pe09_pgs_01_03rev_Layout 1 8/24/11 10:07 AM Page 1

The Authoritative Source for Plumbing, Hydronics, Fire Protection and PVF

Plumbing Engineer®

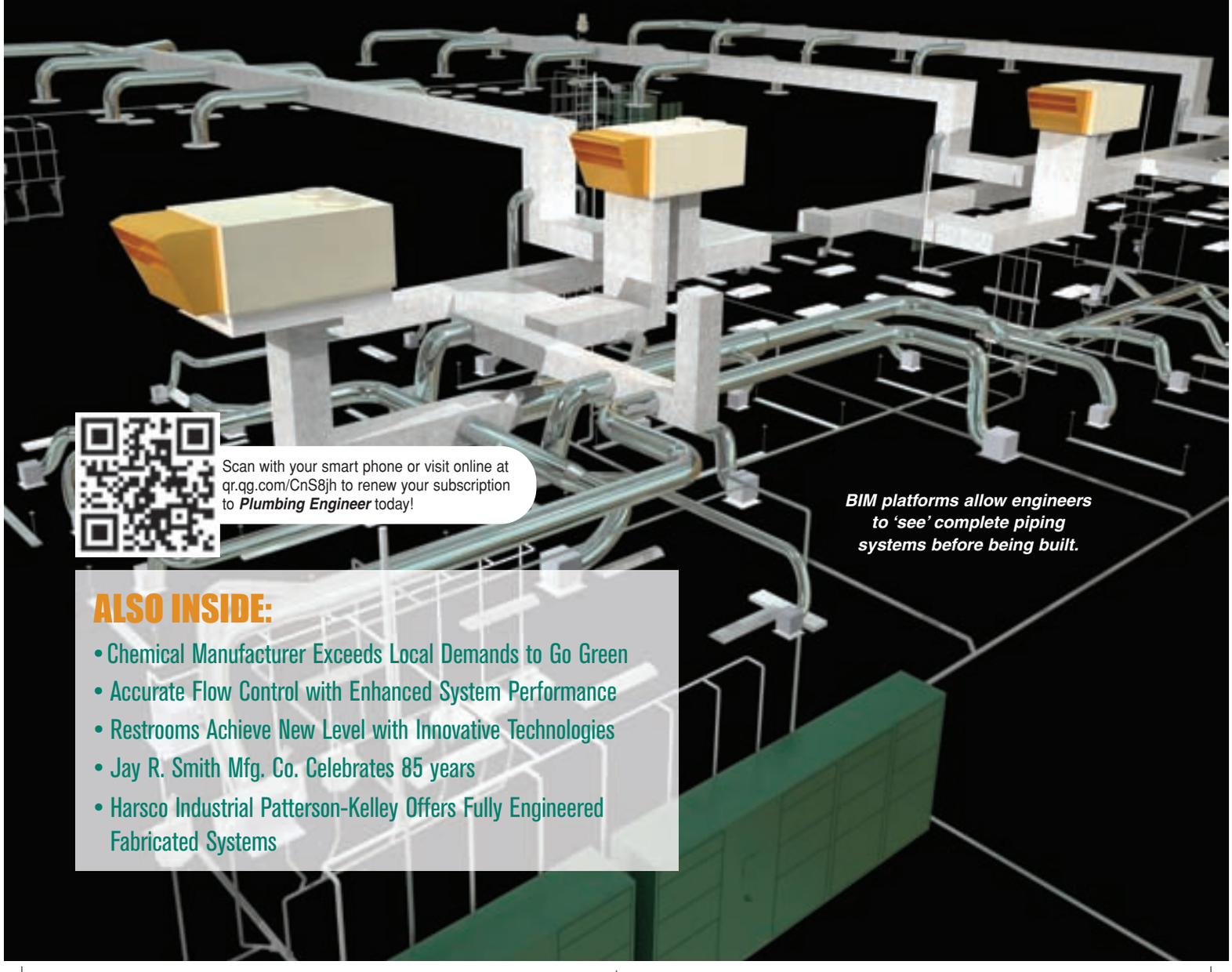
A TMB Publication

September 2011

WINNER 2010 APEX AWARDS FOR PUBLICATION EXCELLENCE

Design Visualization

Scan with your smart phone and follow us on Twitter



BIM platforms allow engineers to 'see' complete piping systems before being built.

Scan with your smart phone or visit online at qr.qg.com/CnS8jh to renew your subscription to ***Plumbing Engineer*** today!

ALSO INSIDE:

pe09_pgs_01_03rev_Layout 1 8/24/11 10:00 AM Page 2

INNOVATION INSIDE & OUT

INTRODUCING THE NEWLY-REDESIGNED

The ISOLATOR UNI-FLANGE BALL VALVE® with ROTATING FLANGE & MULTI-FUNCTION DRAIN

NEW Multi-Function Drain

PURGES BEFORE OR AFTER PUMP

NEW Snug-Fit Rotating Flange

SECTION REMOVED TO SHOW INTERNAL CONSTRUCTION

PATENTED TECHNOLOGY

Webstone
VALVE INNOVATION

Learn more:
www.webstonevalves.com/isolator
(800) 225-9529

Circle 1 on Reader Reply Form on page 86

pe09_pgs_01_03rev_Layout 1 8/24/11 10:00 AM Page 3

Plumbing has been transformed.

Make your washroom more hygienic and efficient with Encore electronic lavatory faucets. Our touchless technology reduces the spread of germs, offering guests and employees a safer hand washing experience. Plus, an instant on/off sensor provides significant water and energy savings. Innovation that's good for people and the environment. That's the beauty of Encore.

Encore®

PREMIUM PLUMBING PRODUCTS

Circle 2 on Reader Reply Form on page 86

encoreplumbing.com 800-526-3694

©2011 Component Hardware Group, Inc. All rights reserved. Encore is a registered trademark of Component Hardware Group, Inc.

pe09_pgs_04_05_Layout 1 8/24/11 10:02 AM Page 4

INSIDE THIS ISSUE

Volume 39, Number 9, September 2011

Plumbing Engineer
A TWB Publication

FEATURES

What Can BIM Do For You?

Many MEP engineers and designers are looking for ways to streamline their design processes, and BIM is the answer.

Story on page 34

Chemical Manfacturer Exceeds Local Demands to go Green

Boremco recently funded major mechanical system improvements, resulting in a 75 percent decrease in energy costs. **Story on page 38**

Accurate Flow Control with Enhanced System Performance

Pressure independent control valves (PICVs) have solved the vxing issue of regulating accurate flow over a wide range of pressure variations. **Story on page 42**

Restrooms Achieve New Level with Innovative Technologies

Commercial restroom design has seen a number of innovations and significant advancements.

Story on page 46

Jay R. Smith Mfg. Co Celebrates 85 years

Prospering under the fourth generation of Smith management, Jay R. Smith Mfg. Co. has been developing engineered plumbing and drainage products for decades. **Story on page 52**

Harsco Industrial Patterson-Kelley Offers Fully Engineered Fabricated Systems

Plumbing Engineer conducts an exclusive Q&A with Harsco Industrial Patterson-Kelley.

Story on page 66

COLUMNS

Visualization of a piping system. AutoCAD Revit MEP Suite and Autodesk 3ds Max software products were used in the design process. ***Photo courtesy of Design West Engineering***

INDUSTRY NEWS & OTHER DEPARTMENTS

pe09_pgs_04_05_Layout 1 8/24/11 10:02 AM Page 5

Rheem

The new degree of comfort.℠

COMMERCIAL WATER HEATERS

COMMERCIAL

SOLUTIONS

The Rheem SPIDERfire is the perfect solution for many restaurants, schools, hotels and laundromats looking for a highly efficient way of producing large volumes of hot water — it's sure to take a bite out of fuel costs:

- 95% thermal efficiency
- Six ultra high efficiency 100-gallon models
- Unique multi-pass heat transfer system
- Operates on natural gas or LP
- Ultra low NOx certified
- Single-pipe power vented or 2-pipe power direct vented
- Eye-level LCD scrollable electronic diagnostic system

Visit Rheem.com/spiderfire today or your local independent Rheem distributor to learn more.

SPIDERfire®

Circle 3 on Reader Reply Form on page 86

INTEGRATED AIR & WATER

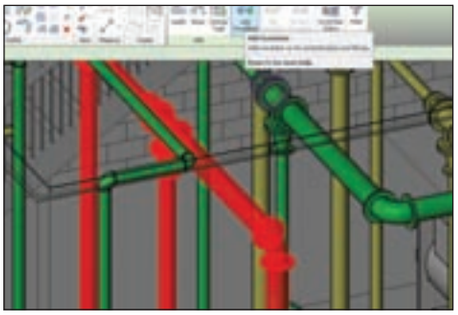
Rheem.com

pe09_pgs_06_07rev_Layout 1 8/24/11 10:31 AM Page 6

Editor's Letter

John Mesenbrink, editorial director
editor@plumbingengineer.com

BIM for MEP engineers



By now it is no secret that Building Information Modeling (BIM) technology can help mechanical, electrical, and plumbing (MEP) engineers do their jobs more efficiently — by seeing the design process before the actual construction takes place. Check out "What can Building Information Modeling Do for You?" on page 34 for more information. Sarah Hodges, senior industry marketing manager, Architecture, Engineering and Construction, Autodesk, discusses the huge benefits of BIM.

Interestingly enough, according to an article published in the July 25 issue of *The Zweig Letter*, ZweigWhite's weekly management publication, an informal survey was conducted and readers were polled on their levels of implementation of BIM technologies.

The survey claims that practitioners are starting to move beyond two-dimensional computer-aided design (CAD) programs in favor of BIM. Only 12.5 percent of firms responding to the survey still rely solely on CAD, while 31.3 percent say they use CAD but are currently adding BIM technologies. Twenty five percent indicated they currently use CAD concurrently with BIM and will continue to do so for some time to come; 31.3 percent reported using CAD on a limited basis and using BIM for most projects. None reported making the full transition to BIM yet, but all expect to at some point.

According to the article, Klingner & Associates, P.C., an architecture and engineering consulting firm based in Quincy Ill., still uses CAD but is currently adding BIM technologies, said Michael Klingner, president. He said clients have started to request BIM services with frequency during the past year.

"We are currently working on our first major BIM project. This project is a state correctional maximum security prison construction project using BIM to document special inspections, and we expect to be working on two full architectural, mechanical, and structural BIM design projects the second half of 2011," Klingner said.

Firms that aren't seeing the need for the new technological application will have to get on board at some point, especially if they work on government projects. Much of the federal government is moving toward requiring BIM on their building projects. Currently the U.S. General Services Administration, Army Corps of Engineers, Air Force and Coast Guard are requiring BIM on specific projects. Even state and local governments are looking for BIM in their projects.

For info on The Zweig Letter, www.zweigwhite.com/trends/thezweigletter. ■

PLUMBING ENGINEER
(USPS 567-950)
ISSN 0192-1711

PLUMBING ENGINEER (USPS 567-950) ISSN 0192-1711 is published monthly by TMB Publishing Inc., 2165 Shermer Rd., Suite A, Northbrook, IL 60062. Phone (847) 564-1127, Fax (847) 564-1264. Magazine is free to those who design and specify plumbing/piping systems in commercial, industrial, institutional and governmental buildings; as well as government officials and plumbing inspectors. Subscription rates for U.S. and Canada: $50 for one year, $90 for two years. Other countries: $300 per year. Periodical postage paid at Northbrook, IL, and additional mailing offices. POSTMASTER: Change of address should be sent to ***Plumbing Engineer***, 440 Quadrangle Dr., Suite E., Bolingbrook, IL 60440. Material and opinions contained in contributed articles are the responsibility of the authors, not of TMB Publishing Inc., *Plumbing Engineer* magazine or its Editorial Advisory Board. The publisher cannot assume responsibility for any claims made by advertisers.
Copyright © 2010 TMB Publishing Inc. All rights reserved.
Volume 39, Number 9. *Plumbing Engineer* is microfilmed by University Microfilms, Ann Arbor, MI, and indexed by Engineering Index Inc. Publications Mail Agreement No. 41499518. Return Undeliverable Canadian Addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill ON L4B 4R6

Plumbing Engineer
A TMB Publication

Editorial, Advertising, Production, Accounting and Administrative Offices

2165 Shermer Rd., Suite A
Northbrook, IL 60062
(847) 564-1127 • Fax: (847) 564-1264
E-mail: *info@tmbpublishing.com*

Owner
Tom M. Brown

Editorial & Production Staff
John Mesenbrink, *Editorial Director*
Marilyn Cunningham, *Associate Editor*
Cate C. Brown, *Production Manager*
Mark Bruno, *Art Director/Prepress*

Contributors
Timothy Allinson, P.E., *Designer's Guide*
Sam Dannaway, *Fire Protection*
Ron George, CPD, *Code Classroom*
John Abularrage, *Hydronics*
Bob "Hot Rod" Rohr, *Green Systems*
Bristol Stickney, *Solar Solutions*

Sales Staff
Brad Burnside, Publisher
East
2165 Shermer Rd, Suite A, Northbrook, IL 60062 Phone: 847/564-1127
Cell: 224/659-3984
Fax: 847/564-1264
E-mail: brad@tmbpublishing.com

David Schulte
Midwest, South and E. Canada
2165 Shermer Rd, Suite A, Northbrook, IL 60062 Phone: 847/564-1127
Cell: 847/420-4686
Fax: 847/564-1264
E-mail: dave@tmbpublishing.com

Diane Spangler
West, Texas and W. Canada
PO Box 9802, Fountain Valley, CA 92728 Phone: 714/839-6700
Fax: 714/839-6777
E-mail: diane@tmbpublishing.com

pe09_pgs_06_07_Layout 1 8/24/11 10:27 AM Page 7

Bank on total gang shower protection

When it comes to multiple showers, Leonard rules: the new XL-690 mixing valve can take on any gang shower configuration.

With a 20 GPM flow at 15 psi and a minimum flow rate of 1.0 GPM (3.8 lpm), the XL-690 reliably **meets the ASSE 1069 standard** for advanced automatic temperature control of multiple (gang) showers.

The XL-690 high/low thermostatic water mixing valve provides accurately mixed water from extremely low flows of 0.5 GPM (1.9 lpm) to high flows — maintaining desired output temperatures. This valve is certified to the stringent performance requirements of both the ASSE 1069 and 1017 standards.

Leonard valves can help you stay ahead of water tempering requirements. Call our free technical support hotline at **888-797-4456** or visit our website, **www.leonardvalve.com,** for more information.

Leonard...the right mix.

LEONARD
WATER TEMPERATURE CONTROLS

Circle 4 on Reader Reply Form on page 86

pe09_pgs_08_15rev_Layout 1 8/26/11 8:04 AM Page 8

Industry News

A.O. Smith to acquire Lochinvar

MILWAUKEE — A. O. Smith Corporation announced it has signed a definitive agreement to acquire Lochinvar Corporation of Lebanon, Tenn., for $418 million and will not assume Lochinvar's existing debt.

Privately held Lochinvar is a leading manufacturer of high-efficiency boilers used in commercial and residential hydronic heating and hot water applications. A. O. Smith expects the acquisition to be accretive to earnings per share in the amount of approximately $.10 in the fourth quarter of 2011, excluding one-time purchase accounting charges and professional fees related to the acquisition, and in the range of $.40 to $.50 per share in 2012. The transaction is expected to close in the third quarter of 2011, subject to customary closing conditions and regulatory review.

Lochinvar's product offerings are highly complementary to A. O. Smith's and include: residential and commercial high-efficiency condensing and non-condensing boilers, residential and commercial water heaters, indirect water heaters, storage tanks, solar thermal commercial water heaters, and commercial and residential pool and spa heaters.

A. O. Smith names Rajendra president, chief operating officer

A. O. Smith Corp. also announced that Ajita G. Rajendra has been named president and chief operating officer, effective Sept 1.

Rajendra

Rajendra will be responsible for A. O. Smith's water heater operations in North America, China, Europe, and India as well as the company's water purification business in China. The $1.5 billion business has 17 manufacturing plants around the world and employs approximately 10,000 people.

In addition, Rajendra will be responsible for the Lochinvar global boiler business, once the acquisition of that company is complete. He also will oversee A. O. Smith's global technology centers focused on research, development, and product engineering, and the corporation's information technology function.

"With his extensive experience, in-depth knowledge of our business, and passionate interest in customer satisfaction, Ajita Rajendra is the ideal person to take on this challenging new assignment," Paul W. Jones, chairman and chief executive officer, said in making the announcement. "Under his leadership, our Water Products Company has achieved record sales and profitability. He has been instrumental in growing our market share in China and entering the important India water heater market."

Jones will remain chairman and chief executive officer and will continue to lead the business transformation to a global water technology company. In addition to operations under Rajendra, Jones will retain responsibility for the corporation's finance, human resources, legal, and corporate development areas.

Boston Chapter of ASPE to host product show

BOSTON —The ASPE Boston chapter's 20th-anniversary biennial product show will take place on Tuesday, November 8, 2011 at the Lantana in Randolph, Mass. There will be nearly 100 vendor booths, including many new exhibitors this year. Thousands of plumbing and fire suppression products will be on display, with special emphasis on new and green products.

Technical seminars with industry renowned and respected guest speakers include the following:

All Day Seminars
- Domestic Hot Water
- Rainwater Containment and Re-Use

One-hour Seminars
- Seismic Design
- NFPA 99 2012 Updates
- LEED Points Calculations
- Mass. Plumbing Code Updates
- Energy Rebates

CEU credits are available for all seminar attendees. There will be anniversary giveaways for all product show attendees, as well as raffle prizes and a special 20th Biennial Show Grand Prize.

Register at www.aspebostonchapter.org. For more information, contact either Paul Taylor at ptaylor@berengineering.com or Nancy Bonnetti at nbonnetti @quanteng.com.

ASSE appoints new members to Product Standards Committee

WESTLAKE, OHIO — The American Society of Sanitary Engineering (ASSE) has appointed two highly qualified new members to their Product Standards Committee, the consensus group responsible for directing and supervising all activities relating to the development and issuance of ASSE product performance standards for devices, fixtures, appliances and materials pertaining to plumbing.

As executive director and CEO of the American

More Industry News on page 10

pe09_pgs_08_15rev_Layout 1 8/23/11 11:24 AM Page 9

This Changes Everything...

GV90+

Weil-McLain Proudly Introduces
The New GV90+ Gas Boiler and
Aqua Plus Indirect-Fired Tanks

- **UP TO 92% EFFICIENT**
- **DURABLE CAST IRON PRIMARY HEAT EXCHANGER**
- **CONDENSING STAINLESS STEEL SECONDARY HEAT EXCHANGER**
- **ABLE TO VENT WITH PVC**
  FIRST CAST IRON GAS BOILER IN THE INDUSTRY
- **MULTIPLE VENTING OPTIONS**
  DIRECT VENT, DIRECT EXHAUST, CONCENTRIC

GV90+
Water,
Sealed Combustion
or Direct Exhaust,
NAT'L or LP,
MBH: 70-175

AQUA PLUS

316L STAINLESS STEEL TANK WELDED WITH "TIG AND PLASMA" TECHNOLOGY
- Offers exceptional tolerance for corrosion vs carbon steel tanks

HIGH OUTPUT OVER 1" DIAMETER STAINLESS STEEL HEAT EXCHANGER
- Superior 1st hour rating

INSPECTION PORT ON EVERY TANK LOCATED NEAR THE BOTTOM OF THE TANK
- Hatch provides easy access for tank cleaning and inspection

MAGNESIUM ANODE INSTALLED IN ALL TANKS
- Provides exceptional tank protection

HIGH "R VALUE" WITH 2 INCHES OF DENSE FOAM INSULATION
- Saves energy with low off cycle losses

ADJUSTABLE LEVELING LEGS FOR UNEVEN FLOORS

AQUA Plus
5 Tank Sizes
High Capacity
Coil Design

WEIL-McLAIN

For more information visit us at **www.weil-mclain.com**

Circle 5 on Reader Reply Form on page 86

pe09_pgs_08_15rev_Layout 1 8/26/11 8:05 AM Page 10

Industry News

Continued from page 8

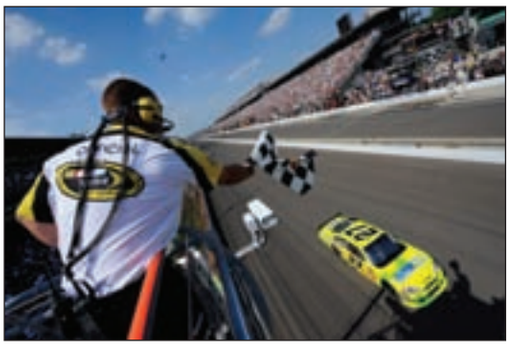
Society of Plumbing Engineers (ASPE), an association comprised of more than 6,500 plumbing engineers, James G. Kendzel is responsible for the strategic direction of ASPE and oversight of all operations of the organization. His current and past involvement with associations such as NSF International and the American National Standards Institute (ANSI) adds to his resume and makes him a valuable asset to ASSE's Product Standards Committee.

Abraham I. Murra is director of standards development for the International Association of Plumbing and Mechanical Officials (IAPMO), an accredited testing and certification organization and accredited codes and standards developer. His current position, along with his past experience working with organizations such as the Canadian Standards Institute (CSA) and the American Society of Mechanical Engineers (ASME), will add another level of expertise to ASSE's consensus body.

Menard and NIBCO winners at Indy track

ELKHART, IND. — In a spectacular finish, Paul Menard earned his first Sprint Cup victory, driving the NIBCO-sponsored No. 27 Chevrolet Impala at the Brickyard 400 that kicked off the Sprint Car Summer Shootout on July 31, 2011.

In a risky turn of events, Menard deliberately stayed on the track through green-flag pit stops, throttling to save fuel, and held the lead with 15 laps remaining. The tri-



umph marked an eventful day at the Indianapolis track where NIBCO representatives and a group of its Indiana-based plumbing contractors and wholesalers witnessed the historical win. The NIBCO logo is emblazoned across the hood of car No. 27, a testament to the company's long-standing relationship with retail super center Menards.

NIBCO is one of the major sponsors of Paul Menard and Richard Childress Racing as part of its marketing strategy to increase brand awareness and to support its philosophy of competing to win.

LEAD
GREEN
Leading the Way in Clean Water Regulatory Responsibility
Concast started producing lead-free copper alloys in 1993—naming them GreenAlloys™, lead-free copper alloys that contain recycled content and qualify for LEED credits.
At Concast, we manufacture a wide selection of environmentally friendly lead-free copper alloys in solid, tube, rectangular, hex and shapes to fit your application-specific needs.
C89320 C89325 C89831 C89833 C89835 C89844
1.800.626.7071
www.greenalloys.com
Circle 6 on Reader Reply Form on page 86

pe09_pgs_08_15rev_Layout 1 8/26/11 8:05 AM Page 11

IAPMO, WPC schedule 2012 symposium

WASHINGTON — Against the backdrop of a national election that will no doubt shape the future of the construction industry and its products, the International Association of Plumbing and Mechanical Officials (IAPMO) and the World Plumbing Council (WPC) will convene the third International Emerging Technology Symposium on May 1 and 2, 2012, in Washington, D.C.

A gathering of experts who will discuss policy initiatives that will drive the introduction of new technologies to market and advance the cause of water efficiency, the event is designed to provide a portal for the host organizations' partners in the manufacturing, engineering and trade industries to display and demonstrate their innovative solutions to regulatory developments that often alter industry landscapes.

IAPMO and the WPC previously hosted two highly regarded and insightful Emerging Technology Symposiums in Chicago (2008) and Ontario, Calif., (2010), keynoted by then U.S. EPA administrator Stephen L. Johnson and renowned "green cowboy" S. David Freeman, respectively.

