2010 AHR Expo.
It's going to be a big show, in every way!**

Can't make the big event?
See the unveiling online on
January 26 at
www.Lochinvar.com



Lochinvar®
High Efficiency Water Heaters, Boilers and Pool Heaters

300 Maddox Simpson Parkway, Lebanon, TN 37090 | 615-889-8900 | www.Lochinvar.com

Circle 26 on Reader Reply Card

An **AMERICAN** Manufacturer's Manifesto



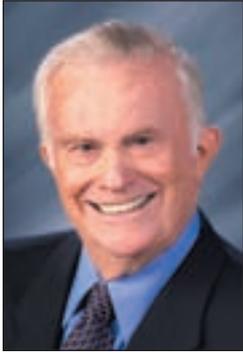
ISO 9001:2008

- We will continue to maintain the highest work standards and a sensitivity toward the health and welfare of our workers.
- We are acknowledged worldwide as maintaining the highest quality standards of our products.
- We are especially proud that our brand is among the world's most sought after.
- We pride ourselves in fielding the world's most productive manufacturing systems.
- We maintain the world's most up-to-date technology with Quality Control to protect the facilities and lives and limbs of our customers.
- We strongly emphasize our ongoing community support activities.



TEL: (708) 594-1700 FAX: (708) 458-0106

The Weldbend Corporation is an American manufacturer of butt-weld carbon steel fittings and flanges ½" thru 60". The Weldbend plant is located in Chicago, Illinois USA and on the internet at www.weldbend.com.



BY MORRIS R. BESCHLOSS
PVF & economic analyst emeritus

Weldbend continues winning tradition despite recessionary environment

With the U.S. industrial sector under assault by both government restrictions and globalization, it's a matter of pride that PVF giant Weldbend stands as a distinguished example of American ingenuity and success.

During a recent trip to Chicago, I had occasion to spend several hours touring the massive 36½ acre facilities of Weldbend, located in Bedford Park, a community right outside Chicago, and not more than 10 minutes away from Midway Airport.

This coincidental location serves as a convenient facility from which to effectively use Weldbend's company plane as a way to stay in touch with customers and constantly audit manufacturing sites and production equipment in various parts of the world. It also serves to bring in a constant retinue of leading distributors and end users to acquaint them with the ultra-modern, cost-effective infrastructure available to them.

Such a highly automated facility makes Weldbend one of the nation's largest full-line and size manufacturers of butt weld carbon steel fittings and flanges. These are effectively produced, shipped and marketed in the great Midwestern hub. Weldbend has achieved a reputation as a top quality mass producer, acquiring a legendary reputation for excellence domestically and worldwide.

Despite the intense competition for this extremely wide range of products, Weldbend has achieved a superior brand name reputation for its quality and service that places them at the top of the pipe-valve-fitting sector's list of outstanding names.

While most manufacturers and distributors have pared down their inventories in these financially troubling times, Weldbend continues to maintain a massive product reserve. This allows for same-day shipments on all but the most highly specialized items on an immediate service basis.

Weldbend, headed by Jimmy Coulas, son of the legendary founder, James Coulas, Sr., prides itself in maintaining a highly motivated stable workforce that provides the backbone of the company's high productivity. President Coulas is particularly proud of the company's outstanding product performance, which has been responsible for the firm's achievement as a gilt-edged brand name by distributors, as well as the wide variety of industrial and commercial end users that it serves.

In a September trip to Europe, Coulas was made aware of a grievous malfunction in a French manufacturer's plant by a comparable competitive product that caused inestimable losses. This unfortunately, has happened too often over the years, Coulas explained. "Weldbend's highest quality manufacturing equipment and its maintenance is at the very top of our list of responsibility in keeping this from happening," emphasizes Coulas.

"The critical nature of Weldbend's products used in production facilities relating to energy production, refineries, utilities, power generation, etc. make such responsibilities paramount in saving lives as well as avoiding severe financial loss," he added.

"Being in full control of the total manufacturing process at our greater Chicago-based plant, we take every precaution that such mishaps do not occur, and are proud of our record in this regard," stated Coulas.

Such fastidious attention to Weldbend's customers' needs has been responsible for the company's continued outstanding performance during the midst of a devastating recession. "I'm sure this has largely contributed to

maintaining our strong business momentum, which has turned out far better than we expected during this recessionary period," concluded Coulas.

Although much of Weldbend's flourishing revenues are generated by the Company's massive inventory of a wide range of butt weld carbon steel fittings and flanges, a growing portion of its marketing efforts is involved in the expanding sector of energy projects on the drawing boards today.

Even such fast-growing renewable energy sources as solar power-generating development are on the Company's radar screen. Most recently, a major facility under the jurisdiction of Lockheed Martin near Phoenix and three upcoming facilities in Southern California's Riverside County are now on the drawing boards.

With the government calling for 25% of utility power to be provided from this globally surging source by 2020, Weldbend is looking to such new opportunities for ever-expanding growth.

Capmark Financial Group bankruptcy reflects worsening commercial investment scene

The tenuous nature of the commercial lending markets has been severely exacerbated by the Chapter 11 bankruptcy of Capmark's Financial Group. Originally a financing affiliate of General Motors Acceptance Corp, its financial condition has severely deteriorated in the recent few months leading to a warning that bankruptcy action could be inevitable, which finally took place.

Beset by an increasing number of loans to major commercial property developers in office towers, strip malls, hotels, etc., Capmark's fixed assets have recently exceeded its liquidity, preventing the commercial lending giant from meeting its long-term loan obligations.

Capmark's private equity owners include Kohlberg, Kravis, Roberts & Co., Goldman Sachs Partners and Five Mile Capital Partners — altogether paying \$1.5 billion in cash to acquire lender GMAC's commercial real-estate business in early 2006, which they renamed Capmark. As it turned out, Capmark's timing couldn't have been worse, as the new company bought into major commercial investments as they were reaching their peak in 2007.

With office and hotel occupancy hitting multi-year lows, and shopping centers and department stores under pressure, the bulk of commercial development is looking to get worse before improving later in the year.

This could seal the doom of other financial institutions, holding debt paper of troubled commercial properties. We'll keep you posted as this situation evolves. GMAC's current bid for additional TARP funds may be just a new wave of such commercial loan companies' need to plead with the government to keep them afloat.

Solar power is busting out all over

Solar power and California's Coachella Valley are turning into a marriage made in economic heaven. With the recent visit by Secretary of the Interior Ken Salazar, a pronouncement indicating three upcoming solar panel production installations in this 350 days-a-year sun-soaked area guarantees that solar energy will become a leading industry in this valley.

Supported by a government mandate calling for 20% utilization of wind and solar energy by electric utilities before 2020, this has given such utilities the incentive to offer installers a 35% rebate from the gross price, which

(Turn to Beschloss, page 58.)

Such a highly automated facility makes Weldbend one of the nation's largest full-line and size manufacturers of butt weld carbon steel fittings and flanges.

HEAT UP YOUR RIDE SWEEPSTAKES



**Plumbing Contractors Enter for Your Chance to Win
A 2010 Chevy Camaro 1SS Coupe**



**plus thousands
of dollars in
VISA® Gift Cards!**



Ask a sales associate at your State wholesaler for details

NO PURCHASE NECESSARY TO ENTER OR WIN. Sweepstakes begins 12/15/09 and ends 4/30/10. Open to legal residents of the 50 United States and the District of Columbia, age 18 and older at time of entry who are professional Plumbers, Plumbing Service Agents or Contractors and who are authorized to work in the 50 United States or the District of Columbia. For a copy of official rules, which govern this sweepstakes, send a self-addressed, stamped envelope to: "Heat Up Your Ride Sweepstakes Rules," Ventura Associates, Inc., Dept. 5B, 1040 Avenue of the Americas, New York, NY 10018. Residents of Vermont need not affix stamp to self-addressed envelope. Void where prohibited. Sponsor: State Industries, 500 Tennessee Waltz Parkway, Ashland City, TN 37015

Circle 27 on Reader Reply Card



The Whistler Olympic and Paralympic Village: Implementing geothermal like you've never seen

BY JOHN MESENBRINK,
chief editor

It is considered one of the most beautiful places in the world. And next month, the world will witness all of Vancouver, British Columbia's beauty and glory when the city hosts the 2010 Winter Olympic games.

Tucked away amid the tall peaks of the Coast Mountain Range, nearly 2,400 athletes and officials will be taking up housing at the Whistler Olympic and Paralympic Village — located approximately 20 minutes south of the Whistler Mountain competition venues — the 2010 Winter Olympics facility constructed in the resort town of Whistler, British Columbia, Canada. This \$32 million village project will eventually be transitioned into a 100-room lodge and 20-unit town-house complex.

Whistler Athletes Village is a LEED-ND (Leadership in Energy and Environmental Design — for

Neighborhood Development) project. The village is comprised of five main components: the residential zone known as Cheakamus Crossing; the international zone; the transport mall; a main catering facility; and an operations support area. The full area will cover 75 acres and will be approximately one million square feet in size, half of that allocated to housing. It is to be developed first to serve as the Whistler Athlete Village in 2010, and then will become a permanent, mixed-use neighborhood, designed to support Whistler's goal of housing 75% of its employees within the community.

According to Whistler2010.com, the village was built to green building standards, using smart growth principles and with the goal of meeting Gold Level certification under LEED-ND. The LEED-ND rating system integrates the principles of smart growth, urbanism, and green building into the first international standard for neighborhood design.

One such innovative, sustainable design practice was the village's heat source. The site was once the municipal landfill but has been transformed into a "green" development using progressive initiatives. The community's heat will be generated by effluent from the wastewater treatment plant located nearby.

DEC Design Mechanical Consultants Ltd. (DEC), a multi-disciplinary engineering firm, in a consortium with Hemmera, environmental service consultants, carried out a detailed feasibility study for a district energy system for the existing village of Whistler. The Study concluded that a modular system based on distributed geo-exchange vertical bore fields for primary energy sources would be feasible for a village wide system with multiple interconnected loops that would act as an energy supply, energy storage and energy sharing utility that could be implemented in phases.

Essentially using the same concepts of geothermal — extracting a

ground heat source — the heat recovery system from the sewage captures heat from liquid waste by passing raw sewage through a heat exchanger, with an added caveat: sewage heat recovery is more advantageous than its geothermal counterpart because sewage is warmer and its heat can be directly transferred.

Using 62 separate geothermal panels, heat is extracted off the sanitary sewage system; in turn, heat exchangers then transfer energy to a fluid, which is pumped around the development through the piping system. Individual homes will use heat pumps to produce space heating and hot water. Both hydronic radiant in-floor heating and hot water fan coil heating will be used. Domestic hot water is produced with plate heat exchangers. Up to 90 percent of the village's heating load will be provided from the system, which gives off non-greenhouse gas emissions.

Conventional district energy systems circulate high temperature

water through their distribution loops, limiting their use and responsiveness. The Whistler Athletes Village District Energy Sharing System (DES) is unique in that it extracts low temperature ambient heat from treated wastewater effluent, making it flexible enough to provide both heating and cooling. The DES extracts the heat and transfers it to a distribution system that can provide space heating domestic hot water heating and cooling for approximately 2,200 users occupying 85,000 square meters of space. It is one of the first closed looped heating and cooling district energy systems in the world. The system was designed and commissioned in 2008, and despite the ambitious project schedule, was completed on time and on budget.

“The project included 32 residential units with only three to four weeks for completion. The installation called for custom design, and had to be completed in small space areas. After the Olympics, the Olympic Athletes’ Village units will be sold, but will still require maintenance. Our geothermal units were designed to ensure ease of serviceability,” said David Zinn, president of Hydrowest Products Ltd.

Hydrowest Products Ltd., with more than 30 years of experience in all operations of modern hydronics, was key to this unique geothermal project. Hydrowest Products’ involve-

ment with the Olympic Athletes’ Village Whistler project began with a request from Pipeline Mechanical Ltd., located in Squamish, B.C. (about 40 minutes from Whistler). Pipeline Mechanical was contracted, and was instrumental in this unique Whistler project involving waste heat recovery.

A number of products were required including heat exchangers, pumps, valves, flow setters, gauges — for very tight space with tight connection constraints to the exchange unit.

“Purge valves eliminate air problems and are excellent for commissioning systems. Webstone Isolator Uni-flange ball valves make changing pumps a 10-minute job — without system fluid loss. Webstone Union Pro-Pal valves, with hose bibb and union, can save labor and space.

“Tankless water heater connections are essential, and Hydrowest has just started using the new Web-



Dave Zinn, president of Hydrowest Products Ltd., oversees the mechanical room at the Whistler Athletes Village complex. His geothermal panels were instrumental for the overall heat source for the village. His innovative panels extract ambient heat from wastewater effluent to provide heating and comfort for the tenant athletes.

stone expansion tank fitting. This product has seen great reception,” said Zinn.

Hydrowest has continued to refine and improve offerings with time-saving and value-added products, which increase the reliability and service ease of its finished units.

“Webstone Company has become one of those value products — which are incorporated into our solutions on a daily basis. Webstone has provisioned solutions from a contractor’s perspective, including determining what valves and fittings actually are needed for specific functions in the building of plumbing and heating systems. Hydrowest Products uses a majority of Webstone’s product lines, and we have been very pleased with the performance and reliability of their products. At the end of the day, it just makes a lot of sense to build systems with service and quick start-up built in,” said Zinn.