IAPMO and the WPC are seeking sponsors, presenters and panelists to participate in the 2012 symposium, especially experts in the following fields:

- Water, Sanitation and Health
- Water and Energy Efficiency
- Water Reuse
- Solar and Other Renewable Energies
- Water Quality
- Fat, Oil and Grease Discharges
- Advancements in Mechanical Systems
- Plumbing Research Initiatives
- Laws, Regulations and Policy Development

A series of videos from the previous two symposiums are available for viewing online at www.youtube.com/user/IAPMOGroup.

In addition to the symposiums, IAPMO and the WPC have previously worked together to bring industry-wide attention to the SARS epidemic and the measures necessary to mitigate its threat around the world.

IAPMO's green supplement incorporated within NSPC

The plumbing provisions of the IAPMO Green Plumbing and Mechanical Code Supplement (GPMCS) will be included as an appendix to the 2012 edition of the National Standard Plumbing Code published by the Plumbing Heating Cooling Contractors (PHCC) — National Association.

More Industry News on page 12

pe09_pgs_08_15rev_Layout 1 8/26/11 8:05 AM Page 12

Industry News

Continued from page 11

The National Standard Plumbing Code committee voted unanimously to incorporate the provisions from the GPMCS in order to provide a needed resource to plumbers, engineers, installers, contractors and code officials tasked with designing, installing, inspecting or adopting sustainable plumbing systems. The New Jersey PHCC chapter and the New Jersey chapter of the American Society of Plumbing Engineers offered testimony in support of the proposed change.

The GPMCS was developed as a tool to be used as an overlay to any plumbing code, including the NSPC. It provides code officials with comprehensive and progressive enforceable green code provisions that help eliminate baseline code barriers and provide the critical information needed to assure that the sustainable construction practices being incentivized by green rating programs such as USGBC's LEED and Green Building Initiative's Green Globes are safe and reliable. Hence, the incorporation of the GPMCS into the NSPC appendix precisely fulfills the vision IAPMO stakeholders embraced while developing the GPMCS.

Charlotte Pipe receives green verification from ICC-ES

CHARLOTTE, N.C. — Charlotte Pipe's cast iron pipe and fittings have added another third-party verification to its list, this time confirming its green and sustainable qualities. In fact, cast iron pipe and fittings from Charlotte Pipe are made from a minimum of 96 percent recycled content and remain 100 percent recyclable.

Charlotte Pipe has received confirmation from ICC Evaluation Service LLC (ICC-ES) that its cast iron products comply with the provisions of the ICC-ES SAVE (Sustainable Attributes Verification and Evaluation™) guideline for determination of recycled content of materials (EG101).

Charlotte Pipe received a Verification of Attributes report (VAR#1021) providing building officials, architects, contractors, specifiers, designers and others who rely on third-party verification evidence that Charlotte Pipe cast iron soil pipe and fittings comply with specific green requirements.

ICC-ES thoroughly examined Charlotte Pipe's product information, test reports, calculations, quality control methods and other factors to ensure the products meet the sustainable (green) attributes listed in the VAR #1021.

Richard Trethewey to collaborate with Wilo in training videos

MELROSE PARK, ILL. — Wilo USA announced that Richard Trethewey will be working to promote Wilo's North American efforts through a series of training videos. Wilo is noted worldwide for manufacturing high efficiency pumps that have the ability to save dramatic amounts of energy.

Richard grew up working at his family's fourth-generation plumbing and heating business, which was founded in 1902. He is a licensed master and journeyman plumber in the Commonwealth of Massachusetts and has long been an advocate for professionalism in the building trades.

RectorSeal acquires assets of Airtec Products Corporation

HOUSTON — RectorSeal announced the asset purchase of Airtec Products Corporation (Airtec) of Fall River, Mass.

Airtec offers a line of uniquely designed and patented diffusers that incorporate a quick and easy to install grill, box, and multi-size boot and damper all in one, as well as a group of accessory items to help in the ceiling diffuser installation. They also offer the EZ Trap® brand of products for condensate removal from air conditioning and refrigeration systems. This uniquely designed and patented see-through trap comes in both a standard "P" trap configuration as well as in a waterless model. Both traps are available with either a mechanical or electronic drain pan overflow cutoff switch.

Watts launches online media center

NORTH ANDOVER, MASS. —Watts has launched its online media center, a resource featuring dozens of videos for professionals and consumers. Video topics range from step-by-step installation and maintenance of products to quick tips and product information. There is also an entire section devoted to the repair of backflow prevention products.

Visit www.videos.watts.com for info.

NOTIFIER protects historic warship

NORTHFORD, CONN. — A fire incident aboard the USS Yorktown warship in Mount Pleasant, S.C., was immediately detected by the ship's NOTIFIER

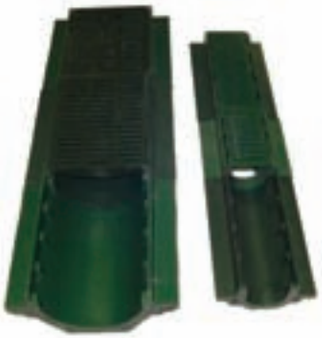
More Industry News on page 14

pe09_pgs_08_15rev_Layout 1 8/23/11 11:24 AM Page 13

JOSAM®

Diverse Conditions Require Diverse Materials

SMC/GRP
4", 8" and 12" widths
With and Without Slope



Cast Iron
6" and 12" Width
Without Slope

Stainless Steel
3/4", 5/16", 3", 6", 8", 12" and 16" widths
With and Without Slope

Josam Company recognizes that applications vary from project to project and thus the products required to suit these applications also vary. Josam Company's diverse and complete line of trench drain products offer specifying engineers a trench drain solution to most all project requirements. Our trench drain systems offer products manufactured from either glass reinforced polyester pressed from sheet molding compound, cast iron or stainless steel. Each product range offers a wide variety of standard features and options, along with the ability to customize products to accommodate the simplest to most intricate applications. For more information on Josam Company's complete range of trench drain systems please contact your local Josam representative or visit our website at **www.JOSAM.com.**

Circle 7 on Reader Reply Form on page 86

Executive Offices
2501 S Front Street • Philadelphia, PA 19148
Phone: 215.339.5370 • Fax: 800.962.3312

Corporate Headquarters
525 West Highway 20 • Michigan City, IN 46360
Phone: 800.365.6726 • Fax: 800.627.0008

www.JOSAM.com

pe09_pgs_08_15rev_Layout 1 8/26/11 8:05 AM Page 14

Industry News

Continued from page 12

by Honeywell fire alarm system and quickly extinguished by fire companies responding from three surrounding cities, keeping damage to a bare minimum. The warship museum opened for visitors the following day.

A network of three NFS-640 fire alarm control panels, smoke and heat detectors and pull stations from NOTIFIER were commissioned in 2009 to protect the 19,800-ton USS Yorktown aircraft carrier.

Apricus launches new website

BRANFORD, CONN. — Apricus, a designer and manufacturer of solar hot water and hydronic heating products, announced the launch of their redesigned website www.apricus.com.

The new and improved global site features an updated look while providing users with a wide variety of information from solar basics to system sizing and advanced technical files in one easy to use site. A secure login area allows Apricus customers instant access to project manuals, specification sheets, promotional materials and other files.

Froet names rep of the year

Froet Industries LLC wants to congratulate K Ross Company the winners of the 2010 Froet rep of the year Award. Their hard work, determination and exceptional product knowledge has been their path to success. K Ross is also celebrating their 20 year anniversary.

Rinnai honored by Cystic Fibrosis Foundation

PEACHTREE CITY. GA. — Rinnai America Corporation has received the 2010 Corporate Volunteer of the Year Award from the Cystic Fibrosis Foundation for its support of the Foundation's mission to find a cure for cystic fibrosis (CF). Rinnai received the CF Foundation's award after serving as a corporate sponsor of the organization's 2010 Great Strides fundraising walk in Peachtree City and hosting a variety of fundraising activities for the CF Foundation at its corporate headquarters in 2010.

Mestek launches new website

MESTEK, INC., the parent company to more than 36 specialty HVAC related manufacturers including Sterling HVAC, RBI Water Heaters and Hydrotherm Boilers announced its newly designed website located at www.mestek.com. The redesigned website allows for seamless and efficient navigation through the vast product information and offers a look into the vast scope of products offered by the Mestek companies.

Circle 8 on Reader Reply Form on page 86

pe09_pgs_08_15rev_Layout 1 8/26/11 8:05 AM Page 15

The Old Way

ADDENDUMS
OUT-OF-DATE MASTERS
REVISIONS
DISCONTINUANCES
MISTAKES
OBSOLETE SPECIFICATIONS

THE ATS WAY

- ☑ **Customized Specifications**
- ☑ **100% Accurate**
- ☑ **3D BIM Models**
- ☑ **Complete System Design Configuration**
- ☑ **Up-to-date**
- ☑ **And much more!**

ATS SPEC – TOOLS REQUESTED BY, AND BUILT FOR, THE SPECIFICATION COMMUNITY.

Log onto the only NO-COST, NO-CATCH plumbing specification information system! Sponsored by the leading manufacturing of the plumbing industry. www.atsspec.net!

ATS SPEC Features Include:

- **Complete and Customized Plumbing Specification Packages:** Specifications are provided in multiple formats including plumbing fixture schedule, long spec with drawings, CSI, and Division 22. No additional text editing is required!
- **BIM Spec Services:** Lightweight AutoCAD® blocks and combined 3D BIM nested families are available for projects built on ATS Spec. Detailed BIM models are created upon request for any of our Sponsors' products that are currently unavailable on our systems.
- **Complete and accurate Master or Project Specifications:** Specs built on ATS Spec are automatically updated. Users are notified of any product changes on their account.
- **Time-Saving Tools:** ATS Spec tools such as Copy, Edit, Direct E-mail, Design Details, LEED Calculators, and various System Schematic Designs, are available to assist with the specification process.

And Much More!

BUILD YOUR SPEC HERE.
www.atsspec.net

Circle 9 on Reader Reply Form on page 86

allied technical services inc.

pe09_pgs_16_19rev_Layout 1 8/23/11 11:59 AM Page 16

Designer's Guide

Timothy Allinson, P.E., Murray Co., Long Beach, Calif.

Water in the media and Microsoft Bathroom 2015

For a long time I have repeated the phrase that water will be the oil of future generations. Well, reflections of this sentiment are appearing in the media with growing frequency.

First, on July 13, the House passed a bill called the Clean Water Cooperative Federalism Act (H.R. 2018) giving each state the authority to set its own drinking water standards, taking this power away from the EPA under the federal Clean Water Act. Is this a good thing? That depends. Clearly, different states have different issues when it comes to water. Some, like my home state of California, have too little water, while others are plagued with floods. A state with plentiful water might have reason to have stricter drinking water standards than one with little water to spare.

The EPA also has some ridiculous requirements for groundwater discharge. Here in Calif., when site dewatering is required, it has to be treated to better-than-drinking-water quality before it can be discharged to the storm sewer. This is ridiculous, since it is groundwater being returned to nature; this is an example of how the EPA often oversteps its bounds. The point is moot, however, since the bill is expected to fail in the Senate. Even if it were to pass, Obama has already said he will veto it, since it removes the safeguards put in place by the CWA 40 years ago.

> I wonder if Mr. Gates and his Foundation can work wonders in the plumbing world as he did with the computer. Keep your eyes open for Microsoft Bathroom 2015, coming soon to a plumbing distributor near you.

In other news, the Senate wrote a bill on July 11 called the Energy and Water Integration Act of 2011 (S. 1343). This bill is intended "to provide for the conduct of an analysis of the impact of energy development and production on the water resources of the United States and for other purposes." Huh? Apparently, the bill calls for the Academy of Sciences to produce a lifecycle assessment of the quantity of water withdrawn and consumed in the production of transportation fuels, or electricity used as a fuel source. The fuels being evaluated include crude oil (domestic and imported), natural gas (domestic and imported), oil shale, tar sands, corn-based ethanol (domestic and imported), biofuels, coal to liquids, electricity consumed in fully electric vehicles, plug-in hybrids and hydrogen. Wow, that's quite an undertaking!

That's only the beginning. The bill goes on to require a lifecycle analysis of the water consumed in producing electricity from coal, natural gas, oil, nuclear energy, solar energy, wind energy, geothermal energy, biomass and the beneficial use of waste heat. The bill also provides for studies of desalination and other information.

All of this is reminiscent of an article I wrote back in May of 2008 titled "The Greening of America and the World Chicken Crisis." The tongue-in-cheek message of that article was that the advent of ethanol-fueled cars could create a grain shortage and hence a chicken feed crisis; i.e., solving one environmental problem can create another. This bill, wisely so, addresses that issue, in part by trying to anticipate how energy production could affect water supply. Having read the bill, however, it seems that the bureaucracy involved in getting there, or anywhere close, could prove overwhelming.

In August, the National Resources Defense Council (NRDC) released a 120-page publication titled *Thirsty for Answers: Preparing for the Water-related Impacts of Climate Change*. Being a climate change agnostic, I take such reports with a very large grain of salt. In fact, I found parts of this report laughable. "For instance, saltwater intrusion could affect the quality of New York City's water supply because rising sea levels would send saltwater farther up the Hudson River and Delaware River estuaries during high tides."

Newsflash: New Yorkers don't get their drinking water from these rivers. NYC drinking water is sourced from watersheds 100 miles away in the Catskill Mountains — watersheds that are fed into, not supplied by, the aforementioned rivers. With such obvious errors made in a stretch to create an issue of controversy, how can anyone take such a report seriously? And how much do tax payers pay for them to produce such drivel? Ironically, the NRDC is based in Manhattan.

Also in August, Bangor University announced that, together with Trinity College, Dublin, they had received a grant of over $800K to develop small hydropower turbines to capture energy from existing water supply systems. It seems that the water supply systems in Ireland and Wales have widespread break pressure tanks (BPTs) to dissipate the pressure at various points in the system. The project aims to capture the potential energy upstream of these BPTs with hydropower turbines to reduce the energy consumption and CO_2 emissions of the water supply system — a practical and commendable idea.

Back in March, Robert Glennon, author of *Unquenchable: America's Water Crisis and What to Do about It*, was the keynote speaker at the Design-Build

Continued on page 18

pe09_pgs_16_19rev_Layout 1 8/23/11 11:59 AM Page 17

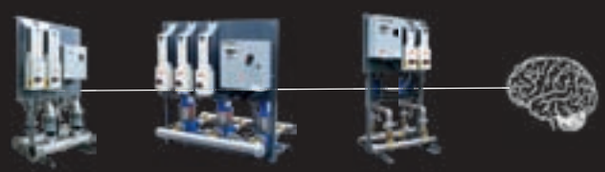
Talk to us when you face a booster system challenge.

Specially designed for tall buildings, our booster systems deliver steady, reliable water pressure in hotels and high-rise buildings all over the world. The systems can also be used for water distribution, reverse osmosis, water purification and filtration, as well as for light industrial applications.

Combining market-leading products with system design expertise, our solutions help you cut energy costs while reducing maintenance and life cycle costs of ownership. So let's put our minds together. Let's solve the challenge.

Visit completewatersystems.com/goulds-boosting

ITT | Goulds Pumps | Bell & Gossett | Lowara



ITT

Circle 10 on Reader Reply Form on page 86

pe09_pgs_16_19rev_Layout 1 8/23/11 11:59 AM Page 18

Continued from page 16

Institute's Water/Wastewater conference in Kansas City. Mr. Glennon has some remarkable anecdotes about water, one of the more memorable being a quote by Theodore Roosevelt in 1910, when flush toilets were still only available to a small fraction of the population. Roosevelt noted, "Civilized people should be able to dispose of sewage in a better way than by putting it in drinking water." He was indeed an insightful man.

When commenting on the water/wastewater infrastructure, Mr. Glennon stated, "It makes no sense to simply rebuild the existing wastewater infrastructure. The water industry delivers exclusively potable quality water to peoples' homes. But people only use 10 percent of that for drinking and cooking. That does not compute. We should be supporting the industry of alternative waste removal. We squander enormous amounts of energy and water treating to drinking quality standards 90 percent of water that we don't use for drinking and cooking. Design-Build can solve that. Instead of one massive plant, we need smaller decentralized treatment plants so that we can reuse smaller quantities of water locally."

Mr. Glennon is of the same mindset as none other than Bill Gates. The Bill & Melinda Gates Foundation has launched an effort to reinvent the toilet to bring safe, clean sanitation services to millions of people in the developing world. Sylvia Mathews Burwell, president of the foundation's Global Development Program, said in her keynote address to the 2011 AfricaSan Conference, "No invention in the past 200 years has done more to save lives and improve health than the sanitation revolution triggered by invention of the toilet. But it did not go far enough. It only reached one-third of the world."

The goal of the Foundation, with $42 million in grants to this end, is to develop a toilet room by 2015 that can operate off the grid and produce no waste other than fuel, fertilizer and potable water. It must be easy to install and maintain and operate for no more than 5 cents per person per day. Wow! That would be a remarkable achievement. I wonder if Mr. Gates and his Foundation can work wonders in the plumbing world as he did with the computer. Keep your eyes open for Microsoft Bathroom 2015, coming soon to a plumbing distributor near you. Many thanks to Gretchen Pienta of ASPE and her excellent Pipeline eNewsletter that inspired portions of this article. ■

Timothy Allinson *is a senior professional engineer with Murray Co. mechanical contractors in Long Beach, Calif. He is licensed in both mechanical and fire protection engineering in various states and is LEED accredited. He can be reached at laguna_tim@yahoo.com.*

The views and opinions expressed in this column are those of the author and do not reflect those of *Plumbing Engineer* nor its publisher, TMB Publishing.

Precision Plumbing Products
"Specify with Confidence - Install with Pride"
LOW LEAD

PRIME-PRO™ FLOOR DRAIN TRAP PRIMER

MADE IN U.S.A.
We do not export jobs.

PART NO: PRO1-500

The **Prime-Pro™** is activated when sensing potable water flowing at an adjacent plumbing fixture. This trap priming device must be installed on the cold water line leading to the plumbing fixture; the valve then emits fresh cold potable water to a floor drain trap as long as the fixture is in use, providing adequate trap seal. Providing potable water to the trap seal is essential in preventing sewer gas escape and bacteria growth.

The **Prime-Pro™** trap primer is equipped with vacuum breaker ports and internal back-flow protection to prevent cross connection. The valve is factory pre-set and 100% function tested prior to being labeled and boxed.

The **Prime-Pro™** trap priming valve is designed for multiple floor drain trap seal applications. The **Prime-Pro™ is a flow activated floor drain trap seal priming valve.**

Precision Plumbing Products
Division of JL Industries, Inc.
6807 NE 79th Court, Suite E Portland, Oregon 97218
T(503) 256-4010 - F(503) 253-8165 - www.pppinc.net

LOW LEAD
Complies with Low Lead Law

Rev 05/10

Circle 11 on Reader Reply Form on page 86

pe09_pgs_16_19rev_Layout 1 8/23/11 11:59 AM Page 19

KD NAVIEN®

Condensing Combination Gas Boiler/Tankless Water Heater

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
- Low cost PVC venting solution with 3" SCH 40 PVC
- Optimal and stable operation
- Eco friendly Navien technology
- Easy Installation
- Best warranty

Remote Controller
NR-10DPU

KD NAVIEN® Navien America Inc.

www.navienamerica.com

Circle 12 on Reader Reply Form on page 86

1-800-519-8794

pe09_pgs_20_23rev_Layout 1 8/23/11 11:31 AM Page 20

Code Classroom

Ron George, CPD
President, Plumb-Tech Design & Consulting Services, LLC

Water conservation research and legislative news, Part 2

As reported in Part I of this column, which appeared in the August issue of Plumbing Engineer, the Plumbing Efficiency Research Coalition (PERC) identified drain line transport as its first research project. The focus of its laboratory testing will be to verify the feasibility of using programmable flush-o-meter valves or other sources of clear water to clear long drain lines of deposited solids and to measure the relative importance of other systemic variables. To minimize costs, PERC will seek to conduct this test program on a suitable existing test apparatus and is currently in the process of executing a MoU with the AS-Flow committee in Australia. Once the MoU is executed, PERC plans to review this test proposal with the AS-Flow Committee to determine the most cost effective location to conduct this work.

PERC test plan details

The PERC Technical Committee has developed a proposed test plan. Below are the variables that need to be considered for the plan.

Flush volume: Discharge levels of 1.6 gpf (6.0 lpf), 1.28 gpf (4.8 lpf) and 0.8 gpf (3.0 lpf) to be evaluated.

Pipe diameter and material: 4" (100mm) diameter, clear PVC only. (It would be preferable to evaluate 3" and 6" diameter pipe also but, to minimize costs, only 4" diameter pipe will be used for this initial work.)

Toilet discharge flow rate/velocity: Needed to simulate fast acting and slow acting toilets. The PERC committee will use a "surge generator" type device to simulate those flow rates (rather than actual toilet fixtures). This device will allow for more consistent discharge and will maintain the test plan variable pertaining to the discharge more accurately than can be achieved by using actual toilets.

Trailing water: The surge generator will be constructed to allow injection of the solids at various points that result in a high volume of trailing water (70%), typical of fast acting toilets and a lower volume of trailing water (20%), typical of slower acting toilets.

Test media: Soy bean paste (miso paste) will be used to simulate solid human waste. This test media has been used extensively to test toilets to various flush performance tests, including the current U.S. EPA WaterSense specification for gravity flush toilets in the United States and has achieved good acceptance in the industry as an appropriate test media. Two-ply toilet paper will be used.

The following assumptions pertaining to flush discharges into the test apparatus will be applied:

- a 3:1 ratio for solid and liquid waste flushes
- a 50/50 "male to female" ratio
- All males use urinals, not toilets, for liquid waste.*
- No other long duration flows (showers) are available to assist the toilet. (This is because in greywater systems, shower water will be collected for re-use)
- Urinals do not provide any transport assist (waterless or .125 gpf).
- Males: 33.3% solid waste flushes using miso and toilet paper (four balls @ six sheets each), 0% liquid flushes.
- Females: 33.3% solid waste flushes using miso and toilet paper and 66.7% liquid waste using toilet paper only (four balls @ six sheets).* Essentially, this equates to 50% of the flushes having miso and paper and the other 50% having a lesser amount of paper only.
- The miso loadings will randomly vary between 300 grams, 200 grams and 100 grams for all solid flushes for each round of testing.
- Frequency and volume of clearing flush: The test plan will start using a 1% frequency for the clearing flush set at three gallons (11.4 liters). If successful at clearing the 300 foot (90 meter) test apparatus at these levels, no additional testing will be required. If not, evaluation at 2% frequency or at higher flush volume may be required. It will be up to the test engineer to determine whether those values need to be revised once we begin testing, based on observation.

*The above assumptions are not provided to simulate reality in all cases but rather to provide an assumed worst-case scenario.

AWE and ACEEE release water-energy blueprint

For the past 30 years, strategies to conserve and increase the efficiency of energy use have been widely pursued, in parallel with comparable water efficiency efforts. For the most part, efforts to conserve water and energy have not been coordinated in a coherent, collaborative manner. Today there is a growing realization that these separate activities could realize significant benefits from coordination.

Recognizing this need for collaborative action, the Alliance for Water Efficiency (AWE) and the American Council for an Energy-Efficient Economy (ACEEE) secured a grant from the Turner Foundation to bring these two communities together to establish a blueprint for future joint efforts and to envision a policy agenda that could drive actions at the federal, state, local and watershed levels.

The blueprint addresses three broad elements: policy/codes, research and programs. In developing it, AWE and ACEEE have analyzed and consolidated contributions from more than fifty leaders from across the energy and water efficiency communities. The goal of this blueprint and policy agenda is to provide a framework for collaborative action, funding and policy development.

The blueprint strives to learn from the experiences of both the energy and water communities, building on existing policies, programs and relationships. It also contains a policy agenda describing the opportunities available for policymakers at every level of government. The link between energy and water has not received the amount of research and poli-

Continued on page 22

pe09_pgs_20_23rev_Layout 1 8/23/11 11:31 AM Page 21

Circle 13 on Reader Reply Form on page 86

pe09_pgs_20_23rev_Layout 1 8/23/11 11:31 AM Page 22

Code Classroom

Continued from page 20

cy attention that it deserves.

Water efficiency legislation introduced in the 112th Congress

The authorization of the EPA's WaterSense program is at the heart of legislation introduced in late May by New Jersey representative Rush Holt. H.R. 1967, *The Water Advanced Technologies for Efficient Resource Use Act of 2011*, the WATER Act, takes a "comprehensive approach to boost jobs to install sell, and manufacture water efficient products and services." It mirrors the provisions that were included in H.R. 2368 (the Holt-Miller WaterSense authorization bill) and H.R. 2454 (the 2009 Waxman-Markey Climate bill) from the 111th Congress and provides for: authorization of the WaterSense program; grants to establish or expand local programs that offer rebates or vouchers to consumers that purchase water efficient products and services; federal agencies to purchase cost effective, water-efficient products.

The legislation includes $50 million in funding for the retrofit incentive program. The bill has been referred to several House committees.

WaterSense, launched in 2006, is the EPA partnership program that seeks to protect the future of our nation's water supply by promoting water efficiency and expanding the market for water efficient products and services.

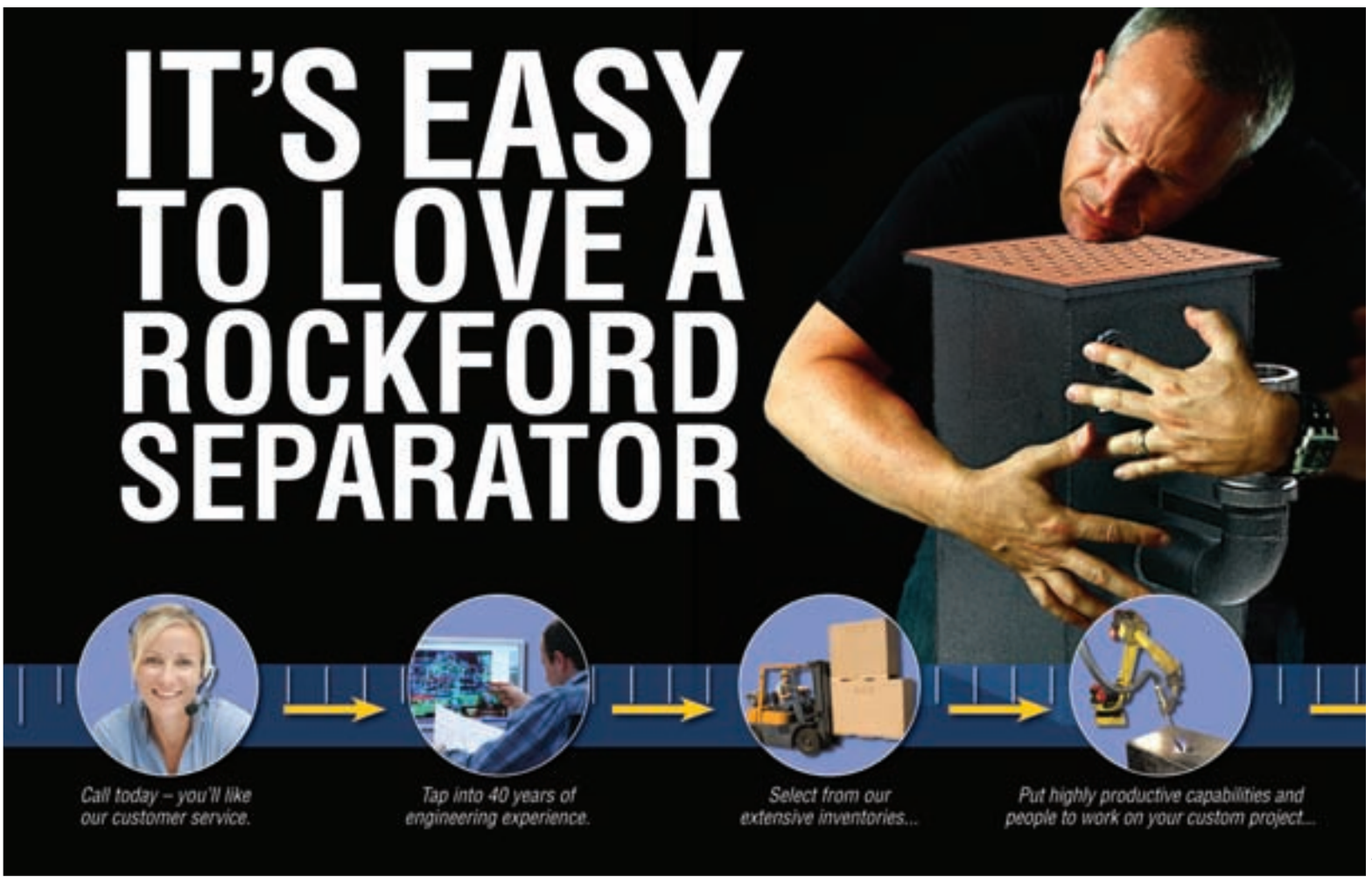
Motivation for consumers and industry

Rebates and vouchers encourage consumers to purchase water efficient fixtures such as faucets and toilets. This would create jobs for the plumbers and contractors that install these products and boost jobs in manufacturing them. According to the AWE, these programs would create at least 18 jobs per million dollars of investment. This compares to the approximately 14 jobs created per million dollars of investment in construction, as calculated by the Congressional Research Service. Sales of water efficient products would be increased further through federal procurement of these fixtures, resulting in the creation of installation, retail and manufacturing jobs.

These economic benefits would reap environmental ones as well. If only one out of every 100 American homes retrofitted their homes with water-efficient fixtures, we would save enough energy to power about 9,100 homes for an entire year and avoid adding 80,000 tons of greenhouse gas to the atmosphere.

GAO report identifies the high energy costs of water and wastewater treatment

A Government Accountability Office (GAO) study reports that energy costs to run city water and wastewater systems consume up to half of municipalities' energy bills, According to the study, many cities recognize that they allocate 30 to 50



pe09_pgs_20_23rev_Layout 1 8/23/11 11:31 AM Page 23

percent of their energy budgets to water and wastewater systems, but they fail to use efficient technologies and equipment, upgrade infrastructure or adopt water conservation measures.

In many cities, the costs to meet regulatory standards for water quality testing and the needs of other city departments override the need for appropriating money to redesign water treatment plants or utility infrastructures to cut water and wastewater system energy costs. I saw this firsthand when the water and sewer board I served on decided not to replace old clay tile sewers that caused a significant infiltration of stormwater and groundwater into the wastewater treatment plant during wet weather. The board chose to build wastewater ponds for diverting the excess flows and treated the storm surge flows after the storm event.

DOI identifies increased risks in western U.S.

The United States Department of the Interior (DOI) has released a report that assesses climate change risks and how these risks could impact water operations, hydropower, flood control and fish and wildlife in the western United States. The report to Congress represents the first consistent and coordinated assessment of risks to future water supplies across eight major reclamation river basins.

The report shows several increased risks to western United States water resources during the 21st century. Specific projections include: a temperature increase of five to seven degrees Fahrenheit; a precipitation increase over the northwestern and north-central portions of the western U.S. and a decrease over the southwestern and south-central areas; a decrease for almost all of the April 1 snowpack; a standard benchmark measurement used to project river basin runoff and an eight to 20% decrease in average annual stream flow in several river basins, including the Colorado, the Rio Grande and the San Joaquin.

In addition to drain line transport research concerns, we must also remember that reducing flows at showerheads to flows below two gpm can significantly impact the ability of the shower control valve to maintain a safe outlet temperature. This can lead to thermal shock and scalding incidents, especially on older-style non-pressure or temperature compensating type shower controls and on shower controls without a check valve to limit crossover flow from hot to cold. Remember we must save water wisely. ■

Ron George *is president of Plumb-Tech Design and Consulting Services LLC. He has served as chairman of the International Residential Plumbing & Mechanical Code Committee. Visit www.Plumb-TechLLC.com, email Ron@Plumb-TechLLC.com or phone 734/755-1908.*

The views and opinions expressed in this column are those of the author and do not reflect those of *Plumbing Engineer* nor its publisher, TMB Publishing.

pe09_pgs_24_25rev_Layout 1 8/23/11 2:35 PM Page 24

FPE Corner

Samuel S. Dannaway, PE, FSFPE
President, S.S. Dannaway Associates, Inc., Honolulu

Freedom Tower to include advanced high-rise fire safety features

One World Trade Center will have 108 floors and a total floor area of 2.6 million square feet. The building will have a total height of 1776 feet. There will be a ledge at 1368 feet marking the height of WTC 1.

According to the website of the New York Port Authority, the tower currently stands at a height 961 feet at 78 floors. The topping off of the tower is expected to occur in the first quarter of 2012.

Photo credit: The Port Authority of New York & New Jersey

The building will incorporate advanced fire safety features exceeding those required by the building code of the City of New York, creating a new standard for high rise buildings.

The key element is a hardened central core with three foot concrete walls. It will protect essential building systems, including exits stairs, sprinkler and standpipe risers, HVAC shafts, elevators, and power supply and communication risers. Elevator evacuation will be incorporated into the elevator system. Elevator lobbies will be enclosed by one hour smoke barrier sized to accommodate 25% of the floor occupant load, be equipped with two-way communications and have direct access to an enclosed exit.

The tower also will include the additional fire safety requirements in the 2009 International Building Code for high rise buildings exceeding 420 feet in height. Many of these provisions are the direct result of recommendations contained in the NIST WTC Investigation Report. These features include:

• **IBC Section 403.5.2 Additional Exit Stairway.** For buildings other than Group R-2 that are more than 420 feet height one additional exit stairway shall be provided in addition to the minimum number of exits and minimum total exit capacity required. It is noted that the IBC has an exception to this requirement if elevators designed for occupant self-evacuation are provided. One WTC will have both. The additional stair provided to enable the first responders to commander one of the available stairs for their use during fire fighting operations without affecting the required egress capacity for building stairs.

• **1005.1 Minimum Required Egress Width.** The reduction for sprinkler protection of the egress capacity factors have been eliminated in the 2009 edition of the IBC. Stairs must be calculated based on 0.3 inches per person rather than 0.2 inches per persons previously allowed for sprinkler building. This will result in wider stairs in many buildings.

• **403.5.1 Remoteness of stair enclosures.** Stair enclosures shall be separated a minimum of 30 ft. or one-fourth the maximum diagonal dimension of the building or area served.

• **403.5.5 Luminous Egress Path Markings for exit enclosures.**

• **403.6.1 Fire Service Access Elevator.** A dedicated elevator for the fire service is required for buildings with 120 feet or more in height. The elevator must open into a protected elevator lobby with a minimum 150 square feet and the lobby must have direct access to an exit stair.

• **403.4.4 Emergency Responder Radio Coverage.** An emergency responder radio communications system must be installed in all high-rise buildings.

• **403.4.6 Smoke Removal System to facilitate smoke removal in post-fire salvage and overhaul operations.**

• **Bond strength of sprayed fire-resistive material (SFRM):** The minimum bond strength for SFRM in buildings more than 420 ft. in height will be 1,000 psi.

• **Fire command center size:** An increase the minimum size of the fire command center from 96 sq. ft. to 200 sq. ft. with a minimum dimension of 10 ft.

• **Dual fire sprinkler risers.** Buildings more than 420 ft. in height tall shall have dual fire sprinkler risers arranged so that risers supply alternating floors. This is the correct way to ha a design to avoid progressive collapse, biological and chemical filters on the air supply system, a hardened exterior glazing system and increased set backs from West Street.

Though the Freedom Tower will not be completed to by the 10th anniversary of September 11, the Port Authority indicates that the Visitors Orientation and Education Center and the Memorial Museum with its Memorial Wall will be officially opened on that day.

It is wonderful that after these many years there will stand

Continued on page 84

Omnivore® Grinders
By Liberty Pumps

Hungry by Design

Omnivore® LSG-Series the most advanced grinder available.

With new **V-Slice®** cutter technology providing over 370,000 cuts per minute, the Omnivore® is not only hungry - it's ready to shred anything in its path.

Liberty Pumps®

800-543-2550
www.libertypumps.com

Copyright © Liberty Pumps, Inc. 2009 All rights reserved.

Inc. 5000
One of America's fastest growing privately owned companies

Circle 15 on Reader Reply Form on page 86

pe09_pgs_26_29rev_Layout 1 8/23/11 11:40 AM Page 26

Modern Hydronics

Dan Foley, P.E., Foley Mechanical, Inc, Lorton, Va.

Commercial radiant

I installed my first radiant floor heating system in 1992. Since that time, I have designed and installed hundreds of radiant systems. When I started my own company in 2002, I predicted that radiant would be a primary component of our product mix. That prediction proved to be accurate, and radiant continues to be the driving force in my company.

Several years ago, I was asked by a developer we had worked for to help design the ultimate comfort system for a high-end condominium project.

The developer was going to renovate a 19th century brick schoolhouse that had been abandoned and had become dilapidated after many years. He was going to

convert the building into seven condominiums with an underground parking garage, as well as put up six rowhouses that would blend in with the period architecture of the neighborhood. The Wormley School, a brick schoolhouse built in 1885, presented unique challenges. The outside of the structure could not be altered, due to the building's location in the historic Georgetown district of Washington, D.C. In order to maintain the architectural integrity, the single-pane glazed windows had to stay.

We worked with the developer, Encore Development, located in Bethesda, Md., architect Cunningham + Quill, based in Georgetown and mechanical engineer Summit Engineering, based in Arlington, Va., to design a first class mechanical system within the constraints of the 100-plus-year-old building. Developer Steve Kay of Encore Development says, "I tasked Foley Mechanical and Summit Engineering with designing a best-in-class mechanical system in terms of comfort, efficiency and reliability. This system had to meet the expectations of our demanding clientele. The system Foley installed exceeded these criteria."

As this was a commercial project, detailed shop drawings were required. I had met Abe Stallcup, principal at Monterey Energy Group at a previous RPA function. I contacted Abe about doing these drawings, and he agreed. I spent many hours with Abe on countless phone calls and emails to develop the drawings. The results were outstanding. The shop drawings allowed my crew, as well as the architect, GC and other trades to know exactly where our tubing, piping and equipment should be installed well in advance of the actual work. It is far easier to "fix" problems on paper rather than on the jobsite.

We decided early on that radiant floor heat would be ideal, due to the poured concrete construction and large eight-foot tall single-pane windows. It would be difficult to heat this structure with forced air. We ran into a slight problem with the structural engineer: He did not want the radiant tubing in the 6" structural slab. His contention was that the tubing would compromise the integrity of the slab. I did not agree with this, as we had installed many radiant systems in structural slabs. Rather than battle with the structural engineer, we developed an alternate plan. Instead, we had a layer of 2" extruded polystyrene insulation installed on top of the structural slab. A 2" capping slab was poured with our radiant tubing embedded in that layer. As the ceilings were 12–14 ft. tall, we had the luxury of the additional 4" required by this installation method.

In hindsight, this may have been the best outcome, as we installed the tubing late in the construction process, long after the plumber, electrician, tel-com, alarm contractor and general contractor had completed their roughins and floor penetrations. This minimized the number of

tubing punctures and repairs. The tubing was only hit once, which was amazing for a project this size. In addition, the 2" capping slab allowed for quicker response time on a heat demand.

One downside was the time frame allotted for installing

Continued on page 28

pe09_pgs_26_29rev_Layout 1 8/23/11 11:40 AM Page 27

Circle 16 on Reader Reply Form on page 86

pe09_pgs_26_29rev_Layout 1 8/23/11 11:40 AM Page 28

Continued from page 26

the radiant tubing. No other subs could work in the areas where we were installing it. In addition, the capping slab required a pump truck when it was poured, which required closing one lane of Prospect Street, a busy Georgetown thoroughfare. We had to get the tube down quickly and get it covered in 2" of concrete.

In order to meet this schedule, I put a crew of nine on the job; we were able to lay approximately 15,000 lineal feet of ½" Uponor Wirsbo PEX in a two-day period. We split up and were working on three floors simultaneously. Of most help was a tie tool I first saw at ISH-Frankfurt the year before. This tool automated the task of tying the tube to the re-bar or steel wire mesh. Previously, we had to twist the "squiggies" using a hand tool. This was fine for small jobs but was too slow and tedious for a large project like this. After several hours of twisting the ties, your wrist was ready to give out.

Commercial jobs lend unique challenges to mechanical projects that require unique solutions. Our commercial project base is growing, and we have several more in progress. Don't be afraid to jump in and try a commercial project, but make sure that you are adequately prepared and are ready for tight schedules and hard work.

Enter the Max tie tool. It was originally designed for rod busters tying steel re-bar on concrete jobs. By loosening the adjustable tension and using a softer plastic-coated aluminum tie wire, it was easily modified for tying radiant tubing to the mesh. It will wrap, twist and cut the wire in about a second. This is exactly what I needed, and we used three of the tools on the project.

Yes, these tools are expensive (around $2,200 in 2009), but labor is my largest expense. I will readily invest in tools that will reduce man hours as well as wear and tear on bodies. Most importantly, it kept us on a very tight schedule and allowed concrete to be poured as planned. As this entailed scheduling a street closure, we had no choice. We either had to deliver, or we would be removed from the job. I am happy to report that my crew delivered in spades.

Radiant floor heat serves as the primary heat source in the seven condominiums. Each one is sub-divided into multiple zones using manifold tel-stats. We incorporate second stage hot deck coils on the air handlers. This also serves as a backup in the event of a component failure in the radiant system. Cooling is provided using Carrier unitary equipment. A central chiller plant was considered, but space, noise and billing issues shelved this idea. Fresh air is ducted into each unit through an Aaon make-up air unit, which brings in 1,800 cfm of fresh air while filtering and conditioning (heating/cooling/de-humidification) the air, depending on ambient conditions. Common areas such as the lobby, hallways and elevator lobby are conditioned by a gas pack rooftop unit. A back stairwell and a common area exercise room are conditioned by Mitsubishi ductless split units.

The heart of the mechanical system was the boiler plant: Two Lochinvar Knight XL condensing gas boilers. The two boilers are staged with a tekmar staging/reset control. The boilers supply two 120-gal., indirect DHW tanks, radiant zones, hot deck coils on the air handlers and snowmelt for the parking ramp and public walkways. Snowmelt is automatically controlled by a tekmar 661 snow/ice detection control. A timer switch allows for manual activation of the system. The radiant supply water is mixed down using Wirsbo Pro Mix 101 controls tied to Belimo 3-way floating action motorized valves.

The underground parking garage was ventilated with two 7,500 cfm exhaust fans with a fresh air louver at the opposite end of the garage. A Macurco CO monitor and switch activates the fans if ambient CO in the garage rises above 25 ppm. In addition, a timer runs the fans for 10 minutes every hour, regardless of CO level, to flush out stale air and bring in fresh air.

One of the biggest challenges on this project was logistics. With no parking, difficult deliveries and limited staging area, poor planning would have been costly. I learned quickly to plan ahead, coordinate deliveries and arrive at the site early. We were able to use the underground garage for a while, but my bigger work trucks would not fit in the garage. I had budgeted $2,000 for parking tickets on this job, but we have already racked up over $5,000 in tickets, and we are just starting the rowhouses. This has to be factored in when pricing the job. You are not going to do a commercial project in Georgetown and not get tickets.

This condominium project has been operational since late 2009. The six rowhouses are going up at this writing. Commercial jobs lend unique challenges to mechanical projects that require unique solutions. Our commercial project base is growing, and we have several more in progress. Don't be afraid to jump in and try a commercial project, but make sure that you are adequately prepared and are ready for tight schedules and hard work.

I will detail the logistics getting, designing, planning and installing large residential and commercial projects in future columns.

More information on the Wormley Row project can be found at these links: www.wormleyrow.com/, www.cunninghamquill.com/pages/Project.aspx?PROJECT=31,

http://georgetownmetropolitan.com/2009/10/08/survey-of-historic-school-buildings-in-georgetown-the-wormley-school/. ■

Dan Foley *is owner of Foley Mechanical, Inc. His company has 14 full-time & two part-time employees. His primary focusis on radiant and hydronics with large custom homes. Foley also does service, replacement, HVAC, sheet metal, controls, piping, renewables (geo and solar thermal), which serves the Washington, D.C. metro area.*

The views and opinions expressed in this column are those of the author and do not reflect those of *Plumbing Engineer* nor its publisher, TMB Publishing.

pe09_pgs_26_29rev_Layout 1 8/23/11 11:40 AM Page 29

Make Sure Your Customers Win with New Bosch Therm Gas Tankless Water Heaters.
This is our most advanced line of tankless water heaters for North America. This expanded line includes condensing and non-condensing models with more compact sizes and greater installation versatility to handle a variety of residential and commercial applications.

- ▶ Up to 98% thermal efficiency
- ▶ Intelligent cascading up to 24 units on many models
- ▶ 15-year limited residential heat exchanger warranty

Features vary by model. Learn more and see the full suite of Bosch energy efficient solutions at:
www.bosch-climate.us

BOSCH
Invented for life

Federal Tax Credit Eligible
ENERGY STAR

Circle 17 on Reader Reply Form on page 86

pe09_pgs_30_33rev_Layout 1 8/23/11 11:42 AM Page 30

Solar Solutions

Bristol Stickney, chief technical director, SolarLogic LLC, Santa Fe, N.M.

In-tank heat exchangers

Nearly every solar heating installation I have done in recent years has included a solar-heated domestic hot water (SDHW) tank. The smallest systems sometimes include no other solar heating load. While the larger solar combisystems may include radiant heated floors, hot water baseboards, swimming pools and other heating jobs, the SDHW tank is virtually always included.

I tend to shy away from external solar heat exchangers when potable water is involved. This is because, in my region of northern New Mexico, hard water is a fact of life. I have lost count of the number of times that I have pulled apart an old solar water heater and found the potable water-side of the original external heat exchanger completely clogged with minerals, and the water-side circulator ruined for the same reason. The heat exchanger looks like someone filled it with concrete. In some cases, this has happened as quickly as only two years or so after installation.

External heat exchangers have been (and still are) marketed as a cost-saving way to convert a conventional DHW tank into a "solar" tank. But when this equipment clogs up and dies prematurely, where is the savings in that? So, whenever the water quality might be questionable, the solution I have found to be both Reliable and Elegant is the in-tank heat exchanger. It continues to produce solar hot water year after year, even when the internal surfaces become coated with minerals, and there is no need for a water-side circulator, since the heat exchanger is immersed in the potable water. My goal, as a solar designer, has always been to make the solar equipment last as long as conventional equipment or longer. The in-tank heat exchanger has proven equal to the task.

A leak in a single wall heat exchanger will cause the higher pressure water to mix with the lower pressure hydronic fluid, typically causing the hydronic pressure relief valve to discharge and diluting the hydronic fluid with water. When the toxicity of the hydronic fluid is in question, or when the administrative authority will not allow single wall for any reason, a double wall heat exchanger will usually pass inspection. It is best to confirm this detail with the relevant authority before ordering the tank.

Water heaters with double wall heat exchangers meet the Uniform Plumbing Code for installation in all potable water systems. The double wall construction provides protection in the event that either the potable or hydronic heat exchanger barrier is penetrated. The fluid will move along in integrated leak-path between the walls of the heat exchanger, leaving the exchanger through a weep hole located in the fittings on the outside surface of the tank. In this way, any leak becomes visible in the mechanical room on the plumbing connections on the tank.