The project has garnered international recognition for its commitment to green practices. The District Energy System is one of the highest profile aspects of the athlete’s village’s commitment to green design. The Resort Municipality of Whistler’s waste management system earned the 2009 CAMA (Canadian Association of Municipal Administrators) Environmental Award, as well as the 2008 Community Energy Association’s Energy Action Award for Community Planning and Development.

“This is an innovative alternative energy system that effectively leverages all of the showers, toilets and hot water going into the sewers in Whistler,” said Ted Battiston, Whistler Center for Sustainability’s Energy & Emissions manager. ■

Webstone announces Harley-Davidson winner

David Zinn of Hydrowest Products Ltd. in Vancouver, British Columbia, Canada was named winner of a 2010 Harley-Davidson motorcycle for his entry in the Webstone “Smart Work Deserves a Smart Ride” Pro-Pal® installation contest. “I would like to thank Webstone Company for selecting our system as the winner of the Harley-Davidson contest. It was a complete surprise to us to be selected as the winner. Even more, it is always nice to be recognized for doing something that is just part of our normal day-to-day business. Thank goodness it’s the recognition that I value most, as my wife will not allow me to ride the bike — she knows how I drive my car,” joked Zinn.

Incorporated in 1986, Hydrowest Products Ltd. began with Zinn and his sister, Jean, setting out to provide the best service and products available to the plumbing and heating industry.

“In the early years, we began to supply completely wired and assembled hydronic control panel systems for specific build requests. Our mission was, and continues to be, provisioning quality custom panels, which are complete to the last detail. Over the years we have continued to refine and improve offerings with time-saving and value-added products such as Webstone’s offerings, which increase the reliability and service ease of all our finished units,” said Zinn.

Zinn’s entry featured 32 control panels constructed with Webstone’s step-saving Pro-Pal valves. The panels are for use in the Whistler project and his design is believed to be the first of its kind in North America. Zinn’s work was chosen for his superior demonstration of innovation and how Webstone’s Pro-Pal® Step-Saving valves can improve the overall efficiency, operation and future maintenance of any system.

“I love the Webstone product,” said Zinn. “It saves me time, money, and my installations never looked so good!”

In addition to Mr. Zinn’s grand prize, a portion of the proceeds from the sales of all Pro-Pal valves purchased during the contest period will be donated to breast cancer research. Webstone would like to thank all of the contractors for submitting designs for creative installations, and for all of the wholesale distributors that purchased Pro-Pal valves. Webstone will be making a sizable contribution to the Dana-Farber Cancer Institute in the search for a cure.

Founded in 1954, Webstone is recognized as an industry leader for innovative design of residential and commercial valves used in plumbing, hydronic, radiant, solar and geothermal applications. These designs focus on time- and space-saving concepts that simplify future maintenance and upkeep of all piping systems. Some of Webstone’s trademarked and patented items include the Isolator, Isolator EXP and Pro-Pal step-saving valves.



BY SKIP PFEFFER
PHCC—National
Association President

We keep hearing of, seeing and experiencing situations in our trades that make being in business today a real challenge. We all know the stories: not enough work, customers hesitant to spend money, customers not paying their bill, too many bidders bringing rock bottom prices, competition from less-than-stellar contractors... the list goes on. Now this is all magnified with fears of what is around the corner on a national scope, like health care mandates, higher taxes, inflation, higher material and commodity prices... the list goes on.

The story I keep hearing is that we just have to hang in there, things will change — they always have. That is probably true — if you are an ostrich. We all need to keep our heads above the ground and look at things realistically. Today, perhaps more than any other time in recent history, you must help yourself. In the past, if you were a good trades person and a good business person, you could get by. That's not the case today,

As we look toward the economic situation and what p-h-c contractors will be facing in 2010, PHCC is cautiously optimistic. Based on what our members are telling us, we do think things, overall, will eventually get better business-wise in the coming year. However, the turnaround will be slow and there may not be real signs of recovery until mid- or end-year.

As you can see from the Quality Service Contractors' article in this issue, PHCC's service and repair contractors definitely have some challenges. However, many are wisely choosing to invest in their companies and employees, particularly in areas like training and education, to come out stronger when things turn around.

New construction continues to be the hardest hit, particularly the residential contractors. On the bright side, this situation has given PHCC's new construction contractors, such as those in the Construction Contractors' Alliance (CCA), the opportunity to really fine-tune their business operations and concentrate on differen-

Keep your head above ground

tiating themselves from the competition. In fact, CCA's March 10-12 meeting in West Palm Beach, Fla., will focus on new sales and marketing methods that can help their companies get noticed by the right people.

The Union-Affiliated Contractors (UAC) also is taking steps to stand out from others by offering new residential service agreements that they hope will help them recapture market share. The UAC will meet Feb. 3-5 in Palm Harbor, Fla., to learn about topics like solar, leadership and business management strategies.

Within PHCC, opportunity is a popular 2010 word. It's what everyone is looking for. I know in my area of

dential fire sprinklers, geothermal, solar, etc. PHCC's increasingly popular Webinars will continue to focus on topics like these to help members be informed on potential new markets and information that can help their business. In-person seminars on the topics also are planned.

As we take steps to make our businesses better, we cannot forget to keep an eye on the legislative process and get involved. If you follow the political scenes at the local, state and national levels, it doesn't take long to see that if you're going to "help yourself" we have to develop a strong presence on the legislative front or we're going to get

itor their licensing laws in 2010 to make sure that we are strengthening them and not letting them be weakened. Also on the national level, we have to be vigilant to make sure we do not lose the tax benefits we have gained over the last few years. The estate tax, health care penalties and increasing marginal rates are all going to negatively affect small businesses like PHCC members. We are going to fight for fairness as the federal government seeks to increase taxes.

A key way to help yourself in these times is by joining trade associations related to your businesses. Information on the Internet is great, but the networking that can be done at local, state and national meetings is invaluable. Help yourself to a dose of the benefits that can be gained by joining associations whose sole purpose is to improve the way you do business. The PHCC comes to mind, of course. Consider attending CONNECT 2010 and the QSC Power Meeting Oct. 27-30 in Las Vegas to see that you're not alone in solving your business challenges. We'd love to have you!

Ex unitate vires (From Unity Strength).

Skip Pfeffer is the PHCC—National Association president, and the owner of Canton Plumbing & Heating Co., Inc., Canton, Mass.

Today, perhaps more than any other time in recent history, you must help yourself.

New England, the energy conservation market is of interest, as it could be a boon for businesses and benefit customers at the same time. And at the national level, as president I have appointed several industry experts to view the landscape and see what additional training and services the association can offer to help members expand into the "green" arena. Look for more details about this soon.

There are additional prospects for new work to consider, such as resi-

run over. Some of the decisions made today on tax reform, codes and health care, to name a few, are going to affect our businesses and families for years to come. That is why is it so important to participate events like the April 28-29 PHCC Legislative Conference and Day on Capitol Hill.

It is trying times like this when our licensing laws can get watered down and others can get into our plumbing and HVACR businesses. PHCC is going to help the states mon-

Now is perfect time to prepare for growth

The economy is turning around — albeit slower than we would like. The good thing about the economy today is that you have done and are doing things right because you are still in business. You have probably made all the employee cuts, cut expenses and overhead, and downsized every way possible.

This is all okay, but now you need to begin looking at ways you can begin to grow because the economy is definitely coming back and you need to be a part of it. Growth includes additional marketing, employee training, setting up systems and processes, and reviewing and understanding your financials. Here are some positive steps you can take to build your business to help you to be positioned for the turnaround that is coming:

Quality Service Contractors (QSC) members have found that now is the perfect time to invest in your company and your employees. Your

employees are the most valuable asset within your company. Keeping them up to date on all the latest in great customer service techniques, sales training, technical training and software makes more sense than doing nothing or cutting everything out. By providing ongoing training, this will send the message to your employees that you are not going to give up, but rather build for the future. There are many inexpensive ways to provide to your employees. This can be done online through Webinars, in-house seminars, vendor technical sessions or teleconferences.

Employees want to be part of the solution, if given the opportunity. You need to make sure people are still setting goals and working toward them. Employees will want to know how they're doing and what's expected of them going forward.

Have you given some thought to reviewing your business operations to search for ways to improve your

BY DAVID
SINGLETON,
Chair
Quality Service
Contractors



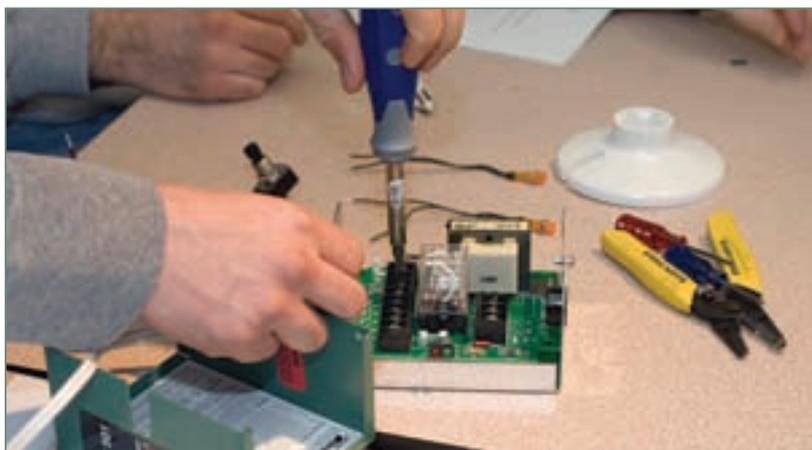
systems and processes with the ultimate goal of improving your bottom line? The time has never been better to look for ways to tweak the systems and processes that will help improve productivity and profitability. Involve your employees. Ask them if they can think of ways to help the company improve the bottom line.

Reviewing your financials to see how you compare with industry averages is a good way to determine how solid your company is. Many QSC members utilize the QSC business coaches to help them with this. They can find out if their income and expenses are within averages for company's their size. If not, then they have good ideas of what areas (Turn to Growth, page 42.)

Factory Tune ups.

Tune up your business with FloPro® Factory Training.

Even the most experienced contractors tell us that Taco FloPro Factory Training helps them work smarter. And with today's economy, working smarter isn't an option – it's essential for profitability. You're sure to benefit from the expertise and insights only to be found in a small, personal classroom setting.



To grow, you have to know.

Our 2-day factory training programs are taught by Taco's own John Barba. Together, you'll focus on one topic and learn it cold. It's work, but it doesn't feel like it.

Sign up now!

Classes are small, and available to FloPro team members only. Visit www.taco-hvac.com/flopro for all the course information and details.



Date	Course	Description
FEB 11-12	"Compleat" Boiler Room (CBR)	Learn to design – and sell – the ultimate boiler room using all Taco products. Lots of hands-on, including wiring and programming Taco controls.
FEB 25-26	Hydronic Heat Loss and Design (HHD)	Learn simple strategies to improve any system by adding reset controls to existing cast iron boilers, adding motorized reset valves to mod-con boilers PLUS a whole lot more! Includes an introduction to Taco's new iWorx web-based system controls for residential applications. (CBR is a prerequisite)
MAR 11-12	"Compleat" Boiler Room (CBR)	See above
MAR 25-26	Hydronic Control Strategies (HCS)	Learn to conduct an accurate heat loss analysis with pencil, paper, and calculator. Learn how to use our state of the art FloPro Design software. Plenty of hands-on. Sure to benefit any experienced hydronics designer. Basic computer skills required.
APR 8-9	"Compleat" Boiler Room (CBR)	See above
APR 22-23	Hydronic Control Strategies (HCS)	See above
JUNE 24-25	"Compleat" Boiler Room (CBR)	See above
JUL 8-9	Hydronic Heat Loss and Design (HHD)	See above
SEPT 23-24	Hydronic Control Strategies (HCS)	See above
OCT 21-22	"Compleat" Boiler Room (CBR)	See above



New this year are several "Off-Campus" locations:

Minneapolis:

April 15-16 CBR
 May 13-14 HCS
 May 20-21 HHD
 June 17-18 CBR

Denver:

June 10-11 CBR
 August 5-6 HCS
 Sept 9-10 HHD

New Jersey:

July 29-30 CBR
 August 19-20 HCS

Philadelphia:

Oct 7-8 CBR

2010 Hydronics: Going the energy efficient route

BY DAN FOLEY

For many hydronics contractors, 2009 was not a great year for business. Due to the economic downturn, low consumer confidence, and the housing slump, maintaining growth was a challenge for contractors, rep agencies, suppliers and even manufacturers. My company, based in the Washington, D.C. metro area was lucky enough to break even with 2008 revenues (approximately \$3.5M) due to some existing projects booked that carried

us through the year.

We are fortunate to be based in an area that weathers economic downturns well, as our local economy is diverse. We are not dependent on one segment of the economy. High-tech firms, telecomm firms, defense contractors, bio med, military, government contractors, and of course, the federal government all stoke the local economy. When one sector is down, another seems to be flying. It has the net effect of flattening out the dips and downturns, which are inevitable. Other parts of the coun-

try which rely on one segment suffer when there is a downturn that affects that market. Auto manufacturing in Michigan and the real estate market in California are two examples that come to mind.

Within the past two years, my company has ventured in the solar thermal business. I used to turn this work away. After getting certified training from my primary vendor, Viessmann, I installed a simple DHW pre-heat system in my own home. I took on the work that I was turning away and now have over a dozen systems installed including DHW systems, pool heat and even a combined solar/DHW/radiant system.

I see this as a growth area for hydronic contractors. We already have the skill set to install these systems. With the proper training, no industry is better equipped to install solar thermal systems. With the 30% uncapped federal tax credit available through the stimulus package as well as local and state incentives, the systems are more affordable than ever.

We recently finished a project in Maryland where my client ended up with \$9,500.00 in combined tax credits and grants — 50% of the cost of the project. We anticipate a substantial increase in this part of our business in 2010, which is good news for my company and my suppliers.

The stimulus package has significantly increased our sales of 90+ condensing boilers and I see this trend continuing on an upward path. Clients are choosing the high efficiency boilers in replacement situations due to the lower energy bills, as well as the \$1,500.00 tax credit. Some states offer additional incentives as well. I expect to see this trend increase in the coming year.

Our vendors are seeing this trend as well. My primary hydronics vendor, Thos. Somerville Co. has benefited from this dynamic. Jeff Riley, Somerville's sales manager, had this to say about the 2010 hydronics market:

“Even with the challenging economy we have seen significant increases in our sales of hydronic products from radiant floor components through condensing boilers. Our customers are really ‘warming up’ to selling comfortable hydronic systems with the focus on maximum efficiency. As a result our mod-con boiler business is thriving. One genuine indicator of future sales is the number of requests we are receiving for trainings on hydronic products. It is an exciting time for wet heat.”

One successful contractor who

has chosen not to participate in the recession is Alan Givens, president of Parrish Services, Manassas, Virginia. Alan's company is closing out a record year and has predicted a monster year for 2010 — 40% anticipated growth from \$10M to \$14M. Alan attributes this anticipated growth to three things:

1. The federal stimulus package and associated tax credits;

“Even with the challenging economy we have seen significant increases in our sales of hydronic products from radiant floor components through condensing boilers.”

2. The phase out of R-22 refrigerant; and

3. Pent up consumer demand.

Ninety-eight percent of the equipment his company installs qualifies for the incentive.

“My technicians and sales force will only quote systems that are eligible for the tax incentives” said Givens. “I predict 2010 will be the best year for our industry in the last 20 years.”

I like Alan's optimism. This is the attitude of a successful contractor and industry leader.

My good friend Paul Pollets owns Advanced Radiant Technology based in Seattle. His company specializes in high-end residential and commercial radiant projects. Paul has seen his market tighten up as the free-spending Microsoft millionaires and the high-tech economy has scaled back. Paul is a bit more cautious about the coming year.

“2009 hasn't been kind to the radiant industry in the Seattle market. The downturn in the economy has been slow to recover, even in the land of Microsoft. We've seen a trend toward lower costing, an abundance of competitive bids that are often priced slightly higher than the cost of materials, and a ‘shopping’ tendency of homeowners and GCs. Value is seen on getting the lowest price, rather than a quality system installation. While these trends always have been present in the industry, they multiply with a bad economy where money is tight and prospects have seen a significant loss in their personal investments. The boiler replacement market also has been characterized by low pricing and the abundance of contractors

(Turn to Hydronics page 44.)

State of hydronics – 2010

Home sales are up and commercial projects are slowing, according to the latest series of economic polls. But what does that mean for the hydronic industry and the various products offered? Watts Radiant sees these events as favorable opportunities.

Here's how:

Residential projects will shift from new home construction to existing home remodels as homeowners are looking for ways to make their home more attractive. This means replacing that old boiler or water heater with a newer, more efficient model. It also means updating the heating system, converting from forced air to hydronic radiant. EPDM piping and PEX tubing will play a key roll in these conversions. Additionally, some homeowners will focus on smaller improvement areas and will look inward towards the kitchen and bathrooms. For these projects, electric radiant will be key to convert cold tile floors to something warm and inviting.

Commercial projects are going to push the environmental threshold by looking towards thermal solar and geothermal heat sources. Large diameter, pre-insulated PEX tubing will help transport energy from these sources to the building's interior. New DualTemp controls will help commercial projects control the increased thermal mass typically associated with thicker slab constructions.

Hydronic snow melting applications will begin to get a second glance for both residential and commercial applications. High efficiency condensing boilers will add a new dimension to the old snow melting application, making them truly efficient and cost effective. Extending the life of the exterior slabs or brick paver areas is just one of the many advantages snow melting systems will offer. Commercial and residential projects will begin to see snow melting options for longevity and resale value, not to mention the reduced impact of damage to the interior due to tracked in salt and other chemicals.

Electric snow melting products will begin to enter the options mix in 2010. Small areas such as residential patios and sidewalks will be able to benefit from a snow melting system. Electric snow melting products are more cost effective for small areas — no mechanical room required — opening up small residential projects to the possibility of improved safety and convenience.

For all of these, time is key. Getting in and out quickly will help keep installers profitable. Accessories like pre-packaged HydroNex mechanical packages are essential in making profit a possibility.

In short, product and service diversity will be key to making 2010 a success. ■

Source: Watts Radiant

Prepare for growth

(Continued from page 40.)

to look at to improve their bottom line.

The QSC Power Meeting in Houston, Texas, March 11 – 13, 2010, will focus on building a world-class business with Making Your Business Work For You! The E-Myth Solution. If you are looking for ways to improve your business, you will want to mark this on your calendar.

If you'd like more information about QSC, an enhanced service group of the Plumbing-Heating-Cooling Contractors—National Association, call (800)533-7694, or visit <http://www.qsc-phcc.org/>. ■

By David Singleton, Chair Quality Service Contractors, owner David R. Singleton, Inc., Manchester, Mass.

FINALLY

High-Tech Innovation Meets Intelligent Simplicity




BRADFORD WHITE
WATER HEATERS

If you buy, sell or install gas water heaters...this is a game changer!

The New Bradford White ICON System™ is much more than a gas control valve.

It's an installation, operation and diagnostic dream come true.

The Bradford White ICON System™ provides many energy and time-saving benefits to the homeowner, contractor and wholesaler. And, it's available as standard equipment on Bradford White Residential and Light Duty Commercial products* at no extra cost!

www.bradfordwhite.com

The Bradford White ICON System™ requires no external electricity (millivolt powered) and offers an advanced temperature control system, exclusive performance software, intelligent diagnostics, pilot-on-indication, a separate immersed thermowell, an integrated piezo igniter and universal replacement capability. With over 150,000 units already in the field, it's a technology that's proven durable, reliable and simple.

Built to be the Best™

THE NEW
BRADFORD WHITE
ICON
System™



We urge you to go to

www.bradfordwhite.com

for full details. You'll see how the Bradford White ICON System™ can change your business for the better.

To Find A Wholesaler Call **800.523.2931**

*All atmospheric Vent and Direct Vent Residential and Light Duty Models except High Performance and Mobile Home Models.

©2009, Bradford White Corporation. All rights reserved.

Circle 29 on Reader Reply Card

Hydronics 2010

(Continued from page 42.)

willing to charge as little as possible to get the work. The reduction in fuel prices hasn't helped the consumer to jump in and spend more for efficiencies, with little incentive for tax rebates. We can't afford to be complacent, just because fuel costs are lower today. They will rise again.

The thermal solar DHW market seems active, but seems to have turned into a commodity with contractors offering and installing systems using Chinese panels at what seems like minimal profit.

"I'm hoping 2010 will bring more business. I am slightly pessimistic about the outlook, considering the mindsets of the customers I speak with daily, and the cutbacks from

major manufacturers on staff and inventory. The industry needs more state and federal tax incentives and more local marketing and support from the manufacturers. Jumpstarting the economy is not easy. 'Trickle down' monies from mass transportation or road projects don't necessarily translate to any increased business for radiant contractors," said Pollets.

Pollets also has ventured into the solar thermal market and sees an increase in this type of work in the future. He recently completed a large solar project for a local college that was written up in several industry publications.

Clearly the growth areas will be in renewable energy sources such as solar and high efficiency boilers that qualify for incentives. John Vastyan, noted hydronics researcher and writer, has monitored the market's pulse for decades.

"Here in the United States, overall, it looks like the hydronics industry, say, compared with the way things were in '06, is down about 30 to 40 percent. That's a huge loss of business and revenue," Vastyan said.

"But, the influence of green — federally-pumped dollars on a massive scale, and the push for renewable energy and energy conservation — have helped to move things back in a better direction," said Vastyan. "From what I've seen, things are improving, but it'll take some time — several months — before contractors, reps, wholesalers and manufacturers will see the 20, 30 and 40 percent improvements. When that begins to happen, radiant tubing and boiler sales will begin to move up at a pace greater than the incremental improvements we're seeing now," said Vastyan.

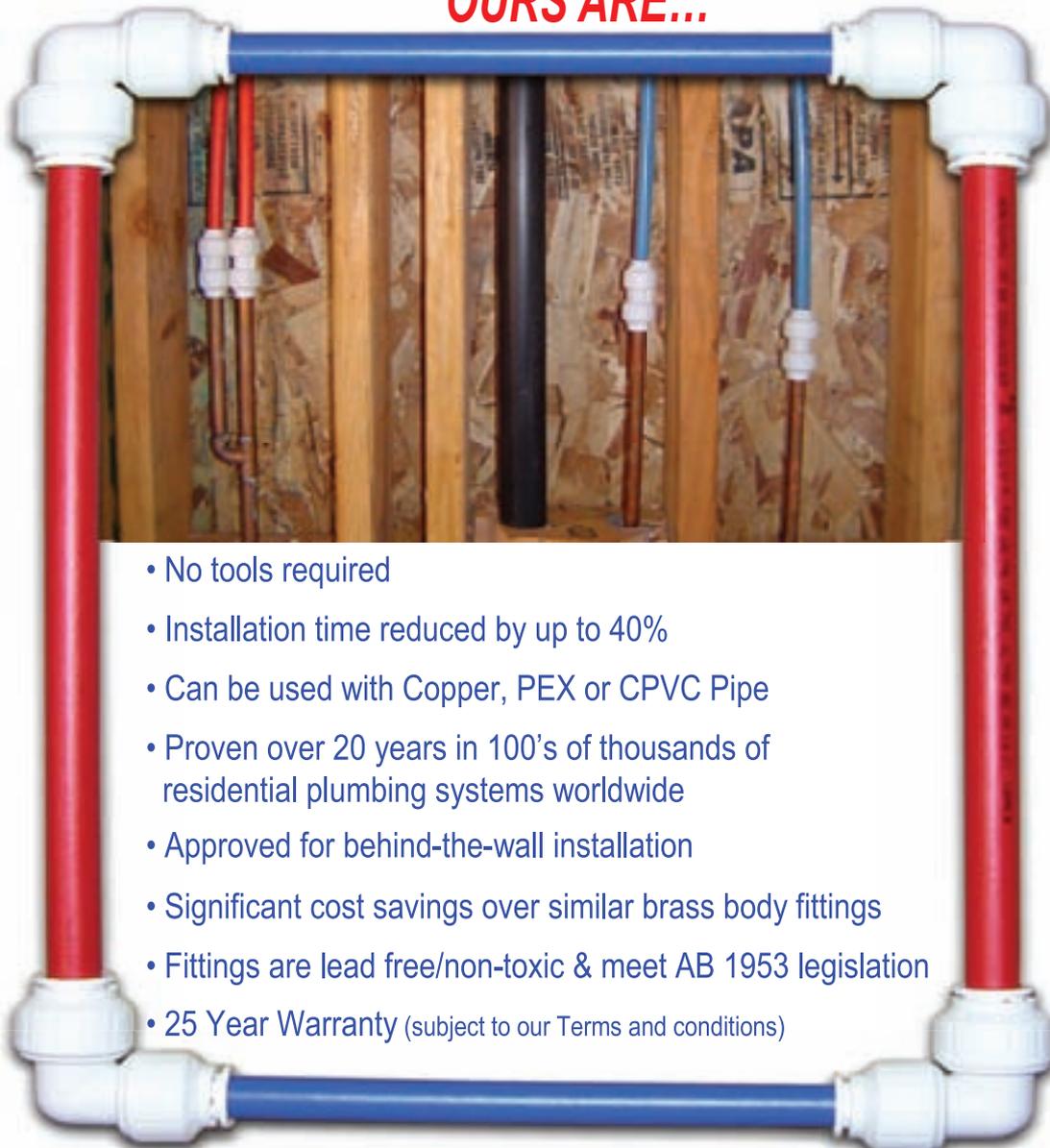
I hope John is right on in his prediction, and I think he is. This is an exciting time to be part of this growing and changing industry. The resources are available to improve and increase our sales and profitability. I intend to put them to work in my company and I hope you do, too. May we all have a prosperous year in 2010! ■

Dan Foley is owner and president of Foley Mechanical, Inc. — an HVAC company based in Alexandria, Va. specializing in radiant/snowmelt systems. Dan began his career in the HVAC industry after earning his degree in Business Management from Virginia Tech in 1988. After spending 15 years at Arlington Heating and A/C, Inc., rising to the position of vice president, Dan Foley left the company in April, 2002 to start his own company. Dan has years of field experience installing and servicing radiant and hydronic systems to complement his managerial capabilities. He is an RPA certified designer and installer. Dan serves on the boards of his local ACCA, PHCC and RPA chapters. He is also a past president of the Radiant Panel Association. He holds Master HVAC and Master plumbing/gas fitting licenses in Virginia, Washing, D.C. and Maryland.