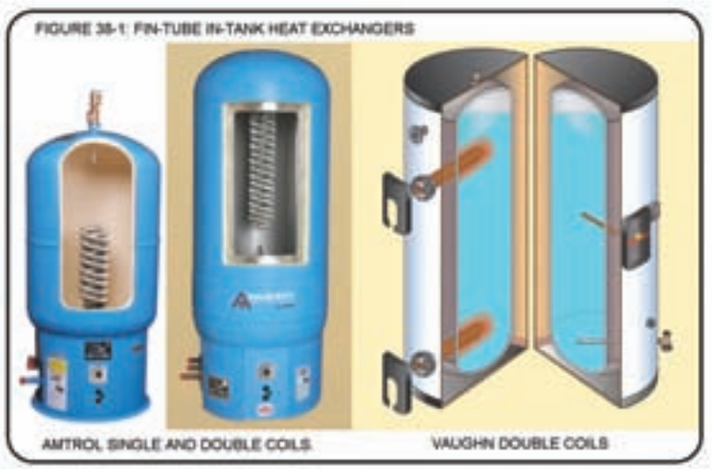


FIGURE 38-1: FIN-TUBE IN-TANK HEAT EXCHANGERS

Single wall or double wall

Many manufacturers of in-tank heat exchangers offer the choice of either single wall or double wall construction. Single wall heat exchangers have become more popular in recent years, since non-toxic heat transfer fluid has become a common standard in solar hydronic systems. Single wall construction is typically lower in cost and higher in thermal performance. Single wall heat exchangers are usually permitted if they satisfy all of the following requirements:

1. The heat transfer medium is potable water or contains only substances which are recognized as safe by the U.S. Food and Drug Administration (e.g. propylene glycol).
2. The pressure of the heat transfer medium is maintained less than the normal minimum operating pressure of the potable water system.
3. The equipment is permanently labeled to indicate that only additives recognized as safe by the FDA shall be used in the heat transfer medium.

Fin-tube coils

When most people think of a heat exchanger, they commonly think of tubes with fins. Fin coils are well known, since they have been in use in side boiler "side arm" tanks (a.k.a. boiler indirect water heaters) for many decades. Fins are added to small diameter tubing to increase its outside surface area. The heat transfer of an immersed tube is driven only by the natural convection of the water surrounding the coil. Adding fins allows more liquid to make contact with the tube, increasing the amount of convection at any given time. The fin tubes are coiled and folded into a compact shape that will fit through a small access hole.

Figure 38-1 shows two examples of fin-tube tanks that I have used successfully on solar heating installations in

Continued on page 32

pe09_pgs_30_33rev_Layout 1 8/23/11 11:43 AM Page 31

heliodyne
SOLAR HOT WATER

EXCELLENT PERFORMANCE

"Every time I start on a new solar hot water project, I always specify Heliodyne, thanks to their excellent performance."

Engineers are saying great things about us.

"We just completed the monitoring of the new solar hot water system at the Chattanooga Fire Hall (where we received LEED Gold status too). The Heliodyne system is kicking butt! Reclaim and reheat 500 gallons with a 2.3 hour recovery time at 100 degree rise (almost 34% better than expected). Looks like you guys are going to end up being the "go-to guys" in this town."

Randall Metcalf, CEO, Campbell & Associates, Inc.

Featuring the HCOM commercial solar station: Pre-engineered plug & play for commercial use.

Circle 18 on Reader Reply Form on page 86

CALL 1.888.878.8750 TO FIND OUT MORE, OR GO ONLINE

Heliodyne, Inc. • 4910 Seaport Avenue • Richmond, CA 94804
T: 1.888.878.8750 or 510.237.9614 • F: 510.237.7018
Information & Support: info@heliodyne.com
Sales Inquiries: sales@heliodyne.com
www.heliodyne.com

EXCELLENCE BY DESIGN®

pe09_pgs_30_33rev_Layout 1 8/23/11 11:43 AM Page 32

Solar Solutions

Continued from page 30

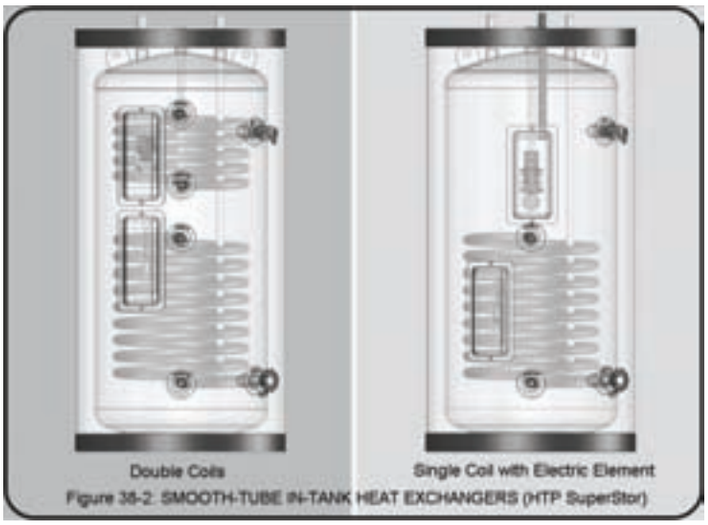
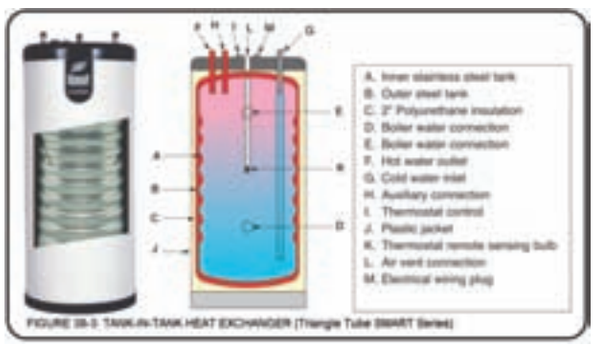


Figure 38-2: SMOOTH-TUBE IN-TANK HEAT EXCHANGERS (HTP SuperStor)

the past. The Amtrol examples on the left are "boiler sidearm" tanks that have made an easy transition to the SDHW world. The Vaughn example on the right allows slightly easier removal of the coils through the side of the tank, rather than through the top and bottom.

When exposed to hard water, mineral deposits build up on the fins. The fins can become completely covered by minerals, and the heat transfer will slow down considerably, but the system will still make hot water, heated by lumps of hot minerals. In many cases, maintenance has been overlooked for a decade or more, even with significant mineral buildup. It is possible, however, to remove the coils and dip them in cleaning solution to remove the



mineral deposits. This procedure can be less frequent and less costly than repairing or replacing the clogged tubing and failed pump from an external SDHW heat exchanger.

Smooth-tube coils

Another way to increase the surface area of an immersed coil is to use a smooth tube (no fins) with a larger diameter. An example is shown in **Figure 38-2**. There has been a large increase in the number of tanks that offer this choice in recent years, especially in a variety of stainless steel products. These tanks show great promise in both longevity and thermal performance. This seems to be an instance where we have rediscovered that "simpler is better." As the larger diameter tubing heats and cools during its daily routine, the metal surface expands and contracts. The smooth surface tends to break away from the mineral deposits, which can actually fall away from the tubing. So, the smooth tubing is more likely to be self-cleaning than the fin tubing during thermal cycling. Even coated with minerals, the large smooth surfaces will continue to provide heat to the surrounding water.

Another version of this can be seen in **Figure 38-3**, in which a stainless steel water tank is contained inside a second tank. The surface of the water tank itself becomes the "smooth tube" single wall heat exchanger. The water tank is essentially immersed in a bath of hot hydronic fluid. If minerals build up, they do so on the entire inside surface of the water tank; again, this will not stop the production of hot water in the tank. We have installed a number of tanks like those seen in Figures 38-2 and 38-3 in recent years, and so far they have lived up to our expectations.

Final notes

These articles are targeted toward residential and small commercial buildings smaller than 10,000 square feet. The focus is on pressurized glycol/hydronic systems, since these systems can be applied in a wide variety of building geometries and orientations with few limitations. Brand names, organizations, suppliers and manufacturers are mentioned only to provide examples for illustration and discussion and do not constitute recommendation or endorsement.

Bristol Stickney *has been designing, manufacturing, repairing and installing solar hydronic heating systems for more than 30 years. He holds a Bachelor of Science in Mechanical Engineering and is a licensed mechanical contractor in New Mexico. He is the chief technical officer for SolarLogic LLC in Santa Fe, N.M., where he is involved in development of solar heating control systems and design tools for solar heating professionals. Visit www.solarlogicllc.com for more information.*

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

1. Reliability
2. Effectiveness
3. Compatibility
4. Elegance
5. Serviceability
6. Efficiency

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

The views and opinions expressed in this column are those of the author and do not reflect those of *Plumbing Engineer* nor its publisher, TMB Publishing.

pe09_pgs_30_33rev_Layout 1 8/23/11 11:43 AM Page 33

WHEN YOUR FLUSH VALVE AND TOILET ARE DESIGNED TOGETHER

POWERFUL THINGS HAPPEN

MADERA™ TOILET WITH SELECTRONIC® FLUSH VALVE

DID YOU KNOW

American Standard offers 34 unique flush valve, toilet and urinal combinations to meet your price and performance criteria. Water-efficient, labor-saving, no call-back operation.

All powerful reasons to choose American Standard for your next project. Discover more at **AmericanStandard.com/didyouknow**

American Standard
Style That Works Better

© 2011 AS America, Inc.

Follow us on twitter | Like us on Facebook

Circle 19 on Reader Reply Form on page 86

pe09_pgs_34_37rev_Layout 1 8/24/11 7:17 AM Page 34

What Can Building Information Modeling Do for You?

By Sarah Hodges

It would be fair to say that the general public gives little thought to the mechanical systems behind the buildings in which they live and work. For example, how often does someone visit your home and comment on the efficient sloped piping system in your house? How often do you hear shoppers in a mall comment on the HVAC system (except perhaps that they think the building is too cold)? Yet the building systems are what breathe life into the buildings so many of us depend on, and society would be quick to notice if they were not designed to meet intent.

As buildings increase in complexity, and as the demands for efficiency increase, the sheer number of considerations

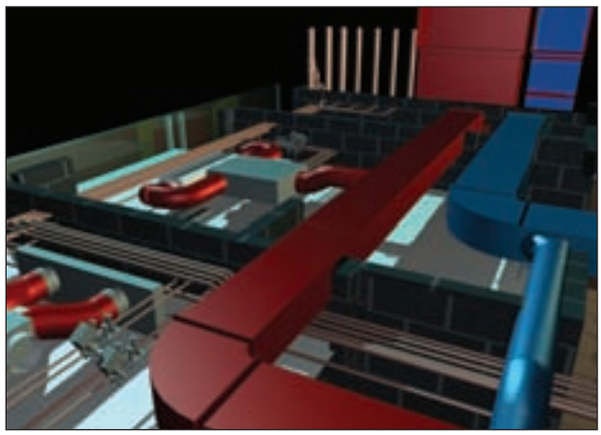


Photo Credit: Courtesy of TruAxis

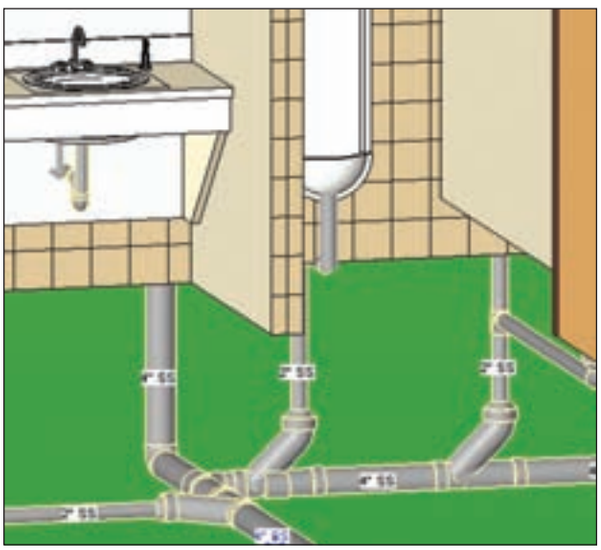
Rendered image of MEP Systems designed using Revit MEP. Image demonstrates how BIM can be used to design and visualize MEP Systems before they are built. Designed in Revit MEP and rendered in 3ds Max Design.

a building systems engineer has to make during the design process increases. Accurate calculations must be performed, coordination with design teams to reduce conflicts must be managed, and, ultimately, constructability must be ensured. With so many elements to consider, many mechanical, electrical, and plumbing (MEP) engineers and designers are continuing to look for ways to streamline their design processes, ensure accuracy, and gain efficiencies. One way to do this is through the use of Building Information Modeling (BIM).

BIM is an intelligent, model-based process that provides insight for creating building system projects faster, more economically, and with less environmental impact. BIM is already rapidly transforming the global architecture, engineering and construction (AEC) industry and is helping firms to gain greater project insight before construction. Nearly half of the companies in the architecture, engineering, and constructionAEC industry in the U.S. have adopted BIM, according to the *SmartMarket Report*: *The Business Value of BIM*, published by McGraw-Hill Construction in 2009. The report also found that 42 percent of nonusers believe that BIM will be highly, or very highly, important in the coming years. This demonstrates the influence that BIM has on the industry today and the momentum that is expected to continue in the future.

In the U.S., the architectural community has spearheaded the adoption of BIM. Increasingly, owners are becoming aware of the benefits an intelligent, model-based design approach provides and are beginning to specify BIM as a standard project requirement. As these demands continue, a shift in the industry is occurring, and engineers find themselves at a crossroads. In an industry that has historically used CAD-based solutions to design and document intent, MEP engineers are now faced with competitive pressures to move to BIM as their design team counterparts and project owners begin to demand it.

Those that decide to make the transition to BIM are finding themselves positioned to win more work as they actively promote themselves as a BIM-ready firm. As MEP engineers become increasingly aware of the benefits that BIM provides, it is expected that movement from CAD to BIM will continue to increase in this industry segment. For example, the 2009 McGraw-Hill Construction



BIM enables engineers to more effectively design better-performing building systems from the earliest stages of the workflow.

SmartMarket Report states that, over the next two years, the use of BIM by MEP engineers is expected to triple.

The MEP engineering industry has been accustomed to CAD software since the early 1980s, so what is it about BIM that is changing the way buildings are being designed and constructed? Unlike CAD, BIM facilitates a new way of working that creates designs with intelligent objects and keeps design information coordinated and consistent throughout the project lifecycle. The BIM process is based on information-rich, model–based designs. These models provide the foundation for more accurate analysis and simulation of designs and projects, helping MEP engineers to anticipate potential challenges and to better predict the success of their designs. Integrated analysis and simulation fea-

Continued on page 36

pe09_pgs_34_37rev_Layout 1 8/23/11 11:51 AM Page 35

INTRODUCING

BASYS™

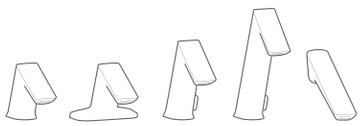
Any Application. Any Environment.™

©2011 Sloan Valve, Inc. All rights reserved.

VISIT US AT
GREENBUILD
BOOTH #4328
OCT. 4-7

Indication is the first step to diagnosis.

For over two years, we conducted field research and talked to plumbers, architects and engineers to develop real innovations for the people who service our products. The result is BASYS – a modular line of electronic sensor faucets that make ease-of-service a top priority. Multiple individual external indicators. One-tool entry. Above deck access. One-twist water shut off. Interchangable componentry. Backed by a century of Sloan experience, Basys meets the demands of commercial plumbing industry and the people who use our products.



Build your Basys online: **sloanvalve.com/basys**

SLOAN®

Circle 20 on Reader Reply Form on page 86

pe09_pgs_34_37rev_Layout 1 8/24/11 10:18 AM Page 36

BIM technology

Continued from page 34

tures support the MEP engineering design process, enabling engineers to more effectively design better-performing building systems from the earliest stages of the workflow.

Simply put, from concept through construction, BIM can help MEP engineers create better buildings with intelligent, model-based design, use integrated analysis to inform design and construction decisions, and produce compelling visualizations to help communicate and market ideas more successfully. A design can be simulated, results visualized, and behavior analyzed early on in the design process. As design changes are made, the model remains updated and consistent. When it comes to producing necessary construction documentation, errors are reduced, as documentation remains coordinated with design data. Even on the most complex of projects, BIM can help MEP engineers design and document accurately and efficiently.

Firms that have embraced BIM are benefiting from the use of intelligent models at every stage of the workflow. MEP professionals make better-informed decisions using analytical results, minimize the risk of errors, achieve sustainable design goals, and collaborate more effectively across the project team. For MEP engineers, BIM allows for greater accuracy during design. BIM also helps to improve efficiency, since engineers can design systems that better meet architectural intent by using the design model created by their counterparts as a foundation. Firms also can achieve sustainable design goals with integrated analysis tools that help to determine energy consumption with necessary calculations and analysis performed from the earliest stages of design. Intelligent information inherent in the model helps MEP engineers to more effectively and efficiently design and deliver building systems.

Consider that up to 80 percent of a building's cost is incurred post-construction, during operations and maintenance, and imagine what impact that has on an increasingly cost-sensitive owner. At a time when efficiency is a top priority, consider the benefits a model-based design approach can provide to improve building energy performance, reduce water use, and help ensure a project is delivered on time and on budget. These are certainly attractive advantages to any owner concerned with gaining cost efficiencies and budgeting predictability over the life of their building. Add to that the ability to predict performance before construction and communicate intent through compelling visualizations, and it seems only logical that you should let BIM help you plan and execute your next project. ■

Sarah Hodges *is the senior industry marketing manager, Architecture, Engineering and Construction, Autodesk.*

Circle 21 on Reader Reply Form on page 86

pe09_pgs_34_37rev_Layout 1 8/23/11 11:51 AM Page 37

BE › THINK › INNOVATE ›

ALPHA™

POWERED BY RELIABILITY

Today, 2.5 million ALPHAS are hard at work.

Easy to install. Easier to maintain and operate. Backed by 60 years of pump innovation, ***the ALPHA you install is the most dependable small circulator pump in the world today.***

AUTO*ADAPT*™
RELIABLE ENERGY SAVINGS

ALPHA's AUTO*ADAPT* technology takes the guesswork out of achieving maximum system performance, efficiency and savings:

- Automatically adjusts speed to meet system demands
- Uses up to 80% less energy than standard circulators

POWERED BY THE IMPOSSIBLE

To find out more about Grundfos energy-efficient circulators visit us at:

poweredby.grundfos.com

facebook.com/GrundfosPumpsUSA

twitter.com/GrundfosPumps

GRUNDFOS

Circle 22 on Reader Reply Form on page 86

pe09_pgs_38_41rev_Layout 1 8/23/11 11:57 AM Page 38

Chemical Manufacturer Exceeds Local Demands to Go Green

Crouched on the banks of Mount Hope Bay and the Taunton River, Fall River, Mass., traces its origins to settlers who, in 1659, drifted over from the Plymouth Colony.

Fast forward to the Industrial Revolution, a time when Fall River earned the title "Textile Capital of the World" and the nickname "Spindle City." By 1911, the city was recognized as the world's largest manufacturing port. It was all about coal, then fuel oil, power transmission, electricity and egregious waste. Hey, our ancestors were hard at work.

In Fall River, "FREE" is the greenest of contemporary acronyms, referring to the Fall River Energy Enterprise. It's a vision plan that provides the town with a direction for economic revitalization with renewable energy projects such as wind turbines and tidal energy generation and adaptive reuse of historic mills.

> "Preservation is the ultimate recycling. It takes about 65 years for a new, energy efficient building to recover the energy lost in demolishing an existing building."

Ultimately, community leaders seek to position Fall River as a regional leader in renewable energy, hoping to attract new business and create jobs, while making the city greener and less dependent on fossil fuels.

"Preservation is the ultimate recycling. It takes about 65 years for a new, energy efficient building to recover the energy lost in demolishing an existing building," said Richard Moe, president of the National Trust for Historic Preservation. Preserving and reusing is exactly what one Fall River company is doing with several turn-of-the-century textile mills.

Borden & Remington Corporation, referred to as "Boremco," is a leading national commodity chemical manufacturer. The company's 26-acre site at the edge of town includes several of the "recycled" textile mills. One of the oldest firms in the community, Boremco recently funded major mechanical system improvements, resulting in a 75 percent decrease in energy costs.

Previously, a 1950s-installed central steam plant was used to heat all the buildings on the site. The 15-million Btu, gas-fired steam boiler dispatched steam through a leak-plagued distribution system. It provided freeze protection to over one million square feet of manufacturing space. That is, until early in '09, when Boremco contacted Thermo-Mechanical Systems Corporation in Assonet, Mass.

Up in smoke; er. . . steam

"The system was using 10 gallons of condensate makeup water every minute," said Bob Kelliher, V.P. of Thermo-Mechanical, a firm that's been designing and installing commercial mechanical systems for the past 20 years. Currently, the company has 16 employees, several of whom spent a year on the design phase for the Boremco project.

"The level of waste heat lost through the distribution system equaled five million Btu every hour, or a full third of the boiler's capacity … thrown away," continued Kelliher.

"We finished the system design and started the installation in the spring of 2010."

The old steam plant was taken offline, and the leaky distribution system was abandoned. Also, management at Boremco decided to consolidate production space.

Continued on page 40

pe09_pgs_38_41rev_Layout 1 8/26/11 9:19 AM Page 39

PLUMBUNITION

IN OUR TRADE,

EVERYDAY IS A BUSINESS BATTLE.
YOU NEED THE RIGHT WEAPONS TO WIN.

SIOUX CHIEF GETS THIS. WE KNOW THAT SUCCESS DOES NOT COME EASILY. YOU ARE NOT GIVEN JOBS. YOU TAKE THEM. YOU ARE NOT GIVEN PROFITS. YOU MAKE THEM. OUR MISSION IS TO SUPPORT YOU WITH WEAPONS TO WIN. WE INVENT, MANUFACTURE AND DISTRIBUTE FULL LINES OF ROUGH PLUMBING PRODUCTS TO HELP YOU WIN BIDS, BUILD YOUR BRAND AND, OF COURSE, MAKE A PROFIT.

CONSIDER SIOUX CHIEF AS YOUR ROUGH PLUMBING ARMORY. TOGETHER, WE WILL TAKE THE FIELD.

Supply Drainage Support

www.siouxchief.com

TAKE THE FIELD.

Circle 23 on Reader Reply Form on page 86

Sioux Chief

pe09_pgs_38_41rev_Layout 1 8/23/11 11:57 AM Page 40

Going Green

Continued from page 38

Unoccupied, beyond repair, and now no longer being heated, two of the buildings are slated for demolition. A few other buildings on the site are rented out as manufacturing space to other companies.

Controls to the rescue

To replace the steam system, Thermo-Mechanical installed four rooftop units to heat two 110,000-sq.-ft. buildings. Each rooftop system is a 1.2-million Btu, gas-fired modular Modine. All rooftop units are controlled by a BLMC iWorx module that includes an outdoor reset function with a variable discharge air temperature and sequential modulation of each multi-stage burner. A single LCI (local control interface) controls all the units from one on-site location.

A single LCI (local control interface) controls all the units from one on-site location.

A key interest of Kelliher's was the ability to link, control and monitor all of the new system components. After researching several options, he settled on a plan to install an iWorx, web-based controls system in the two buildings Boremco still inhabits. The iWorx system, by Taco, is a web-based building management, monitoring and control system specifically designed for the light commercial market.