JG Speedfit®
by **JG John Guest®**

**LEAD
FREE**

**New Lead Laws Coming,
Are the fittings you're installing in compliance?
OURS ARE...**



- No tools required
- Installation time reduced by up to 40%
- Can be used with Copper, PEX or CPVC Pipe
- Proven over 20 years in 100's of thousands of residential plumbing systems worldwide
- Approved for behind-the-wall installation
- Significant cost savings over similar brass body fittings
- Fittings are lead free/non-toxic & meet AB 1953 legislation
- 25 Year Warranty (subject to our Terms and conditions)



ASTM F876
ASTM F 877
CSA B137.5
ASSE 1061



1.800.94 JG USA

info@jgusa.com • www.johnguest.com

Circle 30 on Reader Reply Card

HOT. FAST. EASY.

Introducing the compact, low-profile

QUICKFIRE TORCH

Easy access to tight spots
30% faster solder time*
Quick start ignition



* Than the Bernzomatic TS4000

Check it out today at your local hardware retailer.

**BERNZOMATIC**

bernzomatic.com/quickfire

© 2009 BERNZOMATIC. ALL RIGHTS RESERVED.

Circle 31 on Reader Reply Card

The power of BIM

BY ERIC WINSLOW

The history of CAD/CAM technology in the HVAC industry stretches back to the late '70s and early '80s when we began to see the first patents issued for transferring data into machine code derived from three-dimensional objects. This technology was a substantial improvement for automating the manufacture of sheet metal ductwork as prior to this it had to be painstakingly laid out by hand.

Following the timeline of these innovations we witnessed new software and machinery developments, which further automated the design & fab-

rication of HVAC systems through the use of CAD/CAM technology. By the mid-to-late '90s, this technology was commonplace in the HVAC industry and other industries — such as structural steel companies — were adopting similar methods.

Surviving the test of time, CAD/CAM implementation proved to be especially useful on large, complex projects. Having the ability to simulate the physical features of a building in both 2D and 3D, we could now develop very precise routing of the HVAC with objects that contained all of the information required to manufacture the various components. Moving forward with greater confi-

dence that these systems would work opened up many more opportunities for pre-fabrication, pre-purchasing and improved planning. These opportunities would often net a noticeable decrease in field labor, overall increase in productivity, all while increasing the quality of the end product. This was just the beginning.

By now most people in the construction industry are aware of the movement toward Building Information Modeling (BIM). While CAD technology, including 3D modeling and the idea of utilizing embedded information from within the 3D model is certainly not new to the HVAC industry; this technique is now being applied to all building trades. It is now possible to create a virtual re-creation of the project including all necessary components from the structural steel skeleton all the way down to the fixtures and finishes. These components are united into a single integrated model for analysis. Many of the objects are rich in embedded information, which serves a multitude of purposes.

It's important to think about BIM not as a software, or new 3D technology, but as a process — a collaborative process. BIM functions as a catalyst to allow teams of designers, contractors, vendors and others to engage each other in a way that maximizes overall productivity and creates real value for the team. An effective BIM implementation includes all parties involved in the



project. At the most fundamental level we can implement collision-detection, which allows the team to solve spatial relations issues. But space allocation and figuring out how everything fits together doesn't adequately describe the BIM process.

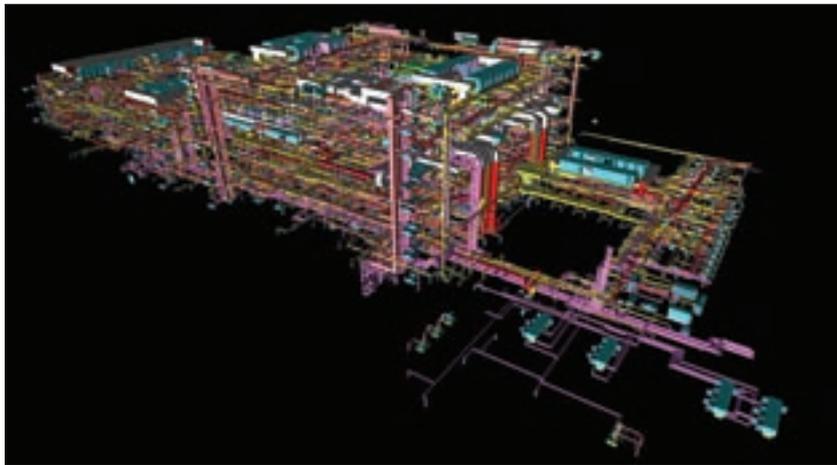
The current trend in BIM implementation is with 4D, 5D and XD technologies. Recent developments in software enable you to not only identify how things fit together but when they fit together. This element of time is the fourth dimension of BIM and resolves conflicts that would arise during trade sequencing, or "time-clashes." We can now simulate the entire construction process to maximize field productivity and significantly reduce or eliminate scheduling conflicts.

Also, the ability to extract quantities directly from the model and assign costs to those quantities is now possible. The cost information embedded within the object(s) is the fifth dimension of BIM. This is especially useful on Design-Assist and Design-Build projects where decisions can be made to maintain budgets and keep the project on target. Quantity take-off (QTO) is now an automated process which facilitates the capability to produce a model-based estimate (MBE).

Discussions on the benefits of BIM are usually centered on project delivery. But other examples of clever BIM innovations are the ability to perform code compliance checking, thermal analysis, energy consumption and optimization, facilities management, asset management, and beyond. These examples are commonly referred to as XD or the X dimensions of BIM. New ideas are continually being introduced to improve the entire building lifecycle.

The sales pitch for BIM is typically all about reducing risk. Not just for the trade contractors but for the owner, the architect, engineer and others. But the benefit of improved visualization is much more powerful than that. By leveraging the available technology and utilizing the model as our vehicle to communicate, we can now efficiently solve problems that have plagued the building industry since antiquity.

By harnessing these improvements we, in turn, improve the standard of care for our customers, which inevitably translates to value for the entire team. And all of this (Turn to Building... page 48.)



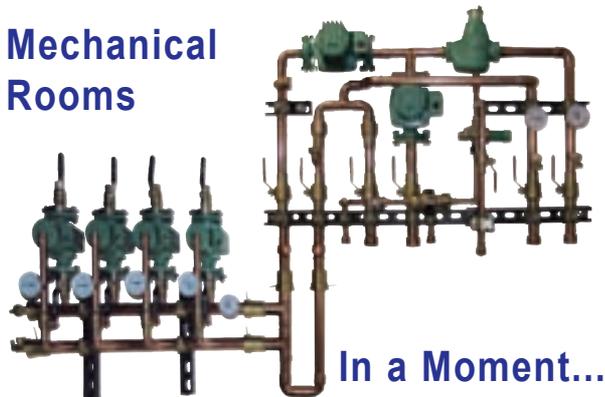
While CAD/CAM technology in the HVAC industry began in the late 1970s, Building Information Modeling (BIM) now can perform a virtual re-creation of the project including all necessary components from the structural steel skeleton all the way down to the fixtures and finishes.

Precision www.phpinc.us
PHP Hydronics™



PHP PRO-MODULAR™ Build It Your Way - Fast!

Mechanical Rooms



In a Moment...

As radiant heating markets continue their unprecedented growth we continue to add unique products, improving installation efficiency and professional appearance. The Pro-Modular™ near boiler piping primary/secondary pumping and zoning fluid control system provide pre-tested, flexible modular components. Space saving components that can be mounted vertically or horizontally, assembled quickly using Slip-Fit™, or sweat fittings. Call Rick @ (503) 445-4188.



Precision Hydronic Products
 Division of JL Industries, Inc.
 8730 NE 79th Court
 Portland, Oregon 97218
 T (503) 445-4188
 F (503) 445-4187
www.phpinc.us

Patent Pending Components

Circle 32 on Reader Reply Card



Made in the USA.
 We do not export labor.
 12/09



State of the Art

COMMERCIAL HOT WATER



Noritz offers a full-line of compact commercial water heaters for any application.

- Modular Multi-System- 1 to 24 units
- Modulation- Up to 545:1 multi-system turn down ratio
- Precise and efficient load tracking
- Intelligent System- System controller unit communication
- Redundancy- Built-in reliability
- High Volume- Up to 316 GPM; 9.1 million btuh

noritz.com/commercial

866-396-6748



Circle 33 on Reader Reply Card

Building Information Modeling

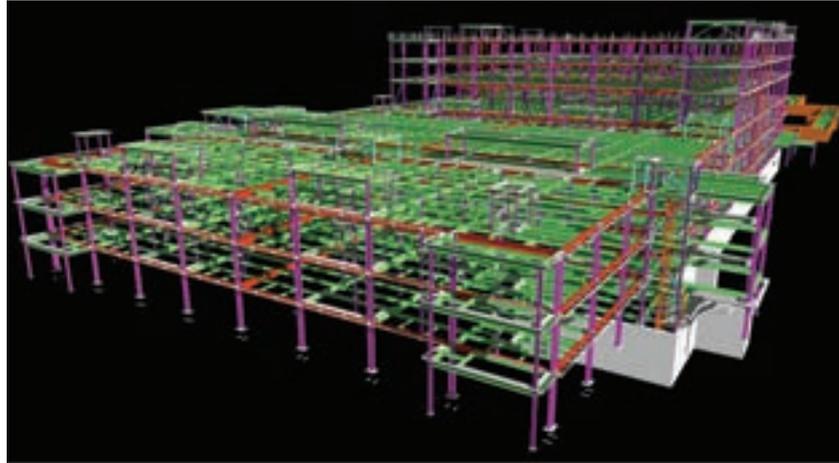
(Continued from page 46.)

takes place in a virtual environment long before the building actually exists and much sooner than conventionally possible.

BIM has and will open many doors to improve the delivery of projects

but there are definitely obstacles that have to be dealt with. Addressing the realities of BIM and what is achievable is a key to success.

The traditional plan/spec contract structure normally assigns roles and responsibilities; this is also being



BIM is a collaborative process that functions as a catalyst to allow teams of designers, contractors, vendors and others to engage each other in a way that maximizes overall productivity and creates real value for the team.

challenged. New contractual language is being introduced that is designed to facilitate an effective BIM execution plan but many of these arrangements are either in progress or have yet to be tested. Unfortunately no one really has all of the answers and it will, to some degree, require a leap of faith.

Without a doubt, a successful BIM implementation requires a commitment from the entire team. This level of commitment is required to work through various challenges that present themselves. Challenges such as software interoperability, limitations on digital data transfer and storage, training, implementation, integration, liability, etc., all will have to be addressed.

As with anything in life, there are risks. Luckily there are scores of BIM enthusiasts dedicated to making this a successful endeavor. This includes a number of examples of the technology being used overseas. As more BIM-enabled projects are completed,

the more lessons learned, the more we can refine the process.

Despite the challenges with BIM, it's intuitive to proceed further down this path. The future of BIM is promising as the technology continues to evolve. Advances in software and computing power will allow more data to be included in the model, allow it to be shared more readily and put it within reach of more people. Advances in delivery methods will allow teams to work more efficiently with greater accuracy. All of which improves our ability to produce better buildings. ■

Eric Winslow has been in the construction industry for 17 years as a manager, designer, fabricator and installer. He currently leads the Engineering & BIM department at Superior Air Handling in Clearfield, Utah, where he continues to be directly involved in operational deployment of technology and BIM implementation. He can be reached at eric.winslow@sahco.com.

SANIFLO Macerator The original plumbing solution



1-800-571-8191 | www.saniflo.com

Saniflo...all you need is water and an electrical power supply, get the job done in a day!

Saniflo systems are installed above the floor. All units are pre assembled and suitable for:



Garages



Under the stairs



Basements



Bedrooms

SANIFLO

SINCE 1958

Install a complete bathroom anywhere!

- 3 inlets (toilet, shower/bath and sink)
- Check valves included
- Vertical plumbing, up to 15ft
- Horizontal pumping up to 150ft
- Full range of models to suit your specific needs
- 2 year warranty

3/4" discharge pipe



Circle 34 on Reader Reply Card

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

New!



Energy from nature.

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

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

**FEDERAL TAX CREDIT:
SAVE 30% UP TO \$1,500
OF THE TOTAL SYSTEM COST!**

- 6 YEAR WARRANTY
- 2.5 ENERGY FACTOR
- 80 GALLON STORAGE CAPACITY
- REDUCES HOT WATER COSTS BY UP TO 80 %
- COOLS AND DEHUMIDIFIES THE AIR AROUND IT
- LOW STAND-BY LOSSES THROUGH GOOD INSULATION



TOLL FREE **800.582.8423**

www.stiebel-eltron-usa.com



STIEBEL ELTRON
Simply the Best

Circle 46 on Reader Reply Card

Join The Green Scene



New WatcoFlex™ Bath Waste ...installs faster/easier

Special patent pending PVC flexible tubing. Eliminates four field joints. Innovator™ overflow parts assemble by hand. No screws. Approved by IAPMO. It's green. You'll get used to seeing it.

Just ask your wholesaler



WATCO MANUFACTURING COMPANY

1220 South Powell Road,
Independence, MO 64057-2724
Phone 816-796-3900 • FAX 816-796-0875

A Division of WCM Industries, Inc.

Circle 36 on Reader Reply Card



BY DAVID MORRIS

Building Information Modeling and PHCs

What is Building Information Modeling (BIM) and how does it affect the Plumbing and Hydronic industry? With improvements in affordable computer hardware and software for visualization of entire buildings in three dimensions, the opportunity for prefabrication and project pre-planning are possible in ways only dreamed of 10 years ago. Inter-trade spatial coordination with ninety-five percent or better accuracy provides PHC contractors the ability to build digitally and then prefabricate with certainty of fit far beyond the “Large Bore” and welded systems focused on in the past.

These opportunities abound for both large and small firms and are limited more by the complexity of the project than dollar value of the contract. While there is an up-front investment in hardware, software, and training, most contractors see a return on investment that exceeds their initial projections.¹ After a 3D model is spatially coordinated, accurate bills of materials can be extracted automatically with a few clicks of the mouse. Fabrication drawings are linked to and extracted from the CAD models, and do not need to be drawn from scratch. This saves time and improves quality and accuracy of the finished product. By moving the “thinking” from the field to a controlled environment, better decisions can be made earlier in the process.

How do you get started? Find a capable trade knowledgeable individual with detailing experience and train them to use the computer and software, or hire a competent 3D CAD detailer with trade experience. However, it is much easier to teach someone to use the computer than to teach a “computer wizard” your trade. Mechanical Contractors Association of America (MCAA) has a BIM committee that is actively pursuing best methods for BIM training. They may offer some seminars on the subject in the near future. Your local training center or junior college may offer CAD classes as well. Training is the key to success.

Most contractors experience a sense of being overwhelmed at first, then the pain of the learning curve sets in. Finally, as expertise improves, the return on investment is realized, and they move forward with confidence. Those who measure their success find the ROI is higher than those who do not.¹ A well-planned implementation with milestones and measures of success will achieve earlier positive outcomes than a more organic evolution. The good news is that most of the initial groundwork for standards is in place and a PHC does not have to start from scratch. Organizations such as the

BuildingSmartAlliance and the National Institute for Building Sciences have active programs in place that offer many advantages.

The National CAD Standard is a great resource for pre-defined computer aided drafting layers, colors, and naming conventions. The National BIM Standard is less mature but entering into its second revision and promises to be a valuable tool for interoperability and social exchanges. Both documents are available through the NIBS or BuildingSmart websites.

The benefits of Building Information Modeling processes far outweigh the effort required to overcome the learning curve. The technology is mature enough to provide a multitude of improvements in almost every aspect of the PHC construction process from estimating through project closeout. If your contracts do not already require the use of BIM, they will very shortly. The Building Information Modeling trend started on the west coast, gained momentum on the east coast and is rapidly closing the gap between. Those who wait for the technology to mature may soon find themselves scrambling to catch up. ■

¹“The Business Value of BIM” 2009 McGraw Hill SmartMarket Report

David Morris is the director of Virtual Construction, EMCOR Construction Services. Morris more than 30 years of experience performing and directing all phases of piping and mechanical systems for Commercial, Hospitality, Industrial, and Power Generation construction. Current duties include improving BIM processes and sharing best detailing and virtual design practices for his company. Morris is well known as an industry activist for Integrated Project Delivery, BIM and Process Transformation and has presented to AIA, CURT, AGC, MCAA BuildingSmart Alliance, and other industry functions related to Virtual Construction and Building Information Modeling. As the director of the National BIM Standard, Deputy Director of the National CAD Standard, vice-chairman of the BuildingSmart Alliance Board of Directors and Director of the Quality of Life and Visualization, Simulation & Analysis Programs, Chairman of Associated General Contractors BIM Forum Subcontractors Subcommittee, and Member of The Construction Users Round Table Process Transformation Committee, and Chairman of the AGC San Diego BIM committee, Mr. Morris brings a practical and commercial perspective to the use of technology in construction.



STRENGTH IN SIMPLICITY

U. S. PATENT NO. 7,618,067



The Glue-On-Nozzle's patented design and superior construction keeps our nozzle on the wall and your plumbers off the clock. Strength in simplicity creating "a new industry standard".

G-O-N, LLC 15455 N. Greenway-Hayden Loop, C-14, Scottsdale, AZ 85260

phone: 480-948-9059 fax: 480-951-8697 sales@glueonnozzle.com www.glueonnozzle.com

Circle 37 on Reader Reply Card

Navien America: Turning up the heat with tankless

What was once thought for use in small cottages or vacation homes, tankless water heaters are “heating” up the water heating landscape. End user misconceptions regarding the limitations of tankless have been quelled by better-manufactured equipment and innovative-engineered design. And, a shift in the country’s thinking toward green building and the government’s financial attitudes and dolings toward sustainability — the \$1,500 federal tax credit incentive, for example — have consumers taking tankless more seriously. With tankless garnering serious talk and receiving serious props from the field, the question then becomes, which tankless product is the right choice?

Navien America is one such tankless company that is pushing the envelope in terms of offering a hot water

distribution system that sets the industry standard for quality, performance and efficiency. While there’s no questioning the fact that the water heater market has taken a hit during this economic uncertainty, Navien has separated itself from the competition. “In terms of 2010, the whole tankless industry will be down from 2008, but it will be better than 2009 — even though Navien increased 2.5 times more between 2008 and 2009. Navien actually forecasts a 100% increase in sales in 2010. With the current U.S. stimulus package, Navien will continue to see a conversion from tank to tankless in 2010. Navien is quickly becoming the “What’s Next” company regarding new products,” said Ted Kwak, president, Navien America, Inc. Interestingly enough, Navien, which was derived from the concept of “Navigating Energy for the Environment,” produces

over 500,000 residential and commercial boilers per year.

Navien offers a full line of condensing tankless water heaters, available in propane or natural gas. All Navien condensing tankless heaters are ENERGY STAR rated, and qualify for the current Federal Tax Credit/Rebates.

Navien offers a hybrid tankless heater called the “A” model, which comes with a half-gallon buffer tank and a circulation pump enabling the end user to have instant hot water with no minimum flow rate required to activate the heater. The company has just introduced its new Condensing Combination Water Heater, or “Combi Heater,” which not only provides an input of 200,000 BTU domestic hot water, but also provides a hydronic heating circuit with a modulating burner that can be used for radiant heating or space



From l to r: Chris Couvillion, Houston-area sales manager for Ferguson; Kenny Browning, Hot Water Guys; Tom Massiman, Hot Water Guys; and Ty Tipton, principal and owner of the Tipton Company “stand behind” the residential NR240A-NG Navien tankless unit.

heating for the entire dwelling. “Navien heaters were engineered and designed to get around some of the limitations of traditional tankless heaters. For example, with the Navien “A” model heater there is a buffer tank and circulation pump installed in the heater, which eliminates a minimum flow rate to activate the heater. The tank, which stores water at 120°, and pump also eliminate the “cold water sandwich” or “stacking” effect that can happen with the engineering associated with traditional tankless heaters. The Navien heater is controlled by an on-board dual micro-processor that is constantly monitoring the functionality of the heaters performance, ensuring the most energy efficient operation,” said Ty Tipton, president, Tipton Company, a manufacturer’s rep for Navien. The biggest differences in the Navien heater versus other gas-fired models is that the Navien tankless heaters have a tank and a recirculation pump built in the heater. The tank and the pump enable the unit to get around a couple of the limitations. One is by eliminating a minimum flow rate to activate the heater. The standard tankless heaters take .6 gpm to activate them to produce hot water. Because Navien uses a small buffer tank to preheat the water, it always has it ready on demand.

Installing a tankless product made easy

Tom Massiman of Hot Water Guys, Houston, Texas, specialize in tankless water heating, and he swears by the Navien product. According to Massiman, residential retrofit installations comprise about 75% of his business with new construction and (Turn to Turning... page 54.)



◆ **Strut Clamps Without Strut!** Notches accept clamps from 3/4" to 3"

- ◆ Use with or without clamps or strut.
- ◆ Fast easy installation saves you money!
- ◆ Durable U.V. resistant ABS will not deteriorate in sunlight.
- ◆ 100 pound rating. w6" height meets or exceeds most codes.
- ◆ **Build a Bridge** for multiple runs.
- ◆ Used by professionals for a professional looking job!

Available from your favorite wholesaler.



PROUDLY MANUFACTURED BY
A.T.I. Nampa, ID U.S.A.
ATI@atiplastics.net

VERSABLOCK

www.versablock.com
866-61BLOCK

*Come see us at the
Builders Show
Booth #N2113 and AHR Expo
Booth #2542*

WeAreLeadFree.net

It is the dawning of a new day for our Industry.

We are the brands of Watts Water Technologies.

In California and Vermont, after months of discussion, preparation and hard work the world has changed and Plumbing Professionals, Engineers and Do-It-Yourselfers are waking up to the new standard of Lead Free plumbing.

Today, we are Lead Free.

For more information or product ordering visit WeAreLeadFree.net or contact your local authorized representative.



Dormont

FEBCO

Mueller Steam Specialty

POWERS

SAVARD



WATTS Premier

WATTS

Circle 39 on Reader Reply Card

Turning up the heat

(Continued from page 52.)

commercial installations making up the rest. Most of the tankless applications involve potable hot water for bathing, dishwashing, etc. Occasionally they install hydronic heating systems commercially, as well as residentially. Upgrading gas supply systems is a big part of their business, as tankless water heaters require considerably more BTUs than traditional tank water heaters

“Navien has broken the mold for traditional Tankless water heating. They have set the bar up a notch and have made other manufacturers sit up and take notice. Things that separate the Navien Tankless from traditional tankless are that the Navien units consist of two stainless steel heat exchangers as opposed to one copper heat exchanger. This reduces the incidence of scale build up. The A model units, for instance,

have effectively removed the 1/2-gallon-per-minute usage requirement to keep a traditional Tankless running. Navien vents with PVC plastic pipe and can be common vented,” said Massiman.

Reaching beyond the misconceptions

One of the biggest complaints or misconceptions regarding tankless is venting. Standard tankless heaters vent with stainless steel or a concentric kit can be expensive and rather unforgiving to install. Navien eliminated this problem with PVC venting. One of the biggest complaints from end users is having a minimum flow rate to activate the heater—which is usually .6 gpm. Navien eliminates this with their buffer tank on their “A” model. Many contractors believe that a tankless heater can’t deliver enough flow rate to supply a home. Navien’s largest residential heater (NR-240A) will deliver over

11 gallons per minute flow rate at a 35-degree rise. Eleven gallons per minute will allow hot water delivery to as many as five fixtures in a home at one time, which is usually more than enough for a standard size home.

Finally, regarding tankless myths, Navien heaters don’t have to be descaled. With standard tankless heaters, because of their manufactured design and materials, they have a tendency to scale up and have

at a reduced quantity, but you don’t lose all of your ability to provide hot water to the system. When space becomes an issue within mechanical rooms, tankless water heaters can be a solution because they are relatively small compared to traditional tank-type water heaters and boilers with water storage tanks.

Navien in action

“What we did with our latest hydronic heat system was to remove a



Kenny Browning (l) and Tom Massiman, owners of The Hot Water Guys, Houston, Texas, load a Navien tankless unit into one of the company’s vehicle.

build-up of sediment deposits. The Navien system is designed with a stainless steel heat exchanger, and the way it is engineered and designed, it doesn’t create the mineral deposit build-up — so no descaling is necessary. It’s important to note, “Navien designed and engineered its heaters to overcome the limitations that other tankless heaters had; From an engineering and performance perspective Navien has raised the bar in the tankless industry,” said Tipton.

“Common misconceptions of scaling are that you must descale a tankless water heater on a regular basis or they never need to be descaled. Neither is correct. Water hardness and output water temperature determine the frequency of descaling. Navien claims their use of stainless steel in the heat exchangers lessen the instance of scaling,” said Massiman.

The advantages of multiples

Keep this in mind: One of the advantages of multiple units working together — where historically a hot water boiler would be used together with a large water storage tank — is the ability to build in redundancy without necessarily having to double the system equipment. Using multiple tankless units when there is a need to perform maintenance on one, you still have one or more to provide hot water to the system just

central boiler from a building complex and heat it with one Navien tankless machine.

The old system used circulating hot water pumped through 1 1/2" water lines to service five air handlers in an approximate 3,500-sq.-ft. building. We installed a CC240 Navien and related components and severed the water lines to the central boiler. Initially we had expected to have to set the outgoing temperature rather high on the Navien (160°), but found that it was making things too hot too fast, so the temp was set down to a more reasonable 130°F. All five air handlers received plenty of BTUs. The system worked beautifully and we expect to remove other buildings from the central boiler in the near future,” said Massiman.

So the next time you think tankless, don’t limit yourself to small applications. “We’re seeing tankless water heaters working well not just in tract homes, but custom homes, apartments/condos, schools, cafeterias, churches, restaurants, health-care facilities, schools, hotels, firehouses, mall stores, etc. Just about anywhere you would’ve seen a tank or boiler in the past, we’re installing Navien’s and the end users love it because their energy bills are going down as much as 60% and they never run out of hot water!” said Tipton. ■

Jay R. Smith Mfg. Co.
a better way

The Labor Saving, Easy to Install Contractor-Friendly Products from Jay R. Smith Mfg. Co.®

The Jay R. Smith Mfg. Co.® contractor-friendly products are designed with the contractor in mind. These products are designed to save time, require less manpower, and make the contractor’s job easier.