"What makes iWorx different from other systems," explained Tom Polansky, technical service engineer at Taco, "is that you don't need special tools, software or computers to do the installation or commissioning." Once wired, programs are resident in the controller. By manipulating control parameters for the specific HVAC equipment from a single, central location through the LCI, engineering time is eliminated, and installation costs drop significantly.

"Once a controller is wired into the system, you just push a button, and it identifies itself on the network," continued Polansky. "No control sequences to write, no website to build."

Boremco maintenance crews were shown how to use the iWorx system, and Thermo-Mechanical remotely monitors it. "Management at Boremco wanted a hands-off approach to system monitoring," said Kelliher. "We remotely monitor the system for Boremco. An iWorx system can be set up to email a message if there is equipment failure or a problem. If the temperature, run time, on/off cycles or anything else of the sort extends beyond set parameters, we're immediately notified.

"This past winter, Boremco's heating energy costs were less than a quarter of what they were in years before. Of course, some of that is attributed to the decreased heat load as a result of not heating the two buildings, but the energy saved is still staggering."

Smooth sailing in choppy waters

"The project had its fair share of challenges," said Dean Haskins, project manager at Thermo-Mechanical. "We laid 5,000 feet of gas line in a 200-year-old facility." Throughout the trenching process, numerous old utility and pipe lines were crossed, some still in use, others long since abandoned. During the design phase, they also learned that many old roof trusses would need to be repaired before the new, packaged rooftop furnace systems could go up."

"There's no doubt that installing the controls system was the easiest part of the job," said Haskins. "We were all very impressed with how quickly it was installed and brought up for online use. Of all the controls I've encountered, iWorx is by far the simplest to install. Commissioning was a piece of cake; just push one little button on the side of the control module, and it's up and running."

"We usually plan for three to five days for commissioning of the controls system. By lunchtime on the first day, my tech called," continued Haskins. "I was under the impression they'd have a problem, given the first installation of the iWorx controls. He asked me what to do for the next three days, because commissioning was finished!"

Of key interest was the ability to link, control and monitor all of the new system components. After researching several options, the plan was to install an iWorx, web-based controls system in the two buildings Boremco still inhabits.

The installation was used as a proving ground for the iWorx controls system. Boremco hopes to put up additional buildings in the near future, to lease out to other tenants. "There's no question about it," said Kelliher. "The new buildings will be controlled by iWorx." ■

pe09_pgs_38_41rev_Layout 1 8/23/11 11:57 AM Page 41

Low-lead valve tempers water to shower & eyewashes up to 78 GPM

Valve tempers water to shower & eyewashes up to 78 GPM

Low-lead valve tempers water to shower & eyewashes up to 74 GPM

Low-lead valve tempers water to shower & eyewashes up to 31 GPM

Valve tempers water to shower & eyewashes up to 31 GPM

Low-lead valve tempers water to eyewashes up to 12 GPM

Valve tempers water to eyewashes up to 12 GPM

A SIZE FOR EVERY EMERGENCY

Our thermostatic mixing valves are the only valves on the market that have been developed specifically for use in emergency equipment. If you want the utmost in safety with the highest standards, check out our family of valves. There's sure to be a size that's right for your needs.

- MAINTAINS ANSI COMPLIANCE EVEN IN BYPASS MODE
- REDUNDANT ANTI-SCALD PROTECTION*
- WAX-BASED THERMOSTAT FOR FASTER RESPONSE TIME
- VIRTUALLY ELIMINATES VALVE BINDING
- NSF 61 & AB1953 CERTIFIED LOW LEAD*
- ASSE 1071-2008 COMPLIANT, CSA LISTED
- 3-YEAR EXTENDED WARRANTY

Haws®

www.hawsco.com/pe :: 888.640.4297

*on select models

Circle 24 on Reader Reply Form on page 86

pe09_pgs_42_45rev_Layout 1 8/23/11 12:01 PM Page 42

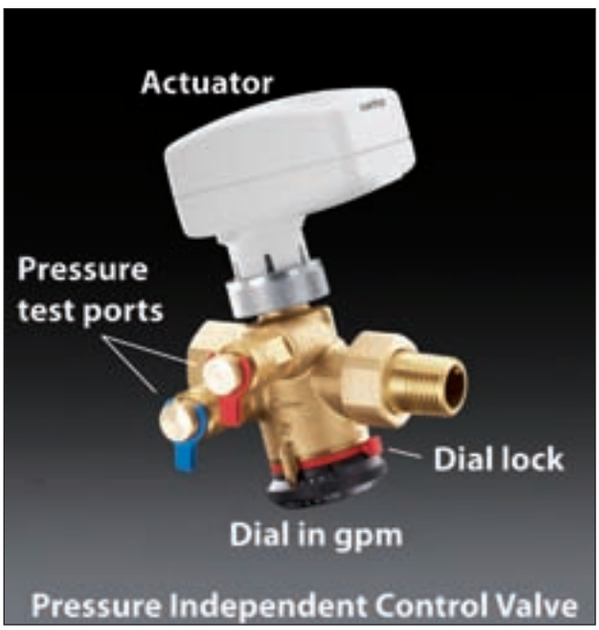
Accurate Flow Control with Enhanced System Performance

By Peter Biondo

Energy efficiency improvements within an HVAC system can be achieved not only by the selection of high efficiency equipment but also in the managed control of flow rates through each terminal unit. Terminal units include fan coils, air handlers, chilled beams, radiant heat emitters and convectors. Balancing valves and control valves typically manage flow through the terminal unit. Without good hydronic balancing, flow will vary and is difficult to control as valves open and close throughout the building.

Flow control across a terminal unit is a problem with some HVAC systems. Overflow will raise the average temperature of the terminal unit and resulting thermal output. Underflow lowers the average temperature, and the terminal unit may not meet load demand. Hydronic systems are subject to dynamic pressure changes when valves open and close. Because of these pressure changes, flows and temperatures in the building are often uneven. The situation worsens at low and medium loads and can cause unwanted system cycling. Boilers and chillers end up running more often. "Out of balance" means "out of pocket" for building owners.

The standard installation will experience differential pressure changes across the control valve, independent of the desired response. A controller signal may have to "hunt" for the flow, as differential pressures change and effectively delay the response time of the terminal unit. Operating efficiency is tightly linked to stable flow rates and a correlating response to a control signal. The ideal hydronic control would be represented by a balancing device and a control valve that achieve the desired flow regardless of any pressure fluctuations. The pressure independent control valve (PICV) combines the features of a differential pressure regulator, a control valve and a balancing valve.

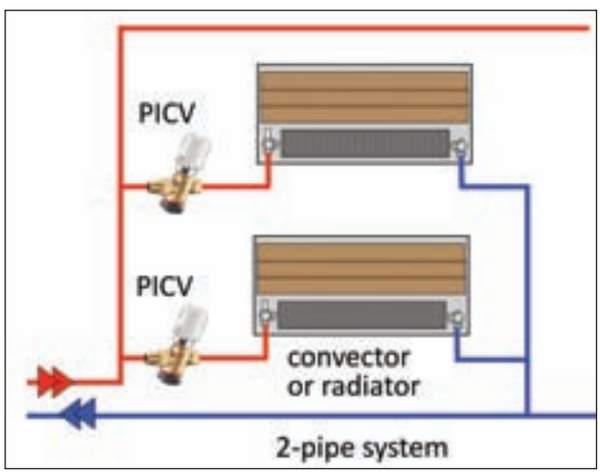


The pressure independent control valve (PICV) combines the features of a differential pressure regulator, a control valve and a balancing valve.

PICVs have solved the vexing issue of regulating accurate flow over a wide range of pressure variations. The PICV is a two-way valve that combines control and balance in one valve. Actuators are available for common control signals, including on/off and proportional. Some models employ a dial for selecting the flow rate in the field. The big advantage that the PICV has over other balancing devices is the operation of the differential pressure regulator. All pressure changes across the PICV are absorbed by a differential pressure regulator, which maintains a constant differential pressure across the control valve. Because of this control, valve authority in the PICV is 100%.

Three design parameters to consider when selecting the appropriate PICV are maximum design flow rate, available minimum differential pressure and possible maximum differential pressure. To regulate the flow correctly, the valve needs to operate within a range of

Continued on page 44



It is important in low energy buildings, to have design flow at the control of a fan coil, air handler, chilled beams, radiant heat appliance or convector.

pe09_pgs_42_45rev_Layout 1 8/23/11 12:01 PM Page 43

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 !

QUALIFIES FOR FEDERAL TAX CREDIT OF: **$300**

SAVE ENERGY WATER MONEY

- 10 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

Circle 25 on Reader Reply Form on page 86

TOLL FREE **800.582.8423**

www.stiebel-eltron-usa.com

ENERGY STAR

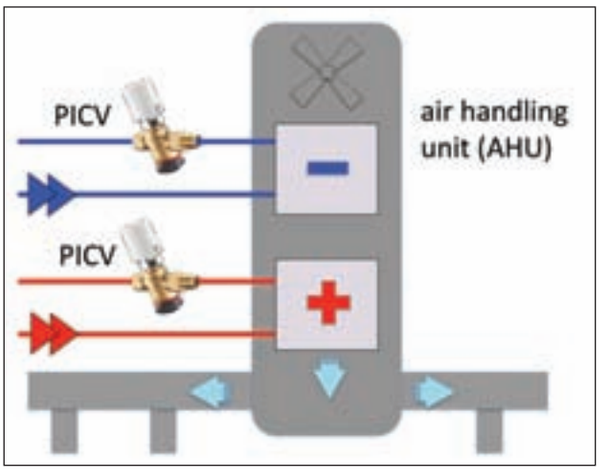
STIEBEL ELTRON
Simply the Best

pe09_pgs_42_45rev_Layout 1 8/23/11 12:01 PM Page 44

Flow control

Continued from page 42

differential pressure, bound on the bottom by the minimum differential pressure available and on the top by the maximum differential pressure possible. When designing, be sure that the pump keeps the valve within these parameters. To keep costs in line, choose the smallest possible valve that achieves the maximum design flow rate. These design parameters will help you select the best PICV for your application.



Every designer should plan for energy efficiency by accurately controlling flow. Installing PICVs at terminal units in order to correct flow issues is a simple solution.

Features of the PICV

Features vary with manufactured PICV models. A benefit of all models is that they are compact; one valve takes the place of two. Common to all PICVs is a pressure regulator, consisting of a spring and diaphragm cartridge assembly. Differences are in the flow control mechanism. Some models have a control disc to fine tune flow; others use the turn of a ball-style valve. Multiple flow rates may be available in one valve. Some of these models incorporate a field-adjustable dial for setting the top end flow rate. These dials are lockable. Getting to them may require removing the actuator or opening a side hatch; in others, the dials on the valve can be turned and are readable in any position.

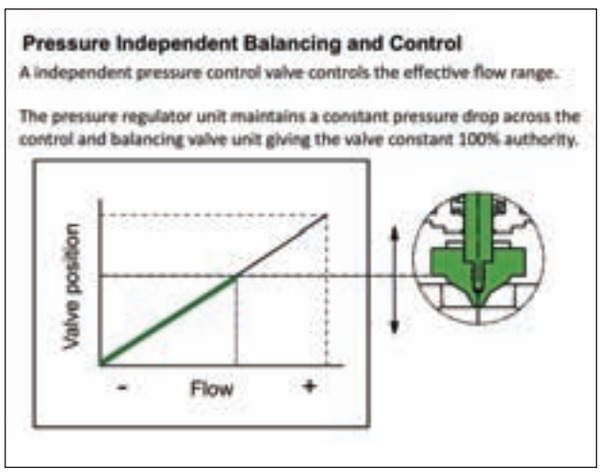
Some dials are in percentage values, while others are marked in gpm. Pressure test points are available on most models. In addition to being easy to design with, PICVs offer a simplified balancing procedure. Some valves are not adjustable and are set at the factory; others are set in the field. Both types only require the differential pressure across the valve to be verified to ensure proper flow.

PICVs are designed to operate within the specifications that most HVAC systems will require. Flow control starts at 0.5 gpm with a ½-inch valve and covers the range of flow to over 700 gpm with a 6-inch valve. PICVs operate over a wide range of differential pressures. Minimum differential pressure, which can be as low as 3, is typically at 5 psi. Maximum differential pressure is up to 50 or 60 psi. Some models can operate with differential pressure as high as 90 psi. Flow accuracy per model varies from +/-3% to +/-10%. Depending on the model, working temperatures may range from 0 F to 250 F. Maximum working pressure for a PICV may be as high as 300 psi. Please consult manufactured models for product specification.

PICVs with variable flow systems

There is no doubt why PICVs have gained wide acceptance in today's energy efficient market. Using variable frequency drive (VFD) for pump control enables the pump to change speed based on a control differential pressure at a reference point in the system. A variable speed pumping system will provide just the right amount of flow to meet the changing requirements. PICVs lend themselves to the energy saving features that VSD provides by allowing the desired flow at each terminal unit.

Accurate flow capitalizes on the benefits of variable volume pumping systems. Overflow is eliminated, increasing available plant capacity and may minimize capital expense for additional capacity. The PICV's ability to maintain stable flow is useful as occupancy loads shift from one room to another. The use of PICVs assures that only the necessary amount of chilled or heated water is delivered to the cooling and/or heating load at all times.



This article describes how the use of PICVs results in improved efficiency and control. In writing it, I realized how important it is, in low energy buildings, to have design flow at the control of a fan coil, air handler, chilled beams, radiant heat appliance or convector. Ideally, every designer should plan for energy efficiency by accurately controlling flow. Installing PICVs at terminal units in order to correct flow issues is a simple solution. ■

Peter Biondo *is the technical sales coordinator for Oventrop Corporation.*

© 2011 Masco Corporation of Indiana

THIS IS ONE VERY **RESPONSIVE** FAUCET.

Arzo® Bath Collection

Proximity™ Sensing Technology is the next generation in responsive hands-free functionality that contributes to water efficiency. This revolutionary technology transforms the entire faucet into a sensor, automatically responding when approached. There are no optics or infrared to maintain. All backed by the industry's best 5-year limited warranty. Another way that Delta is more than just a faucet.

Visit deltafaucet.com/commercial/proximity
or deltafaucet.com/professionals

DELTA

see what Delta can do™

Scan the QR code to see our Proximity Sensing video.

Circle 26 on Reader Reply Form on page 86

pe09_pgs_46_51rev_Layout 1 8/23/11 12:03 PM Page 46

Restrooms Achieve New Level with Innovative Technologies

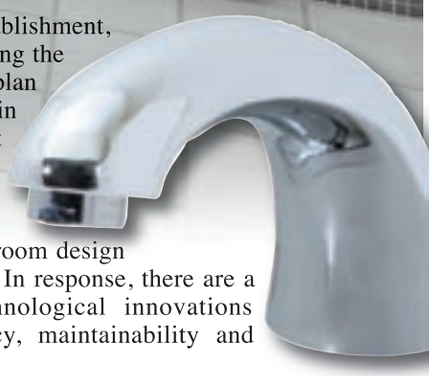
By Jason Renner

The design of today's newer commercial restrooms is light years ahead of designs of even a decade or two ago. Due to the influx of new technologies and products, commercial restroom design has seen a number of innovations and significant advancements. There is now demand for products and materials that have sustainable, durable, low-maintenance, hygienic and water- and energy-saving qualities. The key is blending such utilitarian product features with sleek, modern and residential-inspired styling.

It's a well known fact that the majority of visitors entering a facility stop at the restroom, so many building owners and managers are motivated to allocate increased resources to ensure a positive restroom experience. Establishments that ignore restroom conditions risk real damage to their business, according to research conducted in 2011 by Bradley Corp., manufacturer of restroom and plumbing fixtures.

The study found that half of Americans have had an unpleasant experience in a public restroom, due to the condition of the facilities. The annual survey, which looked at Americans' handwashing habits in public, showed that 35 percent of respondents said they left the facility after visiting the restroom, cutting short their transaction at the business establishment, 35% will think twice about using the business again and 36 percent plan to never frequent the business in the future. One-fourth said that they spread negative word-of-mouth about the business following the experience.

The bottom line is that restroom design impacts business profitability. In response, there are a number of trends and technological innovations focused on driving efficiency, maintainability and attractiveness in the restroom.



Bradley's 1200 Series CS Faucet

Sustainability and maintainability = profitability

From lighting to fixtures to flooring, there are numerous technologies and sustainable materials that will help improve efficiency and achieve LEED (Leadership in Energy & Environmental Design)

Continued on page 48

pe09_pgs_46_51rev_Layout 1 8/23/11 12:03 PM Page 47

BLÜCHER®

STAINLESS STEEL DRAINAGE SYSTEMS

A Watts Water Technologies Company

Drainage by Design

When you're designing a drainage system, whether it's a commercial kitchen, resort hotel, or sanitary manufacturing facility, your specification can make all the difference. Every aspect, from surface drainage to piping, can contribute to the optimum design.

At BLÜCHER, we support the pursuit of efficient and effective specifications. That's why we fabricate all our drainage systems in stainless steel – a conspicuously superior material. BLÜCHER drainage systems combine functional durability and aesthetics to create classically flawless systems. And because BLÜCHER is now a Watts Water Technologies company, you can specify it with confidence.

Find drainage systems and all the inspiration you'll need at BLÜCHERdrains.com.

KEEPING UP THE FLOW

Circle 27 on Reader Reply Form on page 86

For more information visit our web site at www.BLUCHERdrains.com

pe09_pgs_46_51rev_Layout 1 8/23/11 12:03 PM Page 48

Restroom innovations

Continued from page 46

Touchless fixtures minimize touchpoints in restrooms where germs linger, while reducing water consumption; sometimes up to 30 percent of a facility's total water consumption.

certification.

More manufacturers are incorporating sustainable materials into restroom products, which can increase the maintainability and life span of these products. One of the newest materials available for lavatory fixtures is a molded, natural quartz material that can be sculpted into a range of design options — curves, soft radius edges and attractive shapes. This natural material, composed of 25 percent pre-consumer material and a bio-based resin made of soy and corn, costs less than granite and is virtually maintenance-free, since it does not require sealing, buffing or reconditioning. Also, unlike granite, quartz material can be repaired, and its smooth, seamless finish has a non-porous surface, so it does not support microbial growth.

Solid surface lavatory countertops made of recycled materials composed of pre-consumer recycled content and rapidly renewable material also help ensure long-term durability, ease of cleaning and long-term maintenance. Solid plastic toilet partitions made from 100% post-consumer recycled high density polyethylene (HDPE) plastic are another option. The solid plastic material is ideal for heavy usage, especially in wet humid conditions, and is easy to maintain.

Light-activated lavatory systems are another innovation that saves energy and costs. Newer lavatories incorporate the use of photovoltaic cells integrated into the top of a lavatory system to convert light into energy. Whether natural light or normal restroom lighting, the cells capture light when it is available and store the energy for later use in a battery-free system. This eliminates the need for electrical hookups, resulting in a fixture that is not only energy efficient and environmentally sound but also virtually maintenance-free.

Curbing water usage

Implementing water conservation strategies provides another way to go green. Low-flow fixtures have become the standard in commercial restrooms. For example, while high-efficiency toilets use less water to flush waste, dual-flush toilets conserve water by using different amounts of water for various flushing needs. Most models use 1.6 gpf for solid waste and 0.8 gpf for liquid waste.

Building owners wanting to take the next step in conservation are using ultra-low flow toilets and waterless urinals. Sensor-activated flush meters can also be used to control water use at peak times. Tankless water heaters concealed within the pedestal of lavatory systems are another way to increase efficiency. These tankless units heat only the amount of hot water needed for each use, which eliminates wasting electricity to heat an entire hot water tank for restrooms.

Hands-free faucets with infrared or capacitive sensors also restrict water usage, reducing up to 30 percent of an average commercial facility's water consumption. Such fixtures that feature less than the 2.5 water conserving gallons per minute (gpm) standard can also help earn LEED credit. These fixtures also save energy, because the faucet automatically shuts off after a user's hands leave the sensor area. Some newer touchless fixtures use just 0.38 gpm faucets vs. 0.5 gpm, which achieves over 20% water savings.

Restroom surfaces: a touchy subject

Many consider public restrooms a breeding ground for germs and prefer not to touch anything during their visit. And they are right; germs in restrooms lurk in wet areas, around sink crevices and on door handles. One solution is using antimicrobial coatings and washroom accessories (grab bars, partition door pulls and latches, etc.) designed to inhibit the growth of bacteria and other microbes, beginning when the microorganisms first

Continued on page 50

Modern-styled mirrors in restrooms can help promote a sophisticated spa-like feel in a public restroom.

pe09_pgs_46_51rev_Layout 1 8/23/11 12:03 PM Page 49

SIZE ... DOES MATTER.

We've got you covered ...

From 3/8" to 2" with TECTITE™ push fittings from Elkhart Products Corporation – with both standard and low lead fittings.

Available Sizes:

3/8"
1/2"
3/4"
1"
1 1/4"
1 1/2"
2"

TECTITE™
WORK SMART

an Aalberts Industries company

For more information, call **1.800.423.8078**
or visit us online at www.elkhartproducts.com

Elkhart Products Corporation
For the perfect fit

EPC

Circle 28 on Reader Reply Form on page 86

pe09_pgs_46_51rev_Layout 1 8/29/11 12:20 PM Page 50

Plumbing Engineer's Website
brings the industry
online directly
to specifying
engineers

Access dozens of features:
- Industry news blog
- New products
- Exclusive event footage
- Free white papers
- Extensive archives
- Articles, columns & more!

Visit us online today at
www.plumbingengineer.com

Restrooms

Continued from page 48

Coordinating stainless steel washroom accessories create a common aesthetic for a complete and polished look.

come into contact with the product's surface.

Using hands-free faucets, hand dryers, paper towel dispensers and soap dispensers is another common strategy to help users avoid touching surfaces contaminated with bacteria or viruses in the first place.

Newer models of hand dryers use 80 percent less electricity, while drying hands in as little as 10 –15 seconds, about three times faster than most hand dryers. The energy to operate these new models is generally less than 10 percent of the cost of paper towels; including labor costs for ordering, storing, replenishing dispensers, collecting and disposing of paper towels. That's not to mention the environmental benefits of conserving resources and eliminating excess paper waste.

Washroom accessories take the stage

Washroom accessories are typically considered to be boxy and institutional-looking and often fade into the background of a restroom's design. The newest models of stainless steel washroom accessories, however, incorporate a more attractive dual-curve geometric design and present a more modern and polished appearance. It's important to furnish a restroom with coordinating accessories throughout for a common aesthetic and a complete look.

Mirrors are another key accessory from a design — and security — standpoint. New models have adopted a more modern and spa-like look, with acid-etched frosted glass and various border styles. Well-planned mirror placement can also increase security by allowing a sightline from the entrance to the back of the restroom.

While trends and technology evolve, restroom design continues to be driven by functionality, sustainability, efficiency, maintainability and polish — a winning combination that will attract the repeat customer and promote business profitability. ■

Jason Renner *is a senior product manager at Bradley Corporation, a leading manufacturer of plumbing fixtures, washroom accessories, partitions, emergency fixtures and solid plastic lockers. He can be reached at Bradley Corp., W142 N9101 Fountain Blvd., Menomonee Falls, Wis., 53052-0309. For more information, call 800/BRADLEY or visit www.bradleycorp.com.*

pe09_pgs_46_51rev_Layout 1 8/23/11 12:03 PM Page 51

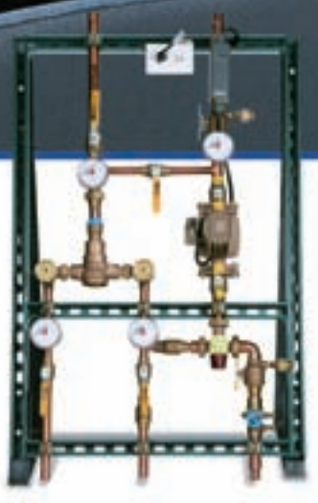
Finally, valve configuration online!