A. -M54 and -M54-M58 for Water Closet Supports
B. Labor Saver® Fixture Support
C. Siphonic Roof Drains
D. Carousel® Roof Drain
E. Roof and Overflow Drain with Deck Plate
F. Low Profile Dome with Deck Plate
G. Protective Floor Drain and Cleanout Covers
H. Formit™ Drain Installation Device for Floor & Shower Drains, and Sanitary Floor Sinks
I. Jubilee Twis-To-Floor® Cleanout Series
J. The Boss Tee, Cleanout and Test Tee
K. Cored Hole Stainless Steel Hydrant Box
L. Guardian Dual Check® Hydrant & Box
M. Enviro-Flo® Trench Drain Series
N. Double Arrow Trench Drain Support Stand
O. Rebar Trench Drain Support Stand
P. Rante-Arrow Trench Drain Support Stand

To learn more, go to Contractor-Friendly Products at www.jrsmith.com.

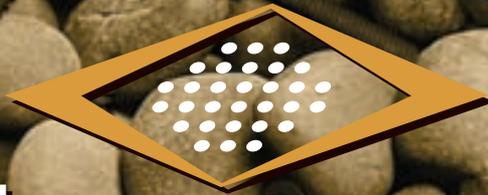


POST OFFICE BOX 3237 • MONTGOMERY, AL 36109-0237 (USA) • TEL: 334-277-8520 FAX: 334-272-7386

www.jrsmith.com

Circle 40 on Reader Reply Card

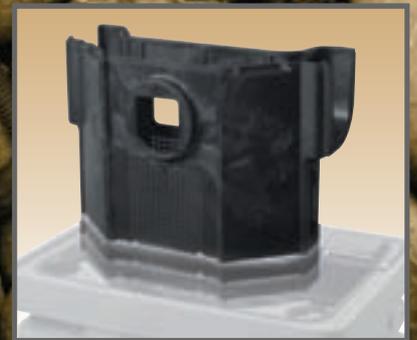
Stop the Junk



SumpBox™

by Liberty Pumps

With debris filter technology



15 Quart Removable
Debris Filter



Separate Easy to
Access Switches

Patent Pending

Fully Assembled

32"L x 24"H x 18"W

Large 41 Gallon Capacity

Long 9.3 Gallon Pump Cycle

1/3 - 1/2 hp Models Available

Liberty Pumps™

Phone 800-543-2550 • Fax (585) 494-1839

www.libertypumps.com

innovate. evolve.

Mining the sun's energy in the Utah Rockies

Park City, Utah was born as a mining town. Silver was mined there and has created a lot of work and wealth over the years. If you get the opportunity to hike or ski the surrounding mountains you, will spot evidence left behind by prospectors. Many of the old buildings and equipment, some dating back to the 1800s, can be seen on the mountainside. Park City Mountain Resort (PCMR) has maintained and upgraded some of the original mining buildings for continued use. One example is the Mid Mountain Lodge. This building originally housed the miners who worked in the area. As a resort property, it has housed the U.S. Olympic team, and served as a warming location and restaurant. Over its 100-year history, this building repeatedly updated, and even relocated. Most

recently, the building has benefited from a \$1 million renovation for the 2008-09 season. It has been a popular gathering place for skiers for many decades.

The resort is currently operated by POWDR Corporation. Over the years, PCMR has received many awards from the industry. PCMR is very proud of the Save our Snow initiative. In 2006, PCMR commissioned a study of global warming effect on the resort and the Utah snow sport industry. In 2008, the resort received the "Green Power Leadership Award" from the EPA. The resort is the largest purchaser of renewable energy in the travel and leisure category. The resort ranks #15 of all U.S. corporations that purchase 100% renewable energy. Brent Giles is the director of Environmental Affairs at the resort. He is constantly



Park City's Mid Mountain Lodge implements a domestic hot water system with a solar thermal drainback system.

seeking way to position the resort at the forefront of environmental initiatives and concepts.

So it came as no surprise when PCMR contacted Harris Dudley Mechanical, Inc. of Salt Lake City to in-

vestigate a solar thermal hot water system for the Mid Mountain Lodge. As you would imagine, the lodge has a large DHW load. Bob Dudley and his team put together a proposal to supplement the DHW system with a solar thermal drainback system. Solar designer, Aaron Cook, took the challenge for the Harris Dudley team. He ran some simulation calculations on the RETScreen software. He quickly realized the payback challenge with a seasonal use building. The lodge is closed at the end of the ski season and the DHW load disappears along with the skiers. The solar thermal system has a short 4-5-month season to work. This is also the coldest time of year to provide solar thermal energy. Bob Dudley nervously approached the PCMR with their proposed design, including the long payback projection numbers, under current seasonal use conditions.

The PCMR board acknowledged the payback period and moved on to the details of the design. The decision was based on the environmentally friendly approach to producing DHW, and in staying true to the PCMR goal of being a leader in the environmentally friendly resort initiative.

Team Harris Dudley was given the go ahead to install the solar thermal domestic hot water system (SDHW). Knowing the unusual conditions and seasonal use, a pressurized drainback system was designed. When not in use, the collectors drain back and are designed to withstand years of service in this type of operation.

This system comprised of ten Cal-effi flat plate collectors 32 square feet each. The 10 collectors were arranged in two 5-collector groups and positioned on the roof with the two 5-collector arrays sloping to the center. This mounting method pro-

(Turn to Utah Rockies, page 58.)

Hot-Shot™

Thaws Frozen Pipes Quickly

No more tearing up floors, breaking through walls, or digging up frozen ground. Eliminate hazardous blow torches. Just carry your Hot-Shot to the job, attach the pipe clamps and plug it into a 115 volt receptacle. In minutes, the frozen pipe will be flowing again.



Hot-Shot 320 – Weighing just 30 lbs., generates 320 amps of thawing power, yet draws just 14 amps. Thaw 1-1/2" diameter lines up to 100 feet long.

Hot-Shot 400 – Clears longer and larger lines with 400 amps of thawing power. It's powerful enough to clear 1-1/2" lines up to 175 ft. long. Just flip the switch and the amp draw drops below 14 amps. while still delivering 320 amps of thawing power.

General
PIPE CLEANERS
www.drainbrain.com

For more information,
visit www.drainbrain.com/specialties
or call 800-245-6200 or 412-771-6300.

MADE IN USA

The toughest tools down the line.™

© General Wire Spring 2010

Circle 42 on Reader Reply Card

NAVIENT Condensing



Combination Gas Boiler



FEDERAL TAX CREDIT
Save 30% of the cost,
up to \$1,500!

Take advantage of Navien's state-of-the-art technology and benefit to customers!

In Today's Market, Cost Savings are Important!

Now customers will enjoy lower installation costs and cash in on low annual operating costs and receive the best payback, compared to conventional combination systems.

- Endless hot water supply (2~3 showers at the same time)
- Ultra condensing efficiency (CAFUE=0.92)
- Space saving design
- 3" SCH 40 PVC venting up to 100' with a maximum of 6 elbows
- Optimal and stable operation
- Eco friendly Navien technology
- Easy installation
- Best warranty

Remote controller
NR-10PU



7-CREATOR
NAVIENT Navien America Inc.



www.navien.com

www.navienamerica.com

Toll Free: **1-800-519-8794**

Circle 43 on Reader Reply Card

Beschloss

(Continued from page 36.)

can be paid directly to the contractor and/or subcontractor from the gross cost to the customer. On top of that, the Feds have weighed in with a 30% credit against Federal income tax—starting in January 1 this year and running through December 2016.

Even a state-wide tax rebate is under consideration, but held up by California's deficit problems. However, if an installation produces a surplus of solar energy, the utility is required to buy this amount at predetermined market prices. Such an initiative was recently signed into law by Governor Arnold Schwarzenegger.

Between the Federal Govern-

ment's choice of the Coachella Valley as a major solar energy production site, plus generous incentives to installing clients means that success is practically guaranteed to a geographic area tailor-made for this approach to renewable energy.

Even if cap-and-trade is not imposed on America, the Environmental Protection Agency will enforce an even stricter mandate, guaranteeing

soaring electric price increases. Just imagine what such prices will look like 10 years from now. The excess energy that a home or business owner produces will be subtracted from soaring electricity bills. And when one eventually sells their business, this benefit should add to the structure's assets. This is a win-win all the way. ■

To stay up to date with my daily blogging, be sure to log on to my hyperlink at www.theworldreport.org and then click on "Morrie's page," announced in the middle of the World Report website. Your recommendation for my blog, as well as the individual columns, will be much appreciated.

Utah Rockies

(Continued from page 56.)

vided an attractive look, as the system will be viewed by perhaps millions of visitors over the course of its projected lifetime. The system also uses a 40-gallon drainback tank and a 120-gallon Caleffi SolarCon insulated storage tank. The whole package is controlled by a Caleffi I-solar drainback control. The system feeds the solar pre-heated water to and electric boiler and two additional 80-gallon storage tanks. A pipe insulation upgrade was also included in the job to limit the standby loss from piping and tanks.

Mounting the collectors proved to be a challenge for the crew. The roof had a substantial build-up from years of remodeling, and locating adequate structural members took some time. A rough terrain crane was used to safely place the collectors on the steep pitch. This installation was one of the first in the Park City area to be permitted and the Harris Dudley team worked closely with the Park City Building department. Providing roof loading and structural data was required for the permit and inspection.

Harris Dudley has chosen to walk the solar walk, as well as talk the talk. A well-positioned solar thermal array greets all that visit their Salt Lake location. It is a nice addition to their world-class hydronic showroom. The display shows how well radiant and solar thermal can exist together. A data logger on the solar enforces the work-ability of solar thermal energy harvest in the Utah Rockies.

Instead of mining silver, with the help of Harris Dudley Co., the resort is mining sunshine in the Utah Mountains. ■

Circle 44 on Reader Reply Card

Phc News presents...

HoloPalooza



2

**BACKSTAGE PASS
VIP ACCESS
WITH DAN HOLOHAN**

With Special Guests

 **Lochimar**

 **Taco**
comfort made easy

 **BRADFORD WHITE**
WATER HEATERS

 **uponor**

 **WATTS**

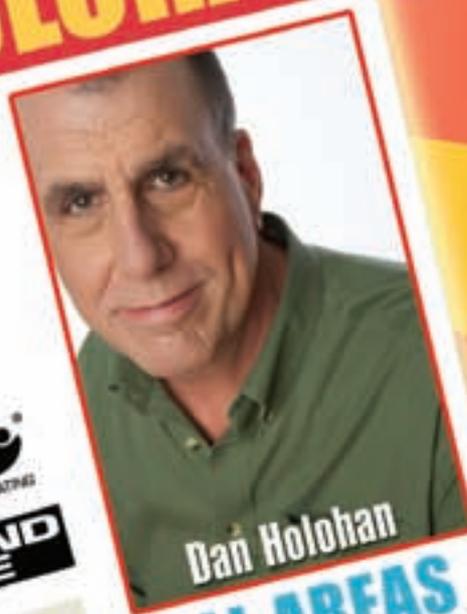
 **viega**

 **QUIETSIDE**
eternal
ADVANCED HYBRID WATER HEATING

 **LEGEND VALVE**

 **Navien**

 **sime**



Dan Holohan

ALL AREAS



DATE/TIME
Feb. 9-11
8 pm EST

PRICE
FREE

ROW/SEAT
7B

Webcast with Dan Holohan!
February 9, 10, 11 at 8 pm EST.

Come join Dan Holohan as he interviews manufacturers at the AHR Show. Don't miss:

- In-depth interviews with manufacturers about the latest company news and products
- A great opportunity to get a first-hand look at new product technology
- Dan Holohan's unique perspective

It's like you were on the show floor as a VIP guest!



Stage set for innovation

Continuing a tradition of leadership with innovations like Copper-Fin II®, ARMOR®, SHIELD®, KNIGHT® and SYNC®, the latest breakthrough from the manufacturer will debut at the 2010 AHR Expo in Orlando, Florida. Visit Booth #1500. Lochinvar.

Circle 101 on Reader Reply Card

PUREFIRE® boiler

PUREFIRE® gas-fired, high-efficiency condensing boiler for residential and commercial applications is available for natural or LP gas. Direct vent, sealed combustion with efficiency of up to 97.3% (residential) while the commercial-sized PF-399 boiler offers 95.5% efficiency. Residential models are ENERGY STAR® approved. Six sizes; ASME and ETL U.S., Canada certifications. Features unique condensate system with built-in neutralizer component and float switch protection, stainless steel burner and heat exchanger, 120v convenience outlet and low NO_x operation. Fully modulating burner. Peerless Boilers.

Circle 102 on Reader Reply Card

Stainless Steel Indirect

Made of high-grade 444 ferritic stainless steel to resist chloride corrosion, tanks have a stainless



steel heating coil for rapid recovery and high flow rating. A surface aquastat measures temperature inside the tank. Polyurethane foam insulation. Energy Kinetics.

Circle 103 on Reader Reply Card

★ Phc News product of the month ★

Condensing hybrid water heater

Using patented full-flow design and stainless steel heat exchanger with a built-in two-gallon reserve, Eternal Condensing Hybrid combines the flow capacity of traditional tanks with the continuity of modern tankless units to supply consistent endless hot water with good pressure for up to five simultaneous applications. The reserve makes Eternal recirculation friendly and can be used even with retrofit “comfort” pumps. Designed for easy installation, either wall mounted or floor standing with water connections on unit’s top. Vented with 2” or 3” PVC up to 100 ft, direct vent sealed combustion convertible, natural gas or propane on the same unit, and the indoor unit also can be converted for outdoors. Features a full modulation infrared burner that is dual activated by both a thermostat similar to a tank, or flow sensing similar to tankless. Grand Hall.



Circle 100 on Reader Reply Card

Plymouth boiler

The new Dunkirk Plymouth Xtreme PWXL features a combination aquastat and low water cutoff in one control and digital temperature display with status indicator lights. The control is user friendly — with simple settings — and programming is not necessary. Additionally, the boiler is equipped with a terminal strip for thermostat connections. The new PWXL complies with state codes that require a low water cutoff and is 100% factory

tested. Dunkirk.

Circle 104 on Reader Reply Card



Mod-con wall-hung boiler

Low-NO_x, 98% efficient Baxi Luna HT wallhung boilers all bear ASME H-Stamp, and are gas/propane field



Ultra Series 3 boiler

The Ultra Series 3 boiler features AFUE efficiencies of 92.0-93.0%, some of the highest efficiencies in the industry, and when used in low-temperature applications such as radiant heating, it can achieve efficiencies up to 98.0%. Designed to be environmentally friendly and exceeds the highest North American environmental air-quality standards. Weil-McLain.

Circle 105 on Reader Reply Card



convertible using QAA73 controller. HT 380 combi heating & DHW boiler produces 3.9 gpm at 80°F rise. Residential models packaged with polypropylene coaxial venting, QAA73 and Sentinel water treatment. Four heating-only models up to 358M BTU/hr output; all adaptable to ABS/CPVC venting up to 196 feet. Marathon Boilers.

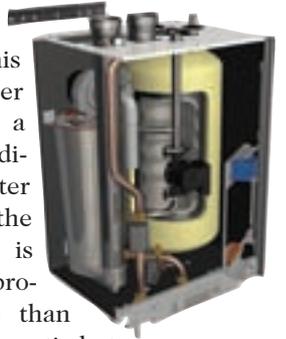
Circle 106 on Reader Reply Card

High efficiency space heating & DHW

The Prestige Excellence is a condensing wall-mounted boiler with a built-in “tank-in-tank” indirect fired water heater.

The first of its kind, this 95% afue boiler incorporates a 15-gallon indirect fired water heater in the cabinet that is capable of producing more than 180 gph of domestic hot water (DHW). Features a uniquely designed stainless steel heat exchanger and is fully modulating between 30,000 and 110,000 Btu/hr. Triangle Tube.

Circle 107 on Reader Reply Card



Intelligent control valve

The Icon System™ next-generation gas control valve will be standard

equipment on most of the manufacturer’s residential and light duty commercial products at no additional cost. Developed with Honeywell®, features advanced temperature control, exclusive performance software, intelligent diagnostics, pilot-on-indication, millivolt powered operation, separate immersed thermowell, and an integrated Piezo igniter. Also available are universal retrofit kits for most of the manufacturer’s existing models. Bradford White.

Circle 108 on Reader Reply Card

Accelera® 300 water heaters

The new Accelera® 300 reduces hot water costs up to 80%. The new concept Accelera® 300 works like an air conditioner but instead of dumping the heat outdoors, it puts it into the 80 gal tank of water. The beauty of heat pump water heating technology is that electrical energy needed to create hot water is greatly reduced compared to a conventional electric tank type water heater. The Accelera® 300 can extract up to 80% of its energy requirements from the energy in the air around it. The Accelera’s compressor and fan consume only 1kWh of electricity to generate the heat equivalent of 3 – 5kWh. Stiebel Eltron.

Circle 109 on Reader Reply Card



One Simple Tool.



Making Plumbers Happy Everywhere.

EASY-CUT JAWS™ Faucet Removal Tool

The Tool Every Plumber Needs in His Toolbox.

Quickly & safely cuts through all faucet mounting hardware, saving time on every new faucet installation.

- Fits 3/8" & Larger Standard Size Drill Chucks
- Works on Faucets with 1/2" NPT Mounting Shanks (Most Faucets)
- Patented Clear Chip-Guard Collects Chips, for Safety & Easy Clean-Up
- Durable, High Quality Bi-Metal Cutter
- Made in the USA

Quantity Pricing Available
Call for Details

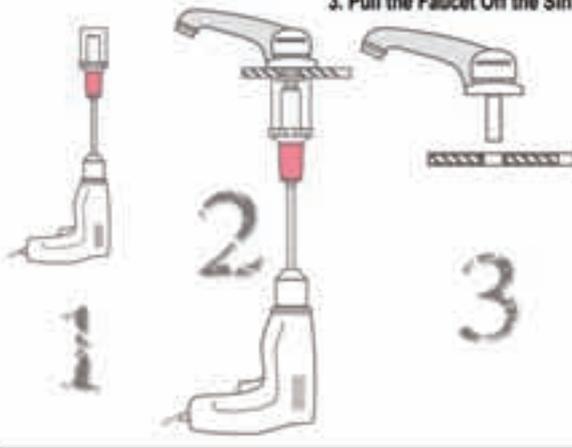


Part #08-0800 CALL & ORDER TODAY: 1-877-264-2645

Easy-Cut Jaws™ is just one of many plumbing essentials offered by CMI. Call today to request a free catalog.

3 Easy Steps to Remove a Faucet:

1. Put the Easy-Cut Jaws™ in your Power Drill.
2. Drill Away the Jam Nuts, Zinc, Brass and Plastic.
3. Pull the Faucet Off the Sink.



Mention This Ad
& Get FREE Freight*

*Free freight for orders
with this item only.

Distributed by CMI Inc., South Hackensack, NJ

Circle 45 on Reader Reply Card

Condensing tankless water heater

New T-H2 high efficiency condensing tankless water heater allows installers to vent with PVC instead of stainless



steel. It features a front panel LED screen that displays temperature settings and codes for easier maintenance and troubleshooting, a thermal efficiency

around 92% and a maximum flow rate of 9 GPM. Four units can be linked without an additional control box, making the T-H2 ideal for light commercial and heavy residential applications. **Takagi.**

Circle 111 on Reader Reply Card

Phoenix Evolution

The new Phoenix® Evolution melds



hydronic space heating and domestic hot water (DHW) with complete system control in a single, compact, 96%-efficient package. One Phoenix Evolution unit effectively replaces a gas-fired water heater, a 135,000 BTU/hour boiler and a buffer tank in a space the size of your average residential water heater. **Heat Transfer**

Products (HTP).

Circle 112 on Reader Reply Card

Boiler control system

Sage2 Boiler Control System (SBC2) for all Alpine condensing boilers is the next generation of advanced,



user-friendly electronic controls that offers more features and is easier to use. Designed in partnership with Honeywell; includes a convenient LCD touch-screen display monitor that shows all information and diagnostics in “full sentences” making it very simple and easy to understand. Other features make Alpine boilers even more flexible and easier to install. **Burnham.**

Circle 113 on Reader Reply Card

★ Phc News product of the month ★



Condensing combination gas water heater

Condensing Combination tankless water heater is versatile and ideal for domestic water heating and space-heating applications, including in-floor radiant heating, base-board heating and fan assistance-air handler heating applications. It also features signature condensing technology and uses PVC venting which lowers the cost of installation and simplifies the process significantly. The Combi unit has all the traditional lifestyle benefits of proprietary tankless technology and can offer substantial energy savings for end consumers. **Navien.**

Circle 110 on Reader Reply Card



Tankless with thermostatic control

The HomeAdvantage Series offers a full line of “Green” premium electric tankless water heater for the whole home. Has a digital micro processing fingertip temperature control with LED display and patented self-modulating staged heating element technology for maximum efficiency. Provides an endless supply of safe hot water, using the exact amount of energy needed to heat the water. Packaged in a compact, sleek, durable stainless steel body with installation friendly quick connect water connections. **Eemax.**

Circle 117 on Reader Reply Card

Bobcat boiler

The 93% efficient Bobcat is built in the USA. Two models: 120,000 Btu/h and 200,000 Btu/h with 4:1 turn-down. Wall-mounted or floor standing, Bobcat has a five-year parts and labor warranty included. **Slant/Fin Corp.**

Circle 114 on Reader Reply Card



Gas condensing water heater

Employing a top-fired burner and blower combination for more effective combustion, the power-direct-vent Vertex 100 delivers a continuous flow of hot water at an industry-leading 95% thermal efficiency with 100,000 Btu/h capacity. Combustion system draws air in and vents outdoors



via sealed vents. Advanced diagnostics record performance history; a backlit LCD display details model functions including accurate temperature controls. **A.O. Smith.**

Circle 118 on Reader Reply Card

Bimini condensing boilers

The Bimini (BWC) series of high efficiency, gas fired condensing boilers features a cast aluminum alloy heat exchanger. Offered in a wall-mounted

version in 4 sizes with inputs from 70 to 151 MBH; and a freestanding version in 5 sizes with inputs from 150 to 425 MBH. All models feature a pre-mix burner with full modulation and low NO_x emissions and efficiencies up to 95.5% AFUE on the residential models and 96.1% on the commercial models. Standard microprocessor based control system manages all boiler functions. **Crown Boilers.**

Offered in a wall-mounted version in 4 sizes with inputs from 70 to 151 MBH; and a freestanding version in 5 sizes with inputs from 150 to 425 MBH. All models feature a pre-mix burner with full modulation and low NO_x emissions and efficiencies up to 95.5% AFUE on the residential models and 96.1% on the commercial models. Standard microprocessor based control system manages all boiler functions. **Crown Boilers.**

Circle 116 on Reader Reply Card



ASME rated tankless water heaters

The Miyako Hybrid Hotel in Torrance, California is using eight ASME-rated NC380s in the newly built LEED certified hotel. All NC380s are modulated with a single system controller to provide hot water to all guest rooms without interruption. Manufacturer is the first tankless maker to achieve ASME certification. **Noritz.**

Circle 115 on Reader Reply Card

Heat pump water heater

The new integrated air-source HP-50 heat pump water heater offers an industry-leading energy factor of 2.0, or more than twice the efficiency of a standard electric storage water heater. Will help a family reduce its carbon footprint by nearly two tons annually. Qualifies for a federal tax credit as well as many state and utility rebates and incentives. For residential applications, both new construction and drop-in replacement of existing water heaters, the unit has a storage capacity of 50 gallons and meets the qualifications for an ENERGY STAR® listing. Measures only 21" dia. and 75.5" tall. **Rheem Water Heating.**



Circle 119 on Reader Reply Card

INTELLIGENT DESIGN. THE "BIG" BANG OF THE PLUMBING UNIVERSE.



2009-2010
Stimulus Package
TAX CREDIT
Now Available
For Qualifying Eternals,
Contact your Eternal
Rep for details.

SEE OUR EXHIBIT
**AHR
EXPO**
January 25-27, 2010
ORLANDO
www.ahrexpo.com
BOOTH#4666

+HYBRID CONDENSED

98%+
efficiency



Eternal Condensing Hybrid combines tank and tank-less technologies to continuously heat water with consistent pressure and temperature for simultaneous taps. 75% smaller than tank but 300% more output is suitable for residential and commercial applications.

All stainless steel heat exchanger with built-in small storage eliminates startup lag to save water and maintains consistent pressure and temperature at 98% efficiency. Patented self-cleaning preserves efficiency over the 20 year residential / 10 year commercial warranty.

2" or 3" PVC venting up to 100 ft., Power or Direct Vent, In or Outdoor, Floor or Wall Mount, LP or NG convertible on same unit makes easy and flexible installations.

See more at www.eternalcondensed.com

Circle 35 on Reader Reply Card

US Patent No 6,945,197 and others pending

Housing Authority gets greener with Siemens

BUFFALO GROVE, ILL. — A year after the Building Technologies Division of Siemens Industry, Inc. started a



\$2.5 million performance contract implementing various energy-saving and resource conservation measures for the Greenville Housing Authority (GHA), construction-phase data reveal the North Carolina housing authority project is exceeding its estimated construction period energy savings. According to Siemens' recent analysis, energy savings will likely exceed the guaranteed annual amount by 5 – 10 %.

Under the HUD Green Initiative, which encourages owners and operators of low-cost housing developments to enact procedures and implement technologies that improve sustainability in their operations, the GHA engaged Siemens to help reduce energy and water consumption throughout its residential buildings. The performance contract Siemens executed included installing new energy-saving residential lighting and low-flow plumbing fixtures which reduced water demand significantly.

Haws unveils new website; PMI elects Hayes

SPARKS, NEV. — Haws Corporation® launched its redesigned product website — www.HawsCo.com. The new website, as part of a larger re-branding effort, has been in the works since May 2009 and will offer users with a variety of advanced features and resources including an innovative product search option,

video library, product case studies, industry links, white papers, as well as access to podcasts and webinars.

PMI elects Hayes

Haws Corp. also announced that Casey Hayes, director of Engineered Solutions, has been elected as a director at large for the Plumbing Man-

ufacturers Institute (PMI). Hayes has been with the Haws Corp. for 22 years and has served on a wide variety of industry standard development committees, as well as having authored several hundred press articles and papers.