FEATURING – PowerStation™
Water Tempering and Recirculation Systems

Dynamic duo simplifies valve specification – increases valve system performance.

Take the work out of valve specification with Powers' new online valve configuration software. Log on today to configure our new HydroGuard® XP master mixing and hi/lo tempering valves.

- *Easily configure new HydroGuard® XP valve systems*
- *Quickly go from design to 2D and 3D drawing downloads*
- *Draft, revise, print, share and securely archive plans*
- *New valves are ASSE 1017, ASSE 1071 listed and CSA B125 certified*
- *Valves regulate outlet temperature at flows down to 1 gpm*
- *Control at approach temperatures as low as 5°F*



Visit www.DynamicDuoExposed.com/pe

POWERS™
A Watts Water Technologies Company

Circle 29 on Reader Reply Form on page 86

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 52

Jay R. Smith Mfg. Co.

Celebrating 85 years of industry leadership & commitment

By John Mesenbrink,
editorial director

Eighty-five years is witness to A LOT of history, some of it coming with its share of uncertainty — The Great Depression, WWII, the Korean and Vietnam Wars, '70s OPEC, Reaganomics, No-Fly Zones, 9/11, the wars in Iraq and Afghanistan and the most recent economic turmoil. Yet, through it all, one thing has been certain — Jay R. Smith Mfg. Co. — ready, strong and staying the task.

Prospering under the fourth generation of Smith management, venerable Jay R. Smith Mfg. Co. has been developing innovative, engineered plumbing and drainage products for decades. 2011 marks 85 years of successful business for the company, and this prosperity is the direct result of its commitment to customers, representatives, vendors and employees.

Steve Chromey, executive vice president, Jay R. Smith Mfg. Co. and a 41-year veteran of the company, said, "I've seen our company grow over these many years and am humbled by the generosity of founder Jay L. Smith to his employees and that he allowed me to help lead his company. It wasn't just a place to work; Jay made you feel part of the organization. I'm not only proud of our physical growth and growth in the industry but proud of seeing people grow, as well. I can look at supervisors who started as welders, clerks, etc., and now have leadership roles in our company."

John Roberts, vice president of domestic sales, and Charles White, vice president of marketing for Jay R. Smith. Mfg. Co. and Acorn family of companies.

Chromey actually worked for Smith when the company was still located in New Jersey. During the summers while he was in high school and college he worked in the plant and then, in the summer of his sophomore year in college, he was asked to fill in at the office. During his senior year, Jay L. Smith called and offered a full time position upon graduation. "I liked the people and the company; I figured I could do it for a couple of years, live at home, save some money and then move on. Well, here I am 41 years later. I've been an order expediter, order scheduler, credit manager, customer service supervisor, production and inventory control supervisor, materials manager, general manager and now I'm in my current position of executive vice president. … I guess they just can't find something I'm good at," Chromey said jokingly.

Talking with Smith management and employees, you can sense an underlying theme of loyalty. "I was here when the doors opened [in Montgomery, Ala.] on January 2, 1979," says Jerry McDanal, vice president engineering. McDanal has held his position for 32+ years, ever since the plant moved from New Jersey to Alabama. "I first interviewed with Smith in October 1978. It is a special feeling to be part of and to have contributed to the growth and prosperity of Smith. It has been gratifying to watch the younger employees grow and take responsible roles and become contributors to our growth. My initial thought was to work for Smith for about five years and return to the consulting engineering field. It did not take long working for Smith to realize that this is where I wanted to be; therefore, I made a commitment to Jay Smith, Steve Chromey and the company to remain a long-time employee."

Amazing in its own right and a testament to the business philosophies of Jay R. Smith Mfg. Co., one-third of the personnel have held employment tenure for more than 25 years. "It's a real tribute to dad's [Jay L. Smith]

Continued on page 54

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 53

The Power of Innovation

Introducing the only commercial size instantaneous water heater above 250,000 BTU/HR.

Once again, AERCO leads the way in commercial water heating technology with the introduction of Innovation, its newest line of premium water heaters. Featuring a tankless design, advanced condensing/modulating technology, and a scale-resistant heat exchanger, Innovation delivers performance and economic advantages to any system.

Here's why Innovation stands out from the crowd:

- Available in three sizes: 600, 800 and 1060 MBH
- Up to 99% efficiency
- High reliability
- Low NOx
- Small footprint
- +/-4° temperature control, thanks to feed-forward sensing and unmatched turndown
- Reduced standby and cycling losses

To learn more about the Innovation family of water heaters, visit www.aerco.com/innovation10

AERCO

AERCO International, Inc.
800.526.0288 • email info@aerco.com

Circle 30 on Reader Reply Form on page 86

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 54

Jay R. Smith

Continued from page 52

Jay Smith and Don Morris.

leadership style. All ideas were frequently considered. He was a true role model," said Dr. Holly Roth, secretary/board of directors and daughter of Jay L. Smith.

While employee loyalty is held in high regard, Smith takes its customer service to another level. "The best part of my job is working with so many dedicated people who strive to do what it takes to do better and to address the needs of our customers and representatives. The energy and dedication of everyone here makes you feel that Jay R. Smith Mfg. Co. is one of the best at servicing the market, listening to customer needs and producing products that solve problems," said Charles White, vice president of marketing and 25-year Smith veteran.

Marketing, headquartered in Montgomery, is directly responsible for all marketing for the Acorn Family of Companies after a recent merger between Jay R. Smith Mfg. Co. and Acorn. One of the first collaborative marketing projects has been a recently launched, all-new branding campaign and new collateral for AcornVac to better position the company for sales and growth.

Loyalty, commitment and growth are all underlying factors in Jay R. Smith Mfg. Co. reaching 85 years of industry leadership and positioning the company toward the 100-year milestone.

The Early Years

Based on the business principles of customer service and fairness, Jay L. Smith started the business out of his basement in 1926 and named the company Jay R. Smith Mfg. Co. after his son. Jay L. was a salesman for the National Lead Company and realized a need for brass and bronze specialties. By 1930, the brass fittings business was successful enough to justify bringing on its first employee, the 19-year-old Jay R.

In the 1930s, an expansion into marine products precipitated a move from New York to Newark, N.J. Although struggling through the Great Depression, the company did grow steadily. With the onset of WWII, the company shifted its regimen to wartime efforts and converted to defense materials production. Shortly thereafter, in 1942, founder Jay L. Smith passed away at the age of 77, leaving the business to his widow and his son, Jay R.

The company's targeted plumbing and drainage specialty market segment was met with a post-war industrial and domestic construction boom. Growth after WWII forced a move to a new facility in Union, N.J., and later to Piscataway, N.J. In 1978, Jay R. Smith retired and the company moved to its present location in Montgomery. The plant is situated on a 33-acre site in Gunter Industrial Park; the plant contains over 250,000 square feet of office, manufacturing and warehouse capacity, which, as a matter of fact, is expanding 50,000+ sq. ft. later this year.

Moving Forward

Through a series of bold business decisions and maneuvers, Smith has always stayed ahead of the game. One such maneuver took place last June when Jay R. Smith Mfg. Co., a division of Smith Industries, joined Acorn Family of Companies, making Acorn a 50% owner of Smith Industries. The vision of the new alliance of Acorn Family of Companies and Smith Industries was to create the foundation for an exceptionally strong company that will be competitively anchored in the industry.

"The goal is to take the strength of Acorn and its engineering excellence and combine it with Smith's customer service and industry relationship strengths and build a better company moving forward," said John Roberts, vice president of domestic sales, Jay R. Smith Mfg. Co.

Mutual dedication between company and employee is

Jay L. Smith, a salesman for the National Lead Company, saw a need for brass and bronze specialties and started his business from his basement in 1926. He named the company Jay R. Smith Mfg. Co. after his son.

unmatched with Smith, illustrated through its base of long-term employees. "The growth success relies on common vision, staying the task and reciprocating employee loyalty," said Don Morris, CEO, Acorn Family of Companies. "It's a seasoned team put together with a new head coach; it's business as usual."

Aligning with Acorn's Family of Companies — strategic positioning in the marketplace

Although the companies didn't merge until recently, they have had a long-standing relationship throughout

Continued on page 56

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 55

C US

The One Mark You Want to See

The CSA mark on plumbing products is all the assurance you need that those products meet U.S. and Canadian standards. You can specify, install, and accept products with confidence when you see the CSA mark. Because no other testing laboratory can match the knowledge, experience, and qualifications of CSA International.

CSA International has earned accreditation and recognition from ANSI, HUD, IAS, NIST/NVLAP, OSHA and SCC. We test and certify plumbing products to applicable North American standards and codes, including those published by ANSI, ASSE, IAPMO, CSA, ASME, ASTM, and NSF. And we are knowledgeable and experienced with IPC and UPC requirements. No one is more knowledgeable of the standards, and no one is more experienced in testing and certifying plumbing products than CSA International.

The Mark of Leadership
CSA marks are found on products from the industry's leading manufacturers – products found on the shelves of North America's major retail chains and inventoried by product distributors coast to coast. But we define leadership more broadly than that. That's why CSA International is also at the forefront of important industry initiatives to simplify testing and certification, and make it easier for you to identify products that meet standards for safety, performance, and health effects.

Learn More...
Learn more about CSA International, certification services, CSA marks, and the products that display them. Visit us at **www.csa-international.org** for listings of products certified by CSA International. Or call toll free: **1-866-797-4272.**

CSA INTERNATIONAL

Global Offices and Laboratories: Atlanta, GA • Charlotte, NC • Chicago, IL • Cleveland, OH • Dallas, TX • Los Angeles, CA Nashville, TN • Edmonton, AB • Montreal, PQ • Toronto, ON • Vancouver, BC • Arnhem, the Netherlands • Bangalore, India Hong Kong, China • Guangzhou, China • Shanghai, China • Seoul, Republic of Korea • Tokyo, Japan

Circle 31 on Reader Reply Form on page 86

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 56

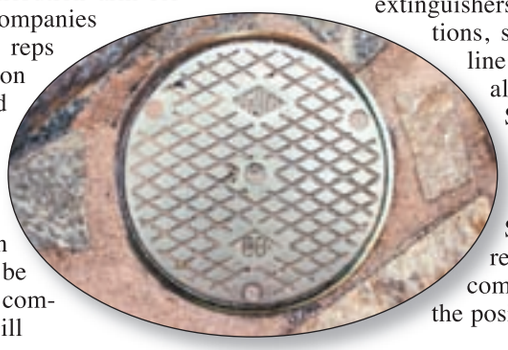
Jay R. Smith

Continued from page 54

Jay R. Smith's family of products has expanded upon its alignment with Acorn Engineering.

the years. Jay R. Smith and Earl L. Morris (Elmco Sales Inc. and Acorn Engineering), both modern-day industry pioneers, each developed strong companies and were partners and friends from 1954, when Elmco became a Jay R. Smith Mfg. Co. representative. The instant relationship and personal bond transcends three generations and continues with the Smith and Morris families. In the early days, Acorn was a manufacturer's rep for Smith. Working off a standard representative contract, "We signed a 30-day contract that has lasted nearly 60 years," said Don Morris.

Working together comes naturally for Smith and Acorn in all areas. The Elmco group, Acorn's representative organization, is a huge distribution arm for Jay R. Smith Mfg. Co. The two companies also have 50 additional common reps besides the Elmco group. In addition to shared distribution, Smith and Acorn are working together operationally. "Smith has already started doing a bit of machine work for Acorn — they do plastic molding for us, we are doing some R&D on one of their products, and we will be jointly marketing another. We are complementing each other, and we will continue to do even more," says Chromey.



A cleanout with the Acorn diamond.

Now this 85-year-old company has a chance to reinvigorate and reinvent itself with the recent 2010 alignment with Acorn.

"In the last seven years, Acorn has doubled its business," said Jim Widmer, vice president of sales, Acorn Engineering. Logistically, the merger just made sense. With Acorn's leadership, the alliance features state-of-the art engineering, manufacturing, more of the "right people" and the ability to turn things around faster. Distribution is now much greater, with major points in Miami, Dallas, Los Angeles, Atlanta, Chicago and Union, N.J., in addition to 46 Smith Service Centers across the U.S. The company offers the same outstanding quality in products and is able to remain competitive with its low-cost opponents. The alliance has afforded the two companies more buying power and more resources to meet the demands in the market. The key, then, is to provide consistent product reliability and on-time distribution.

Also, Acorn's successful alliance with Potter Roemer exemplified the strength of Acorn, making Potter Roemer a leader in the industry. Potter Roemer, a subsidiary of Jay R. Smith Mfg. Co. since 1972, formed a partnership with Acorn Family of Companies in 2003, relocating to City of Industry, Calif., near the headquarters of Acorn. This partnership further demonstrated Acorn's commitment to the industry and devotion to providing the best possible products and services.

Operating from its new 110,000-sq. ft. headquarters and manufacturing facility, Potter Roemer remains dedicated to its core business of fire protection equipment, while changing dramatically from the company that was founded in the 1930s. Over the years, their product range has grown to cover a wide variety of fire protection equipment and accessories, including fire extinguisher hose and valve cabinets, fire hose and accessories, fire extinguishers, fire department valves, connections, specialty equipment and a refined line of architectural products. Acorn's alliance with Potter Roemer, the Smith subsidiary, is just another example of the intertwined and fruitful Acorn and Smith history.

From 1954 to now, Acorn and Smith have had a past of successful relationships; the new alignment of companies will only help strengthen the position in the marketplace.

To the 100 Benchmark

Jay L. Smith, Don Morris and Don's brother, Dennis Morris, third and second-generation sons of Jay R. and Earl, respectively, have continued their business and personal relationships for more than 50 years. The next generation of Smiths and Morrises (Jay L. Smith's daughters, Dr. Holly L. Roth and Debbie Smith and Don Morris's children, Kristin Kahle, Randall Morris and Barrett Morris) pledge to continue what their grandfathers started. The Smith and Morris families will be represented on the new board of directors.

For the realignment, Don Morris assumes the role of CEO of Smith Industries, Jay R. Smith Mfg. Co.

Continued on page 58

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 57

For the fifth straight year, Bradford White is the tank water heater brand most purchased by professional contractors. And again, we are the most recommended brand.

"We made the switch to Bradford White almost 15 years ago when we started having problems with another brand. Our reputation depends on the products we recommend so quality and reliability are critical. We couldn't be happier. Bradford White is loyal to the plumbing profession. Their products and people are top notch." ***Kevin and Ryan Carney - Carney Plumbing – Heating – Cooling, Line Lexington, PA***

The results of the 2010 CLEAReport*, an independent water heater study by Clear Seas Research, revealed that product quality, service, technical support, and the fact that Bradford White is not sold in retail stores were the most important factors to contractors when selecting a brand of tank type water heater.

And now our support for you gets even better. Bradford White has just opened a 24/7, factory-based call center.

This fully staffed technical service team is there when you need it, anytime day or night.

We're making it easy for you to be a Bradford White contractor.

BRADFORD WHITE®
WATER HEATERS

www.bradfordwhite.com | Built to be the Best™ | To Find A Wholesaler Call 800.523.2931

*Ranking is based on the 2006, 2007, 2008, 2009 and 2010 CLEAReports by Clear Seas Research. Please visit www.clearseasresearch.com for additional information. © 2011, Bradford White Corporation. All rights reserved.

Circle 32 on Reader Reply Form on page 32

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 58

Jay R. Smith

Continued from page 56

A selection of floor drains offered by Jay R. Smith Mfg. Co.

Division and the Canadian subsidiary. Jay L. will continue as president and chairman of the board of directors. The management teams of both Acorn Engineering and Jay R. Smith Mfg. Co. will remain the same.

"The partnership with the Acorn Family of Companies is the next great adventure. There is such great energy coming from the merger and from the leadership of Don Morris. I am excited and honored to be a part of it. This will make the Jay R. Smith Mfg. Co. even better; we are already seeing the changes," said White.

To this day, the company remains a privately held business, and it plans to stay that way. "People ask me whether I would be willing to sell the company some day. To that I tell them, 'Drop off your business cards at my funeral,'" said Don Morris. "Privately held companies have much more loyalty from their employees."

Four generations of family ownership, a base of loyal employees and a nationwide network of committed sales representatives and service centers have enabled Jay R. Smith Mfg. Co. to meet the demanding requirements of wholesalers, engineers, and contractors for 85 years. These attributes and the strength of the Acorn Family of Companies will lead Smith to the continued success of adhering to its mission: "To be the Company of Choice in the Specification Plumbing and Drainage Industry."

The new alignment in 2010 marked a milestone in the history of Smith and 2011 marks 85 years of prosperous business. Jay R. Smith Mfg. Co. is once again reinventing itself and is poised soon enough to celebrate a successful 100 years. ■

How Jay R. Smith Mfg. Co. does it

ASIDE FROM THE OFFICE, the Smith manufacturing facility is made up of receiving, shipping, warehousing, assembly, plating, polishing, enameling, painting, a machine shop and a fabricating facility.

Millions of tons of finished cast iron, stainless steel, brass, nickel and steel products are shipped from the plant each month to a network of representatives, who warehouse these plumbing and drainage products for sale to local markets. Products in the Smith line include closet and lavatory supports, floor and roof drains, sanitary floor sinks, cleanouts and access covers, interceptors, hydrants, trench drains, water hammer arresters, trap primers and backwater valves.

Jay R. Smith Mfg. Co. is also able to create plumbing and drainage products to meet specific customer requirements, which are called Special Quote items. Along with Smith's "special quote" products, some of the specialty product lines available from Smith are:

(1) the Smith/ACO Trench Drain Series (polymer concrete and fiberglass surface drainage systems);

(2) the Enviro-Flo® Trench Drain Series (a polypropylene surface drainage system);

(3) the Ultracept® Oil/Water Separator (separates oil, grease, and other hydrocarbons from wastewater);

(4) the Labor Saver® Fixture Support (a one-piece rigid frame fixture support);

(5) the Guardian Dual Check Hydrant (provide positive non-freeze protection with an integral vacuum breaker and dual check valve);

(6) the Flood-Gate Automatic Backwater Valve (closes automatically when backup is detected in sanitary sewer line);

(7) the Remediator® Grease Treatment System (designed to eradicate suspended fats, oils, and grease at the source) and

(8) Rainwater Harvesting Systems (residential and commercial water preservation for potable and non-potable applications).

Jay R. Smith Mfg. Co. continues to expand its product offerings to meet the needs of today's changing construction demands, as well as expanding interaction methods to meet customer needs. In 2005, the company introduced JRS Products. This product line is designed for light commercial and design-build projects. The product group features roof drains, floor drains, cleanouts, sanitary floor sinks, hydrants, trap primers and interceptors. These products are offered in cast iron, plastic and polypropylene. Between 2007 and today, Smith has introduced rainwater harvesting products and green and cool roof drains.

To support their sales, marketing and engineering efforts, Smith maintains an extensive website to include technical data, submittals, pricing, literature and numerous other tools and resources. There are now more than 150 new BIM 3D family model objects for use by design professionals.

These objects, in concert with Autodesk's Revit® MEP, will allow users to integrate Smith's wide array of products into their virtual 3D project spaces. Through the advent of BIM technology, designers can work in a collaborative environment, making use of 3D models embedded with relevant and reliable design information. The Jay R. Smith Mfg. Co.'s 3D BIM models can be easily accessed at www.jrsmith.com. ■

pe09_pgs_52_59rev_Layout 1 8/23/11 12:05 PM Page 59

1-877- 4 UPC MARK • WWW.IAPMORT.ORG

IAPMO R&T®

Experts in Certifying Hubless Soil Pipe, Fittings, and No-Hub Couplings

There's No Substitute for Experience, and We've Got More Than 20 Years Worth

UPC®

IAPMO R&T certified its first hubless soil pipe two decades ago and has served manufacturers efficiently and reliably every day since. Trust in experience; give your product the mark of trust with IAPMO R&T and the UPC® Mark of Conformity. Canadian certification also available upon request.

Circle 33 on Reader Reply Form on page 86

pe09_pgs_60_61rev_Layout 1 8/23/11 1:22 PM Page 60

Pure Water by Watts
offers a complete line of innovative solutions for the delivery of better-than-bottled water quality.

Residential Drinking Water Systems

Whole House Water Conditioning Systems

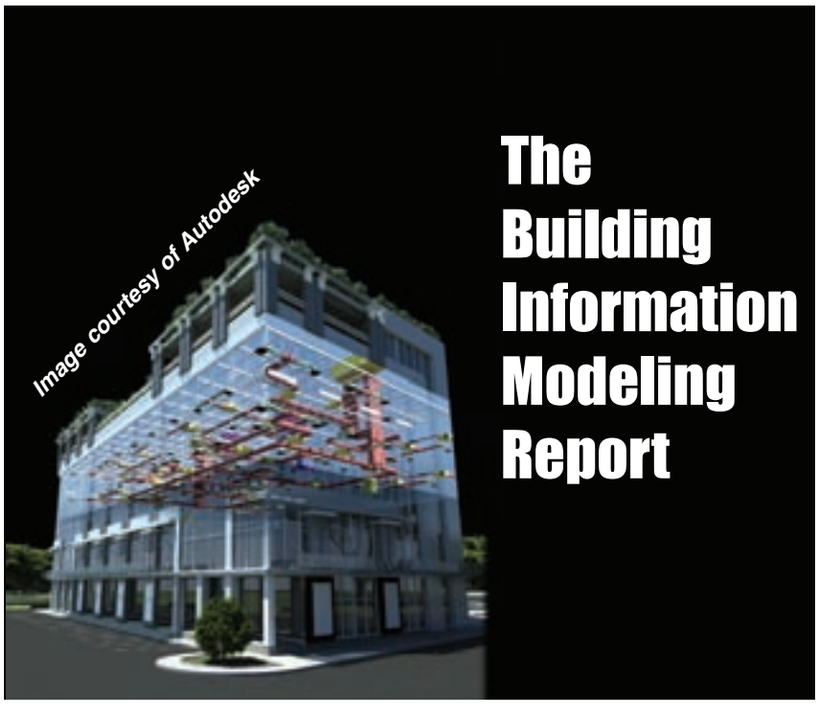
Light Commercial Water Conditioning & RO Systems

Commercial/Industrial Water Conditioning & RO Systems

Commercial Water Softeners

WATTS®
A Watts Water Technologies Company

Circle 34 on Reader Reply Form on page 86



The Building Information Modeling Report

The Design-Build Institute of America addresses use of BIM on design-build projects

WASHINGTON — The Design-Build Institute of America (DBIA) has released the latest addition to the Design-Build Manual of Practice, "BIM and Design-Build Project Delivery." Developed by DBIA's BIM Committee, a group of practitioners representing the full spectrum of design and construction disciplines, the chapter details how design-build teams can make the greatest use of a technology that is transforming the A/E/C industry.

At its core, BIM is a visualization tool, a detailed database and a communication aid to enhance collaboration of the project team. These attributes have particular significance for design-build projects because they augment and support a project delivery method that is already fundamentally collaborative. Because design-build is an integrated approach that delivers design and construction services under one contract with a single point of responsibility, design-build team members, as well as owners, are able to leverage BIM capabilities more completely and throughout the entire design and construction process.

The chapter illustrates how BIM can be used to add value to a project from very beginning. As early as the pre-proposal phase, owners can take advantage of BIM as a cost-effective means of visualizing what they want to build. There are many dimensions and uses of BIM that can further the design-build process, including integral cost comparison, energy analysis, and even 4D scheduling.