Hayes

SeeSnake® digital adaptor

The SeeSnake® digital adaptor is an accessory for the microEXPLORER™ digital inspection camera that will



allow users to add the ability to digitally record to existing SeeSnake camera inspection systems. The new adaptor connected with the microEXPLORER digital inspection camera can be used on any video-out enabled monitor, including SeeSnake VHS or DVD monitors. RIDGID.

Circle 150 on Reader reply Card

Why aren't you more successful?

Is it for lack of trying? Is it for lack of information? Maybe you are just overwhelmed with all that you are supposed to do to be a profitable, successful contractor? Maybe you are trying too hard. It can be easier.

Here's the solution: The Step by Step Program. We can show you how. One simple step. One step a month. Business success made easy.

The Step by Step Success program. **\$1 for your first trial month.**
One step to success.

Go to www.StepByStepBusinessBuilding.com
or call 877.629.7647

Circle 47 on Reader Reply Card

Sales challenge boosts 2009 revenue for plumbing, HVAC and electrical businesses

LITTLE CANADA, MINN. — Nexstar® Network's first network-wide Game On Sales Contest sparked enthusiasm and everyone's gleeful amazement, ignited over \$18 million in recorded revenue for member companies within the competition's six-week stint. The top seller sold nearly a half-a-million dollars during that time, proving that it is possible to sell and succeed during an economic recession.

"In the current economy, the game has helped Nexstar member companies focus on the positives. Technicians and salespeople got excited about selling and bringing in additional revenue in 2009," says Scott Pearson, Nexstar coach and co-creator of the game with Nexstar Business Coaching Manager, Jack Tester. "I'm pleased to say the game results exceeded our expectations."

The sales contest drew 483 individuals from 70 companies who sold services for six weeks (October 15 – November 30), generating between \$100,000 and \$3 million in revenue for their individual companies. These sales athletes competed in five categories, for five grand prizes, provided by Nexstar. Categories included plumbing technicians, HVAC technicians, electrical technicians, sewer salespeople, and HVAC salespeople. They focused on selling big-

ticket sales with a minimum invoice requirement of \$2,000 or greater for technicians and \$4,000 minimum for HVAC and sewer sales. Players submitted invoices on the official game website followed by their managers who had to verify each sale. The competition was monitored in real time. All sales qualify for points (5 points per \$1,000 in sales). The points could then be redeemed by players for a broad range of prizes.

At the end of the game, after a lot of friendly banter back and forth between competitors, top players from each category were selected and placed into a random drawing for the grand prize. Brad House from AAA Service Plumbing in Arvada, Colorado was selected the winner of a trip for two to the Citi BCS National Title Football Game, including; airline tickets, four-star accommodations, two game tickets, meals and limo to and from the game. The remaining (4) category winners received a weekend getaway to a pro sports game of their choice (including game tickets, hotel and meal vouchers).

"It was a level playing field for technicians and sales staff," said Scott Pearson. "Since it was an individual competition and not company-wide, the size and resources of the company provided no advantage."

B&G's 'Schoolhouse' announces 1Q 2010 schedule

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

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

The 1st quarter Schoolhouse seminars include:

- Design and Application Seminar

— January 18-20

- Modern Hydronics Basic Seminar — February 1-3
- Modern Hydronics Advanced Seminar — February 8-10
- Service and Maintenance Seminar — February 15-17

- Steam System Design Seminar — March 1-3

- Design and Application Seminar — March 8-10

- Modern Hydronics Basic Seminar — March 22-24

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



SOFTWARE APPLICATIONS

Estimating Software
For Plumbing & Mechanical Contractors

Commercial - Industrial - Residential
Plumbing - Piping - Ductwork

With On-Screen Digitizer!

- Windows software
- Designed by an estimator
- Responsive technical support
- Training included
- Easy to learn and implement
- Affordable
- Download to Microsoft Excel
- PHCC, MCAA, & SMACNA labor rates available
- Customizable SM shop specs
- Plumbing & piping assemblies included
- Price updates available
- Takeoff with a mouse, Scalemaster, or a digitizer
- With the new On-Screen Digitizer, takeoff plans right on your monitor



FAST EST INC.
800-828-7108
www.fastest-inc.com



MANUFACTURERS & SUPPLIERS

Having Trouble Finding
Drinking Fountain &
Water Cooler Parts?



800-518-5388



DrinkingFountainDoctor.com

FRANCHISES

Join The Rooter-Man Team
WWW.ROOTERMAN.COM



Rated #1 Plumbing Franchise

Entrepreneur Magazine "Franchise 500"

New Concept In Franchising

No royalty on percentage of sales

LOW FLAT RATE FEE BASED ON POPULATION

Reserve your exclusive territory

Call 1-800-700-8062

FRANCHISE PACKAGE \$7,950.

SEEKING REPS

REPS WANTED

Manufacturer is seeking professional representation in several US territories. Products include solar storage tanks, indirect water heaters, hot water storage tanks, and other hydronic, solar, and water heating products. Please fax resumé and line card to 508-422-9881 or email:

gcelorier@heat-flo.com

Classified advertisement rates start at \$140 per column inch, with rates adjusted for extra insertions.

Call **Sadie Bechtold** at 847-564-1127 to place your ad.



2010 water heating forecast feels tepid at best

BY JOHN MEISENBRINK,
editor

“How do you see 2010 taking shape?” Without a doubt — in all my meetings with industry experts last year — that was by far the number-one question. Terms like bottoming out, plateauing, soft and flat were heard in mechanical and contracting firms across the country — but that is the reality of this current economy. After a dismal 2009 in regard to water heating sales, perhaps there may be a glimmer of hope in 2010, but no quick fix is imminent. “In 2010, we expect the water heater market for new construction to be down another 7% over 2009. We anticipate the market for replacement water heaters will also be down slightly, about 2%. We expect most of the softness in the first half of 2010, with improvement, albeit slight, in the second half,” said Bruce Carnevale, vice president — sales and marketing, Bradford White.

With consumer confidence down, unemployment uncertainty, lending and credit stagnant and residential units down — with the commercial construction sector wagging the residential dog — the water heating market has a battle on its hands. “I think the outlook is more of same. Without a recovery in construction/bank lending policy, there is little hope for a sustained recovery. The stimulus money has little effect on the economy, except for raising the awareness of energy retrofits,” said Stirling Boston, director of marketing, Lochinvar Corp.

The problems in the commercial real estate mar-

ket will probably be an additional factor as far as contractors are concerned, with more vacant space and fewer leasehold improvements. Contractor margins have already shrunk dramatically in both residential and commercial sectors, and 2010 will probably see continued price pressure on contractors. And that price pressure could correlate to contractor cannibalization, as they try to outbid each other for jobs and end up devouring their own in the industry.

Most experts are keeping their eye on the commercial sector, because if that is yet to bottom out, the PHC industry may be in for a long year. Some commercial vertical markets are stronger than others, and some need “stimulation.” Segments such as healthcare seem to be picking up a little, but city and state funding problems have put pressure on school funding. “I do believe there will be opportunities for high-efficiency conversions for both boilers and water heaters in 2010, but continued financial incentives will be very important,” said William R. Root, vice president, sales and marketing LAARS Heating Systems Company.

Some optimism may lie ahead in what can only be described as a cloudy water heating crystal ball. “2010 will continue to be a very tough year again for the water heating market. However, there are some bright spots. In particular, the high-efficiency market for commercial water heating seems to be strong. Water heating boilers and tank-type heaters are able to take full advantage of the condensing technologies (because of the lower return water temperatures) than most heating applications, and the incentives are there for

high-efficiency equipment purchases,” said Root.

The 2010 road to recovery undoubtedly will encounter uncertainty, yet hope. We still may experience some tough times straight out of the gate, and stabilization may hinge on consumer confidence in the market, and the real need for certain water heating products themselves. “One of the biggest challenges for contractors in 2010 will continue to be the consumer’s reluctance to invest in higher priced, higher efficiency residential products. Because of the poor economy, consumers in 2009 were looking for the lowest up-front cost water heating option. We expect that trend to continue in 2010 until consumer confidence improves later in the year. Certain incentive programs, such as ENERGY STAR and individual state rebate programs for higher efficiency water heating products should help to mitigate weak consumer confidence. To what extent is still unknown. Contractors should take the opportunity to investigate new niche markets such as solar, geothermal and water heater accessories for leak detection and enhanced performance,” said Carnevale.

NEXT ISSUE...

- Drain Cleaning
- Lead-free Valves
- High-efficiency Circulators

ADVERTISERS' INDEX

Bradford White43 www.bradfordwhite.com	General Pipe Cleaners, a div. of General Wire Spring31, 56 www.drainbrain.com	Lochinvar.....33 www.lochinvar.com	Stiebel Eltron49 www.stiebel-eltron-usa.com
Bell & GossettIBC www.bellgossett.com	Heat-Flo27 www.heat-flo.com	Murray Corp.10 www.murraycorp.com	Taco.....28, 41 www.taco-hvac.com
Benjamin Franklin Plumbing.....9 www.thankyoubenjaminfranklin.com/phc	HeatingHelp.com58 www.heatinghelp.com	Navien25, 57 www.navienamerica.com	Takagi16 www.takagi.com
BurnhamIFC www.burnham.com	Heat Transfer Products.....7 www.htproducts.com	Nexstar Network.....24 www.nexstarnetwork.com	Triangle Tube3 www.triangletube.com
Chicago Faucets23 www.chicagofaucets.com	InSinkErator12, 13 www.insinkerator.com	Noritz47 www.noritz.com	Uponor21 www.uponor-usa.com
Dunkirk.....19 www.dunkirk.com	Irwin/Bernzomatic.....45 www.bernzomatic.com/quickfire	Precision Hydronics46 www.phpinc.us	Versablock52 www.versablock.com
Eemax8 www.eemaxinc.com	John Guest.....44 www.johnguest.com	RIDGID15 www.ridgidforum.com/press_snap	Watco50 www.watcomfg.com
Energy Kinetics14 www.energykinetics.com	Kissler61 www.kissler.com	Saniflo48 www.saniflo.com	Watts53 www.watts.com
Etenal Hybrid Water Heater.....63 www.eternalcondensed.com	Liberty Pumps55 www.libertypumps.com	Slant/Fin29 www.slantfin.com	Webstone4, 5 www.webstonevalves.com
G-O-N.....51 www.glueonnozzle.net	Link-Tech.....6 www.linktechtj.com	Smith Mfg. Co. Jay R.54 www.jrsmith.com	Weldbend.....34-35 www.weldbend.com
		Spirotherm.....17 www.spirotherm.com	Woodford Mfg.11 www.woodfordmfg.com
		State Industries37 www.statewaterheaters.com	Zurn.....Back Cover www.zurn.com

Phc News (USPS number 022-074) is published 12 times yearly by TMB Publishing Inc., 1838 Techny Ct. Northbrook, IL 60062; tel. 847/564-1127; fax 847/564-1264. No part of this publication may be reproduced, stored or transmitted in any form or by any means, mechanical, photocopying, electronic recording or otherwise, without the prior written permission of TMB Publishing Inc. Phc News is delivered free of charge to qualified subscribers in the U.S. and Canada. Others: U.S., U.S. Poss. and Canada, \$100/yr.; two-year annual subscription rate U.S. and Canada, \$155; other countries, \$200/yr. or \$300 for two year (U.S. funds) plus \$20 surface postage. Single copies, \$15.

Application to mail at Periodicals Postage Rates is pending at Northbrook, IL and additional mailing offices.

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

uses only 10 watts
of electricity.



ditto.



Introducing **ecocirc^{e3}** series, the energy-saving,
high-performance potable hot water pump.

Efficient performance on as little as 10 watts.

- Uses 68 percent less energy compared to a standard circulating pump
- Delivers instant hot water to an entire single-family home or apartment

Reduced waste at every tap.

- Delivers instant hot water at every tap, no matter the distance from the water heater or time of the year
- Resistant to scale build-up, ensuring optimal flow

**Innovative ECM
(Electronically Commutated Motor) Technology.**

- Permanent magnet motor maximizes efficiency
- Spherical motor design for long-lasting, silent, maintenance-free operation
- No shaft, no seal



For more information, contact your Bell & Gossett
Representative or visit www.bellgossett.com



Circle 48 on Reader Reply Card



Engineered for life



www.zurn.com

Zurn has a 100-year tradition of developing quality engineered products to meet the growing needs of water conservation, water safety, water control and water comfort. Our product offering combines both value and performance to deliver significant savings for the building owner. Zurn paired performance fixture systems provide a complete commercial plumbing product solution.



The Pint®

Zurn EcoVantage® Ultra-Low Consumption High Efficiency Urinal Flush Valve System



According to the EPA, nearly 80% of the urinals in use today—approximately 9.6 million fixtures—exceed the maximum flush volume set by federal standards. Replacing these inefficient fixtures with Zurn high-efficiency flushing urinals can provide an 88% water savings per flush compared to a 1.0 gpf urinal, without sacrificing performance.

NEW CONSTRUCTION | LABOR SAVING PRODUCTS | LOCAL INVENTORY | RETROFIT
HIGH PERFORMANCE SOLUTIONS | WATER CONSERVATION | LEED ACCREDITED



ZURN INDUSTRIES, LLC
1801 Pittsburgh Avenue, Erie, PA 16502
814-455-0921, Fax 814-875-1402
www.zurn.com

Circle 49 on Reader Reply Card