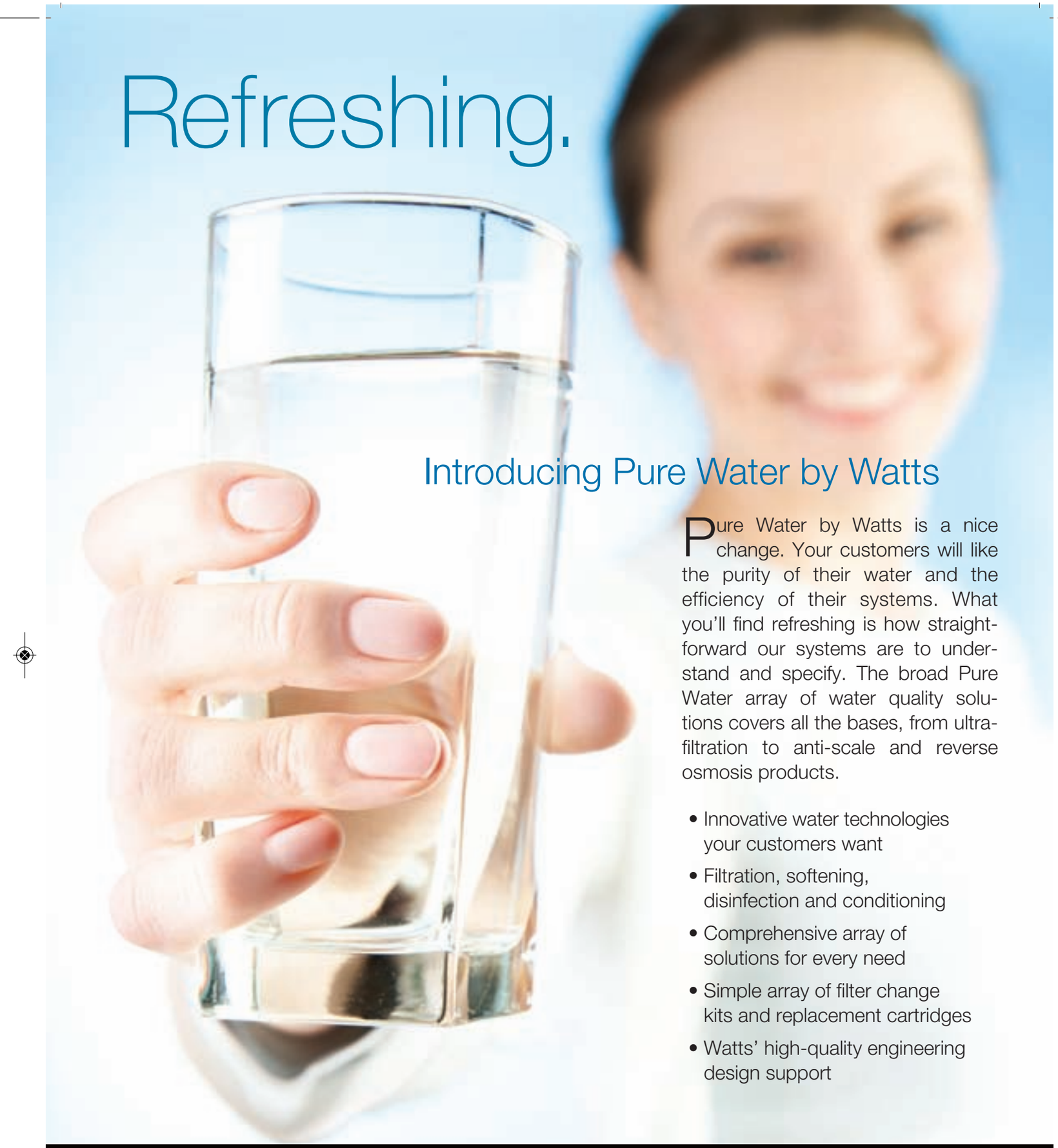
A first step in applying BIM to the virtual design and construction (VDC) of a design-build project is for the team to define the project's BIM objectives and deliverables. In addition to project examples, "BIM and Design-Build Project Delivery" also includes a BIM Checklist and Guide for Design-Build that can be used by both owners and design-build team members as they make virtual design and construction a reality on their next project.

The DBIA Design-Build Manual of Practice (MOP) contains basic definitions, narrative instructions, procedural guidance, sample formats and best practices recommendations as well as risk management guidelines, licensure data and regulatory and legal information. As the only organization that defines, teaches and promotes best practices in design-build, DBIA is committed to keeping the MOP a relevant and up-to-date handbook of design-build project delivery. In keeping with the Institute's goal of furthering widespread implementation of best practices, DBIA provides the MOP free of charge to members.

Since 1993, the Design-Build Institute of America (DBIA) has provided a forum for all participants in the integrated design-build process.

pe09_pgs_60_61rev_Layout 1 8/23/11 1:21 PM Page 35

Refreshing.



Introducing Pure Water by Watts

Pure Water by Watts is a nice change. Your customers will like the purity of their water and the efficiency of their systems. What you'll find refreshing is how straightforward our systems are to understand and specify. The broad Pure Water array of water quality solutions covers all the bases, from ultrafiltration to anti-scale and reverse osmosis products.

- Innovative water technologies your customers want
- Filtration, softening, disinfection and conditioning
- Comprehensive array of solutions for every need
- Simple array of filter change kits and replacement cartridges
- Watts' high-quality engineering design support

Scan this QR code to view our entire Pure Water line

watts.com/purewater

Circle 35 on Reader Reply Form on page 86

WATTS®

A Watts Water Technologies Company

pe09_pgs_62_65rev_Layout 1 8/23/11 1:23 PM Page 62

Product Application

Luxury condos benefit from conversion to CPVC piping from FBC™ Building Solutions

Blending seamlessly with the courthouse's architecture, the three new buildings include one-, two-, and three-bedroom units, as well as penthouse suites, all featuring upscale amenities. Built around the courthouse as the focal point of the complex in a town square setting, the new condominiums are constructed to maintain a sense of belonging.

About 25 miles west of Chicago in DuPage County is the city of Wheaton, an upscale residential community where a century-old architectural gem in the city's downtown area is being magnificently transformed. The DuPage County Courthouse, a historic landmark constructed in 1896, has undergone a dramatic metamorphosis that has transformed the former courthouse into six luxury condominiums. Surrounding the historic building's residences on Courthouse Square are three new, seven-story buildings designed to complement the courthouse's very traditional style. The new buildings house an additional 182 units.

The developer, Focus Development of Northfield, Ill., which specializes in residential properties in the Chicago area, worked diligently to maintain the historic value of the property and to extend its charm across the entire courtyard. Focus Development restored the courthouse's exterior, replacing damaged tiles with custom terra cotta tiles from Italy and recreating the building's original grandeur in the interior common areas.

Blending seamlessly with the courthouse's architecture, the three new buildings include one-, two-, and three-bedroom units, as well as penthouse suites, all featuring upscale amenities. Built around the courthouse as the focal point of the complex in a town square setting, the new condominiums are constructed to maintain a sense of belonging.

"With its rich heritage, we wanted to retain the courthouse as the development's focal point to lend a historic feel to the property," said Wade Giomo, vice president-director of construction for Focus Development. "To accomplish this, the three new structures surrounding the perimeter were constructed as lower-rise buildings so that the courthouse remains the tallest building on the square."

In addition to the historic courthouse, the former State's Attorney Building is another landmark on the property being revitalized. The building offers 13,000 square feet of space, including private offices and a community center that includes a fitness center, an outdoor swimming pool and a community room.

Beyond the nostalgic exterior and common areas, rooms are outfitted with modern luxuries using the most current technologies and design elements. That includes installation of the most advanced plumbing and fire sprinkler systems on the market today from FBC™ Building Solutions.

"Wheaton city officials were flexible in considering FlowGuard Gold® and Corzan® pipe and fittings as a value engineering option," said Giomo. "With the cost of copper being so high these days, it was advantageous to look at these CPVC plumbing systems as an option. We had heard that these piping systems had a good reputation, so we investigated them for the mains and risers."

Focus Development and its engineers met with city inspectors and a team of FBC Building Solutions technical representatives to examine the products, learn proper installation and anchoring methods, and verify temperature and pressure limitations.

"It was an exhaustive review process to make sure that FlowGuard Gold and Corzan pipe were the best products for the job," said Giomo. "Throughout the

Continued on page 64

pe09_pgs_62_65rev_Layout 1 8/23/11 1:23 PM Page 63

NORITZ® COMMERCIAL

COMMERCIAL HOT WATER

The New Way

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

- No Storage - no cycling, no heat loss
- Perfect load tracking for ultimate efficiency, up to 545:1 turn down ratio
- Redundancy for unbeatable reliability
- Versatile installation to fit any project
- Units ranging from 199,000 Btuh - 380,000 Btuh, up to 13.2 GPM
- Systems ranging from 199,000 Btuh - 9.1 million Btuh, up to 316 GPM

Circle 36 on Reader Reply Form on page 86

(866) 986 - 6748

www.noritz.com/commercial

pe09_pgs_62_65rev_Layout 1 8/23/11 1:23 PM Page 64

Product Application

Continued from page 62

process, the city inspectors were very open to hearing new ideas, and the FlowGuard Gold/Corzan team did a good job of thoroughly explaining how to best use their piping products. They spent time with our plumbers to make sure they understood everything they needed to know about the product and even brought tools to the site for the plumbers to try."

In addition to FlowGuard Gold and Corzan piping, BlazeMaster fire sprinkler systems, which are part of the same family of CPVC products from FBC Building Solutions, were installed in the Wheaton buildings. BlazeMaster sprinkler systems offer many of the same superior performance attributes as FlowGuard Gold and

Besides the historic DuPage County Courthouse, the former State's Attorney Building is getting a makeover as residential condos, prime office space and a community center, all with up-to-date plumbing and sprinkler systems incorporating FlowGuard Gold® and Corzan® CPVC pipe and fittings.

Corzan piping when it comes to reliability and bottom line value. They offer a low-maintenance system that's immune to corrosion, lightweight and easy to install, provides exceptional flow characteristics and, most importantly for the developer, provides significant savings in both material costs and labor. They have more listings and approvals than any other non-metallic fire sprinkler systems and are the only fully pressure rated fire sprinkler system in the world (per PPI). These are just a few of the reasons why BlazeMaster pipe and fittings are the world's most frequently specified non-metallic fire sprinkler systems.

"We've been using the BlazeMaster sprinkler systems in our projects for years," said Giomo. "And we've been very happy with their performance. They are highly cost effective, which is a real bonus."

George Palermo of Professional Plumbing, a large plumbing and cooling company located outside of Chicago, was on the scene for the Wheaton Courthouse plumbing job.

"We had used FlowGuard Gold pipe and fittings before, but since most of our work is within the metro area, and because the City of Chicago still did not recognize CPVC piping in its code, we did not have much chance to gain experience using the product, especially on larger projects," said Palermo. "I can say, however, that I've used FlowGuard Gold CPVC in single-family and townhouse developments outside Chicago with some very good results."

CPVC was not the original specified material for the project. According to Palermo, the project actually began with copper pipe being used for larger diameter piping. As a result, the development team was not initially comfortable moving forward with an all-CPVC system.

"In the first building, we used copper for the main horizontal distribution piping in the lower level and then transitioned to FlowGuard Gold pipe for the risers," said Giomo. "We already had copper roughed in for that building while we were going through the review process and meeting with the city. But we definitely recognized major material cost savings when we switched to the FlowGuard Gold products."

"The copper water mains were on the lower-level floors," said Palermo. "We adapted the CPVC for use on the upper-level floors, using copper for the mains and FlowGuard Gold piping for the risers and partition piping. We'll be doing the same for all the floors in the remaining buildings."

Palermo felt confident that the decision to convert to FlowGuard Gold and Corzan CPVC pipe was the right one. "From our perspective, one of the additional reasons to use these products is because the installation process is much safer than installing metal piping," he said. "Due to the nature of the installation, there are no torches used, no open flames and, therefore, no need to carry fire hoses or extinguishers. The solvent cement joining system is a much safer option."

Beyond safety, Palermo and his team discovered a number of other advantages in using the FlowGuard Gold/Corzan system instead of metal. "We feel the joining system is more reliable than soldering the joints," he said. "This equates to fewer faulty connections and incidences of leaks. It's also easier for the crew to use: They have fewer tools to carry around on the job site, and it saves quite a bit of time on the job.

"In addition, FlowGuard Gold and Corzan pipe are not affected by corrosion, pitting or scaling – a definite benefit over metal piping. Water hammer and condensation are not an issue because of the pipe's natural flexibility and insulating properties. This piping just doesn't react the same way as copper pipe."

Now that he has had the opportunity to experience the benefits of CPVC plumbing and fire sprinkler systems firsthand, Giomo indicates he would definitely like to use FlowGuard Gold/Corzan and BlazeMaster systems again in future projects. "Not only are we going to use these systems in all the remaining Wheaton buildings, but we'd like to have the option to use them on future projects as well," said Giomo.

"We were very happy to be able to use FlowGuard Gold and Corzan piping for this project," agreed Palermo. "Personally, I'd like to see it used universally in our area. I'm willing to do whatever it takes to push that effort along." ■

pe09_pgs_62_65rev_Layout 1 8/23/11 1:23 PM Page 65

SPEAKMAN®

the KEY for every application


EYEWASHES


ELECTRONIC FAUCETS


FLUSH VALVES


SHOWERHEADS


SPACESAVER EYEWASH


SHOWER VALVE


MECHANICAL FAUCETS

EDUCATION

- Public Restroom
- Science Lab
- Locker Room
- Janitorial Closet
- Boiler Room

HEALTHCARE

- Public Restroom
- Chemistry Laboratory
- Patient Room
- Nurses Station
- Janitorial Closet
- Boiler Room

HOSPITALITY

- Public Restroom
- Guest Bathroom
- Kitchen
- Janitorial Closet
- Boiler Room

SPEAKMAN®

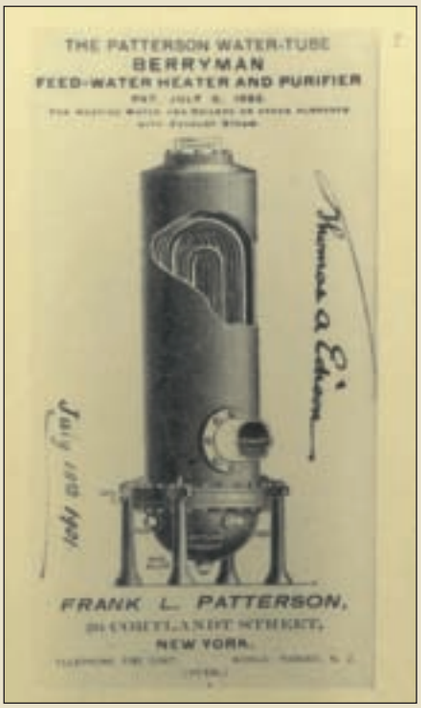
Absolutely the best.

WWW.SPEAKMANCOMPANY.COM

Circle 37 on Reader Reply Form on page 86

pe09_pgs_66_69rev_Layout 1 8/24/11 7:17 AM Page 66

Harsco Industrial Patterson-Kelley Offers Fully Engineered Fabricated Systems



Patterson-Kelley joined Harsco Corporation in 1974. One of the company's first products was a feed water heater with a "U" tube bundle, pictured left.

Harsco Industrial Patterson-Kelley traces its industrial heritage to Benjamin F. Kelley & Company, founded in 1880. One of the company's first products was a feed water heater with a "U" tube bundle. In 1919, the company moved to its current location in East Stroudsburg, Pa. Since then, the company continued to innovate and develop new products for the water heater industry and expanded into adjacent markets, such as cement linings for storage tanks, chemical process equipment and commercial boilers. In the 1960s, Patterson-Kelley revolutionized the water heating market by introducing the first completely "packaged" water heater. These water heaters included operating controls, insulation and outer coverings bundled into a fully assembled package. Today, the company has taken this bundling to a new level by offering fully engineered and assembled heating plants called fabricated systems.

Patterson-Kelley joined Harsco Corporation in 1974. In the late 1980s, business expanded into the commercial boiler market when the P K THERMIFIC® gas fired boiler was introduced. These modular boilers provided heat for schools, dormitories, nursing home, and apartments. As the market evolved to higher efficiency equipment, Patterson-Kelley introduced a new technology, the first cast aluminum heat engine as part of the MACH® condensing boiler. Today, this ultra high efficiency condensing boiler continues to be one of the major growth platforms for the company.

Recently, *Plumbing Engineer* caught up with Stephanie Murphy, marketing manager for Harsco Industrial Patterson-Kelley. The following is an excerpt of that Q&A:

How did you get involved in the industry?

Murphy: Harsco Industrial Patterson-Kelley has been involved in the water heater industry from its inception. Through acquisition, we entered the gas-fired commercial boiler market in 1987.

How can contractors benefit from installing your product (through quality, innovation, on-time shipping, customer service and satisfaction)?

Murphy: We have some of the best delivery times in the industry, with standard lead times of 10 business days or less. Our boilers have a small footprint with high efficiency, which makes our products perfect for retrofit as well as for new construction. The ability to cascade boilers with lead/lag and boiler start rotation allows customized solutions for your heating needs. There is easy integration with building management systems through our unique ENVI® control platform.

Any news/new products at Harsco?

Murphy: We recently introduced the MACH® C4000 condensing boiler, a 4 million Btu/h boiler that fits through the door. Coming soon — dual fuel (natural gas/propane) condensing boilers from 750,000 to 2 million Btu/h.

How do you sell efficiency, especially in this economy? (More upfront costs compared to ROI).

Murphy: Companies have been riding the coat tails of the current market trend for greener, more efficient, more environmentally friendly products. Higher efficiency products, like Harsco's MACH® condensing boilers, provide customers with enough fuel savings in a short period of time (3–5 years) to justify the higher investment cost, especially when that investment cost is offset by financial

Continued on page 68

pe09_pgs_66_69rev_Layout 1 8/23/11 1:31 PM Page 67

"I trust Taco design software."

– David Folster, C.E.T., Lead Designer
Williams Engineering Canada, Inc.

LoadMatch® and LEED Silver
The city of Edmonton has a new LEED Silver-certified building (Canadian GBC standard), The Lois Hole Library. And it comes with a Taco LoadMatch® single-pipe system to heat and cool the two and half story building.

System design made easy.
David Folster of Williams Engineering Canada Inc. used the Taco LoadMatch design software, Hydronic System Solutions® (HSS) for the project. "Everything told us it was going to work," says Folster, who loves the design program. "I trust HSS," he adds. "It's one of my main design tools today."

The HVAC System
The library main mechanical room consists of two Raypak gas-fired, condensing Hi Delta boilers with Taco KV/KS and 1900 pumps, Multi-Purpose Valves, Suction Diffusers and a 4900 Series Air/Dirt Separator. The fan room is in the attic space.

Consistent comfort
Controlling temperature and humidity in the library has never been a problem in a city that experiences plenty of -10 to -15°F days and nights in winter. There have been no issues with the LoadMatch circulators, and change-outs to the filters in the fan coil units are handled routinely. "I like LoadMatch," says David Folster, "with its one pipe sized to carry the full flow throughout the building. For 2-½" pipe and above, LoadMatch makes perfect sense."

Learn more
Take a tip from David. Get to know Taco LoadMatch® and our Hydronic System Solutions® software. You'll save time, materials, and energy. There is lots more information on our web site: www.taco-hvac.com

Taco®
systems made easy®

www.taco-hvac.com

Circle 38 on Reader Reply Form on page 86

pe09_pgs_66_69rev_Layout 1 8/23/11 1:31 PM Page 68

Harsco Q&A

Continued from page 66

The company recently introduced the MACH® C4000 condensing boiler, a 4 million Btu/h boiler that fits through the door.

incentives, such as rebates from the federal government and utility companies. With low Nox as a standard feature, Harsco also helps its customers reduce their carbon footprint, another hot topic in Washington.

Describe the advantages (or disadvantages) of different types of boilers. (condensing vs. non-condensing, for example)

Murphy: A condensing boiler requires a higher up-front investment, but it is proven to pay dividends in fuel cost savings. With the average payback for high efficiency equipment at 3–5 years, those who can afford the additional capital investment usually do.

Traditional boilers have also progressed from where they stood 15–20 years ago. Smaller footprints, full-modulation capabilities and advanced control logic have made these traditional boilers a viable, less costly solution for those who have strict budget constraints.

Describe the core products and services offered at Harsco.

Murphy: Harsco offers conventional and high efficiency condensing boilers for the hydronic heating market and traditional copper-finned tube and high efficiency condensing indirect water heaters for domestic hot water production. We also offer expert solutions in the form of fabricated systems, leveraging decades of industry knowledge and combining that knowledge with quality products to deliver fully packaged systems to our customer's doorstep.

How has Harsco faced the struggling economy?

Murphy: Harsco Industrial Patterson-Kelley has weathered the storm during the economic recession. With new construction starts declining, there is more focus on the retrofit and replacement market. Market trends for higher efficiency and more environmentally friendly equipment has also driven replacement sales prior to the end of a boiler's useful life. We continue to see growth in areas where there is emphasis on quality products that provide customers value in the form of efficiency cost savings and return on investment.

Since the residential (hydronics) market is down, on which markets is Harsco concentrating?

Murphy: Harsco participates exclusively in commercial, industrial and institutional markets. The institutional market has remained steady, while the residential, commercial and industrial markets have seen a decline during the economic recession. Our boilers and water heaters can be found in healthcare facilities, commercial buildings, apartments, schools and universities, as well as in government facilities such as military bases.

How do you think Harsco helps end users in struggling times? (rebates, training, education, reduced prices, etc.)

Murphy: Our high efficiency MACH® condensing boilers qualify for utility company or local, state and federal government rebates and incentives. We also offer advanced training and education programs for strategic customers.

Do you deal directly with wholesalers? If so, describe the importance of the wholesaler manufacturer relationship.

Murphy: Our products and services are sold exclusively through authorized representatives. These representatives are not only our customers but also our partners in business. It is important for any manufacturer to understand its representatives' needs, whether they be 24/7 customer service and technical service support, customized sales tools, detailed market information or promotional support.

Harsco's high efficiency MACH® condensing boilers qualify for utility company or local, state and federal government rebates and incentives.

What is Harsco's presence globally?

Murphy: Harsco Industrial Patterson-Kelley, a division of Harsco Corporation, serves the North American market, mainly the U.S. and Canada. Harsco Corporation serves infrastructure development in global markets, such as North America, South America, Europe, Asia, Africa and the Middle East. ■

pe09_pgs_66_69rev_Layout 1 8/23/11 1:31 PM Page 69

We Mean Business: *Yours*

We make faucets like you would:

- Attractive
- Reliable
- Profitable

Gerber faucets offer one important feature you won't find with the competition:
An exclusive trade partner who cares about your business.

Join us at theplumbersbrand.com

Let Gerber drive business to you...

EPA WaterSense PARTNER

www.gerberonline.com

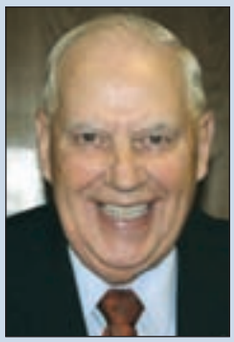
GERBER

Circle 39 on Reader Reply Form on page 86

pe09_pgs_70_77rev_Layout 1 8/23/11 1:33 PM Page 70

PVF Market Report

PVF market condition and activity: third quarter 2011



By Gary Cartwright
Piping & Equipment Inc.

Stainless Steel Pipe

Pricing: Stainless Steel pipe pricing is forecast to increase 1% – 2-1/2% for the third quarter. Nickel prices are moving up quickly along with the overall stock market. One manufacturer comments, "It will calm down if quarter 2 earnings reports begin to fall flat." Increases are due to raw material costs, higher nickel and revised surcharge formulas.

Lead Times: Delivery lead times remain at 8 – 12 weeks, and fill rates are 20% – 30%. Non-standard material delivery is forecast for 16 – 20 weeks.

Comments: Buyers have been holding off on inventory purchases with nickel prices dropping during the 2nd quarter. Commodity prices are flat. Large project orders are being placed at negotiated and competitive prices due to relatively slowing demand.

It remains to be seen whether other mills follow Allegheny Ludlum's new surcharge format. This new alloy surcharge formula recently announced by Allegheny ATI has the potential to change buying patterns and smooth out often-volatile pricing swings. It may take a quarter to rationalize in the market. Allegheny is basing surcharges on the following: as presented by Terry L. Dunlap, president, ATI Allegheny Ludlum on June 28, 2011 and effective with shipments beginning September 4, 2011:

SS Surcharge per LB	July 2010	Aug 2010	Sep 2010	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	April 2011	May 2011	Jun 2011	Jul 2011	Aug 2011
304/L	1.41	1.25	1.23	1.33	1.42	1.48	1.44	1.52	1.64	1.79	1.71	1.67	1.54	1.43
316/L	1.89	1.65	1.62	1.77	1.78	1.87	1.91	2.00	2.15	2.34	2.23	2.19	2.04	1.89

The LME nickel average price calculated on the daily official cast settlement price from the 21st day of month #1 through the 20th day of month #2 will determine the nickel component of the surcharge for shipments in month #3.

For raw materials where *Platt's Metals Week* and *Ryan's Notes* are used as references to calculate this surcharge, the average of the four most recent weekly prices, published on or before the 23rd day of every month, will be the basis for the surcharge for shipments in the following monthly period.

The iron component of the surcharge for shipments in each monthly period will be based on the previous month's price as published in the *American Metal Market*.

The natural gas component of the surcharge for shipments in each monthly period will be based on the previous month's final settlement price for NYMEX Henry Hub Natural Gas.

Stainless Steel Weld Fittings, 150 and Hi-Pressure Fittings

Pricing: (Weld Fitting 150#) (SS Pressure Fittings) One manufacturer indicates no change for the third quarter now that pipe prices should be down or more stable; however, another manufacturer indicates a 1% – 2 1/2% increase due to unstable raw materials and limited supplies in the market. The same manufacturer went on to say that if demand slows and global suppliers deliver on back order prices would in fact drop on domestic fittings.

Lead Times: Fill rates are running 60% to 80%. Lead times are forecast 4 – 6 weeks for commodity domestic material and 16 – 20 weeks for import material not in stock.

Comments: One domestic manufacturer indicates that there may be a drop in foreign competition later this year, due to the amount of work overseas. Business here is steady, but nothing concrete is on the horizon. Expectations are still high for the balance of this year. Many end users here need to do work; however, they continue to put it off due to the fluctuation in pipe prices. Nickel and commodity prices have dipped unexpectedly, but are on the rise again.

Alan Lipp of Merit Brass shared the following comments: "Asian PVF producers are being challenged by a whole host of increasing cost pressures, including labor shortages/wage increases, particularly in China, where the country's competitive advantages in labor-intensive manufacturers continues to erode. This is a significant factor in what appears to be relatively firm pricing on the full suite of commodity stainless steel PVF products, despite the recent downward trend of nickel prices. In addition, China's energy conservation focused Green Project is being aggressively enforced, increasing production costs and lead times. The cancellation of the tax drawback provision for sales of stainless steel scrap in China has essentially increased scrap acquisition costs by 12% and manufacturers there inform us that they are just now seeing only slight relief from the high (pre-tax) levels that had been persistently rising since December. Whether actual producer costs of scrap come more in line with levels that are being anecdotally published remains to be seen. The combination of enhanced, general cost pressures, reluctance

Continued on page 74

pe09_pgs_70_77rev_Layout 1 8/24/11 10:15 AM Page 71

GOULDS PUMPS

Superior efficiency rules the water.

Introducing the Goulds

e-SV™ Series:

energy efficient, economical and easy-to-install stainless steel multi-stage pumps.

Powerful, intelligent and constantly in motion, not just adapting to their surroundings, but dominating them. Like sharks, e-SV pumps are tough, efficient and built to last. Thanks to a unique combination of new hydraulic design and higher efficiency motor, the e-SV delivers lower overall life-cycle costs and superior efficiency compared to most pumps available today.

- Optimized hydraulic design results in superior boosting performance, efficiency and NPSHr levels.
- All stainless-steel construction permits NSF certification.
- Expanded line of pump sizes for wide range of applications.
- Patented i-ALERT™ monitor continuously measures vibration to support optimum performance. Available on pumps 10HP and above.
- New design eliminates need to remove motor, reducing repair time by up to 50 percent.

Now there's more than one way to rule the water.

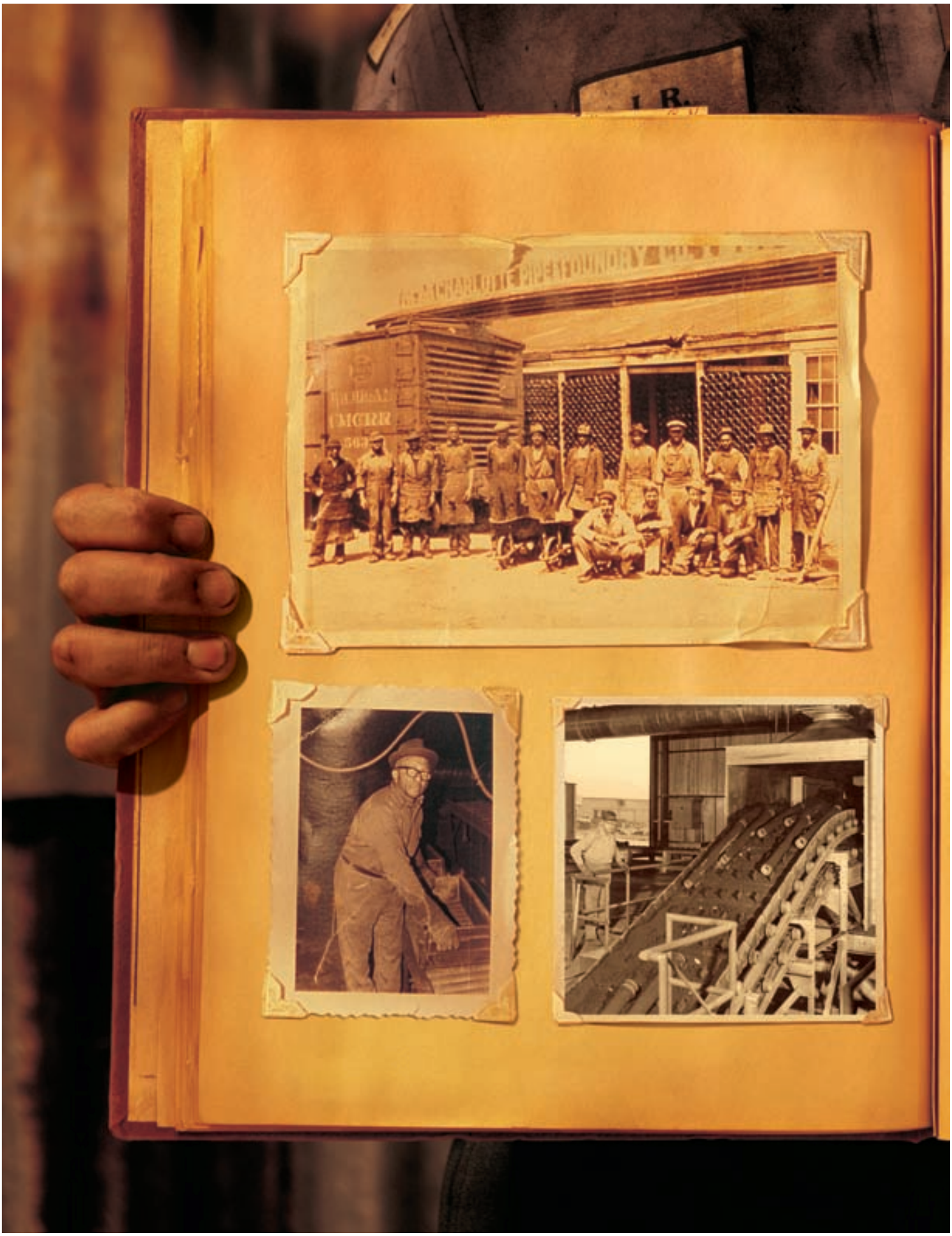
Find out more at completewatersystems.com

ITT | Goulds Pumps

ITT

Circle 40 on Reader Reply Form on page 86

pe09_pgs_70_77rev_Layout 1 8/23/11 1:34 PM Page 72



pe09_pgs_70_77rev_Layout 1 8/23/11 1:34 PM Page 73

Circle 41 on Reader Reply Form on page 86

pe09_pgs_70_77rev_Layout 1 8/23/11 1:34 PM Page 74

PVF Market Report

Continued from page 70

(or inability) to maintain traditional inventory levels of raw materials and genuine upticks in real demand are adversely affecting service levels "throughout the global channel." The current supply situation of stainless steel ANSI flanges is a prime example of this complex challenge.

Stainless Steel Flanges

Pricing: ➡ Manufacturers indicate no price change in the third quarter following an increase of approximately 10% in the second quarter.

Lead Times: Fill rates are forecast for 20% – 30% with lead times of 6 – 8 weeks domestic and 8 –12 weeks foreign. Specialty flanges are out 8 – 16 weeks. One manufacturer comments that they have less production capacity due to more project orders. Still seeing shortage in flanges due to some larger suppliers missing deliveries.

Comments: Stainless and alloy flange inventories were depleted much into the first quarter of 2011. Stock replenishments were made in the second quarter, coupled with more project orders for international projects, according to one manufacturer. Although, it appears this does not reflect the overall U.S. economy in general, as unemployment is still high and corporate budgets remain tight in many sectors of the PVF market.

One manufacturer also comments that deliveries have become critical due to fast turnaround orders. Nickel has decreased, resulting in cautious purchasing activity, and projects are being forced overseas. Another manufacturer comments that the most volatile issue is maintaining good fill rates within an uncertain demand environment coupled with weak shipping performance levels from several manufacturers and suppliers. There is also a general aversion to risk throughout the channel.

Carbon Steel Pipe - Seamless, ERW and Continuous Weld

Pricing: ➡ Welded and seamless pipe is not forecast to change during the third quarter of 2011.

Lead Times: Fill rates remain at 75% – 90%, with lead times of 8 – 12 weeks.

Comments: There is growing concern in the carbon steel pipe market over the downturn in the overall economy. Consumer confidence is slipping with falling gas prices acting to stabilize consumers' assessments somewhat.

Carbon Steel Weld Fittings and Flanges

Pricing: ➡ Manufacturers indicate pricing will remain unchanged through the third quarter. Frequent checking is advised through the third quarter, due to the instability in the world market. Demand and stable costs of raw materials is keeping pricing stable. Prices have risen somewhat for raw forgings; however, the increase has not been significant to precipitate an increase at this time.

Lead Times: Fill rates remain at 90% – 100% for fittings and flanges. Deliveries for commodity material not in stock is forecast for 3 – 4 weeks. Non-stock specials are forecast for 6 –8 weeks.

Comments: Stephen Letko of Weldbend shared the following comments: "The 2011 market is expected to see demands similar to that of 2010. Nearly 90% of the major construction projects will be funded in some form either by local, state or federal funding or a combination of all. There is concern that demand will falter after August due to the erosion of confidence in the economy. Large privately funded projects comprise about 10% of the 2011 construction market, concentrated mainly in the energy sectors, data center projects and rental property. Financing of large privately funded projects has been hindered due to the difficulty in securing financing.

Concern as to the future of the markets for the fossil fuel power industry, nuclear power, oil and gas shale projects and deep water drilling have heightened due to the enormous set of EPA regulations that is about to be released.

The most volatile issue facing our industry is the instability in the world arena, particularly in the Mid-East and the effect on the cost of energy (oil). Demand from the energy related market continues to be the driving force for the PVF industry. The continued threat of pending EPA regulations, political posturing on a domestic energy policy (what policy?) plus the increasing concern over local, state and federal debt are all issues that affect the volatility of the PVF market.

The need for energy will increase the need for developing nuclear, clean coal, gas turbine power plants along with shale oil and gas field development will continue to be the driving forces during the remainder of 2011 and 2012."

Forged Steel Fittings

Pricing: ➡ Forged steel fittings are forecast to remain stable through the third quarter following a 10% increase during the second quarter due to raw material costs.

Lead Times: Commodity material fill rates are forecast at 80% – 90%, with lead times for commodity material not in stock running 2 – 4 weeks.

Comments: Manufacturers have accommodated a higher demand associated with a somewhat robust energy demand. The increased production has increased fill rates and shortened lead times. Price pressure remains on "special bar quality steel" used to produce forged steel fittings and unions. The pressure is a result of increased demand from the automotive industry. A raw material increase is forecast for August but will not translate into a forged steel increase.

The energy business, particularly the oil patch segment, remains robust with current levels forecast through the end of the year. The rig count continues to increase with a total of 1,905 during the week ending July 15. Oil exploration continues to dominate the rig count; 1,013 versus 892 for natural gas. Natural gas prices have remained low for the two years due to record production overwhelming demand. Continued high oil prices, in contrast to depressed natural gas prices, facilitate the rig count moving towards oil. The Eagle Ford and Bakken Shale plays continue to gain strength. Bakken has slowed in recent months, with wet weather and flooding preventing activity. These areas will continue to grow with increased end user activity accompanied by increased distributor locations. The industrial business continues to lag behind energy. We have viewed a slight increase; yet too early to determine staying power.

One manufacturer comments that we continue to view the government's fiscal policies and regulations as factors attributing towards the sluggish economy. The current administration has yet to adopt a comprehensive energy policy with uncertainty rampant industry-wide. The indus-

Continued on page 76

pe09_pgs_70_77rev_Layout 1 8/23/11 1:34 PM Page 75

Her Safety Is your Responsibility!

U.S. Patent #5,055,334
RE 34,832 other
patents pending

•14,700 fires per year* in non-adult schools

- *6,300 structural school fires per year **
- *The leading area of fire origin of structural school fires is the lavatory*
- *100 injuries due to school fires**
- *Plastics ranked second as materials first ignited in school structural fires*

U.S. Fire Administration Report on School Fires, August 2007, Vol 8, Issue 1 findings.
*Average per year

America's Disabled Children Require Safety!

Why would your specs settle for less?

At no additional cost, Handy-Shield MAXX™ is the Superior solution when compared to some presently specified competitors. Plumberex rigorously tests its soft insulator material for safety and durability including ASTM E 84 flame and smoke testing. With Class A Material, you can specify with confidence the responsible ADA Insulation solution for You and Your Clients.

Important Standard Update!

ASTM D-635 Flame Spread Test is limited to light-transmitting plastics only and is not applicable for plastic insulation and pipe covering materials that are used or installed under the IBC (International Building Code).

Laws, Codes & Standards Compliance

- ADA 4.19.4, ICC/ANSI A117.1, ADAAG 606.5
- International Building Code (IBC) Chapter 8
- General Services Administration (GSA) P-100
- 2009 US Army Corps of Engineers/Military Facilities Specification (ASTM E84)
- IAPMO PS94 2008 Sec. 3.5 ASTM E84 25/450 Testing

Made in U.S.A.

For more information on Specification Solutions, Government Reports, PhD. Engineering Reports and Product Performance Videos

www.plumberex.com/whyastme84.htm

PLUMBEREX SPECIALTY PRODUCTS INC.

Engineering Smart Solutions

(800) 475-8629

New! Soft ADA Under-Lav Protectors

HANDY-SHIELD MAXX™

Maximizes ADA & IBC Standards!

Circle 42 on Reader Reply Form on page 86

© 2010 Plumberex Specialty Products, Inc.

pe09_pgs_70_77rev_Layout 1 8/23/11 1:34 PM Page 76

PVF Market Report

Continued from page 74

try has two issues pending which could reduce energy exploration: West Texas Sand Lizard and hydraulic fracturing under legislative pressure. If the Sand Lizard is placed on the endangered species list, West Texas oil and gas production will drastically be reduced. Hydraulic fracturing is being questioned by many states, potentially leading to reduced production.

Stainless Steel Gate, Globe, and Check Valves

Pricing: ➡ Pricing for stainless steel gate, globe and check valves is not forecast to change thru the third quarter, following a 2% – 7% increase in the second quarter.

Lead Times: Fill rates for commodity valves is running at 75% – 85%. Lead times for commodity valves not in stock are forecast at 6 – 10 weeks and non-stock specials with lead times of 16 –20 weeks.

Comments: There is an increase in market spending in the industrial sector while the commercial sector remains slow.

Bronze and Iron Gate, Globe, and Check Valves

Pricing: ➡ Bronze and iron valves are not forecast to change during the third quarter. This follows second quarter increases of 5% – 7 1/2%. However, raw material costs of bronze ingot have increased greatly and are expected to continue. More price increases will probably follow by year-end.

Lead Times: Fill rates for bronze and iron valves continue at 70% – 80%. Lead times for bronze and iron valves are forecast for 4 – 8 weeks.

Comments: Overall demand for bronze and iron valves has been steadily increasing. The pulp and paper business is stable, chemical plant opportunities increasing and mechanical construction remains at lower levels according to manufacturers. One manufacturer indicates their iron valve demand is up more than 40% in 2011 over 2010.

Cast Steel Gate, Globe, and Check Valves

Pricing: ➡ Cast steel valve manufacturers indicate no change forecast for the third quarter. This follows 5% – 10% increases in the second quarter 2011, due to raw material costs.

Lead Times: Fill rates running at 70% – 80% with forecast lead times of 4 – 8 weeks for commodity valves. Non-commodity valves are shipping in 12 – 16 weeks.

Comments: Raw material costs have increased in the past six months, but have now stabilized.

Forged Steel Gate, Globe, and Check Valves

Pricing: ➡ No price change expected for forged steel valves over the third quarter.

Lead Times: Lead times continue to run 6 – 8 weeks for forged steel valves with fill rates of 50% – 60% for commodity valves. Non-stock specials are forecast with lead times of 12 – 16 weeks.

Comments: Molybdenum has remained fairly steady since March. Nickel prices dropped significantly from April to May and have since been steady. Chromium and carbon steel prices were steady during the second quarter. The main issue for forged steel valve manufacturers is the price pressure from foreign manufacturers. Less domestic manufacturing is a continuing theme in the industry.

Quarter Turn Valves — Ball and Wafer

Pricing: ➡ Quarter turn valves are expected to remain steady for the third quarter. There is concern over an increase in surcharges mainly impacting stainless steel.

Lead Times: Fill rates for quarter turn valves are approximately 60% – 70% with lead times running 4 – 6 weeks. Non-commodity specials are forecast for delivery in 12 – 16 weeks.

Comments: Manufacturers comment that key industries like chemical and petrochemicals are poised for increases, but economic conditions (deficit, high unemployment, etc.) may set the economy back and delay projects. The biggest change in the valve industry is supply. Manufacturers depend more on outside sources (foundries in other countries for example) to keep products moving through factories. Supplies of castings must meet commitments, and they are often at overcapacity. ■

Printed by permission 2011 Piping & Equipment, Inc. Unauthorized reproduction of any portion of this document is forbidden without the written permission of P&E. This report is published as a service to the PVF industry indicating the direction of prices, lead times and market conditions reported by various domestic and import manufacturers as they believe the direction the market is heading each quarter.

Industry Movers

Wilo welcomes senior vice president

MELROSE PARK, ILL. — Wilo SE announced that **Jeff Bredeson** has joined the Wilo team as senior vice president sales region Americas. Bredeson will oversee the growth and development of the North, Central and South American subsidiaries.

Speakman Company appoints COO

NEW CASTLE, DEL. — **Robert "Bob" Knoll** has been appointed the first chief operating officer of Speakman Company in its143-year history. Knoll joins Speakman from Easthill/East Wood Company, where he was president and COO for the Easthill Group Inc. He was responsible for domestic and international third-party fulfillment and logistics including the inbound/outbound call center, customer service, inventory planning, sourcing and warehousing and distribution services to small and mid-size companies in the greater Philadelphia area.

Performance starts with your body.

Keep the water in the sink *and off the deck with a retrofittable restricted-swing spout option.*

Save time *with fewer parts and pre-assembled components for a 1-person installation in just a matter of minutes.*

Unsurpassed interchangeability *and compatible with the Chicago Faucets handles, spouts, outlets, and cartridges you already use.*

The widest range of applications *with a fully-threaded valve body that adjusts to almost any deck thickness.*

Meet the latest codes & standards *with ECAST® faucets for lead-reduction laws and models for CALGreen requirements.*

Built to last *with a solid, one-piece, cast brass body designed, manufactured, and assembled in the USA for maximum strength and stability.*

ECAST CALGreen BUY AMERICAN ACT COMPLIANT

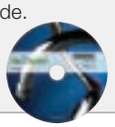
CHICAGO FAUCETS 1901 110 YEARS 2011

Introducing our new concealed widespread faucet with a one-piece body.

Chicago Faucets concealed widespread faucets are better than ever before and more installer friendly than just about any other commercial faucet on the market. One-piece bodies, pre-assembled parts, and individual testing help deliver durable performance and an easier installation.

Plus, with a lifetime warranty on the body and interchangeable handles, spouts, outlets, and cartridges – you get a faucet that not only lasts, but one that's easy to upgrade.

For a free Up2Speed™ CD, which includes comprehensive information on all of our faucets, call 800/323-5060 or circle the number below on the reader service card.



Use your smartphone to scan this code for more information on our new concealed widespread faucets.

CHICAGO FAUCETS®

a Geberit company

www.chicagofaucets.com

800/323-5060

Circle 43 on Reader Reply Form on page 86

pe09_pgs_78_81rev_Layout 1 8/23/11 2:04 PM Page 78

Product News

Plumbing Engineer's Editor's Choice

Copper-Fin II commercial boiler

Available in models up to 2,070,000 Btu/hr, the Copper-Fin II line is known throughout the industry for its high thermal efficiency, unique gasketless heat exchanger, proportional firing, small footprint and multiple venting options. Today, the proven performance of this line has been further enhanced with design updates and a new operating control, taking Copper-Fin II to a new level of innovation. Among the major enhancements to the Copper-Fin II family of products, all models are now equipped with the exclusive SMART SYSTEM™ control. Originally developed and introduced in 2005, SMART SYSTEM is the industry's most advanced integrated operating control designed to simplify installation, system sequencing, set-up and troubleshooting. **Lochinvar.**

Circle 100 on Reader Reply Form on page 86

The HOLE Solution

Finally — a fast, safe and cost-effective way to plug holes! The HOLE Solution is the only hole cover with a watertight seal that eliminates water

leakage through open holes during construction, meets OSHA requirements and stays securely in place. Its unique low profile and fluorescent color prevent costly trip hazards. No tools are needed for quick, easy installation that saves labor costs. 12 sizes range from 2-9 inches in diameter. Recyclable, reusable, made in the USA. **Buildings & Matters, LLC.**

Circle 101 on Reader Reply Form on page 86

Commercial dual flush toilets

The Selectronic® dual flush toilet valve releases a light flush, or 1.1 gallons per flush (gpf), when motion is detected for less than 60 seconds. A standard 1.6 gpf volume is used when motion is detected for 60 seconds or longer. The exclusive Selectronic

proximity system is the hands-free commercial plumbing system that delivers on the promise, not the hassle, of touchless technology. The Selectronic line was developed to simplify specification and installation, while reducing maintenance time. **American Standard®.**

Circle 102 on Reader Reply Form on page 86

Multiple jet control valve

Multiple Jet Control (MJC) valve is used in sprinkler or water spray systems. The new MJC, which is a unidirectional inline valve, is installed in the system piping and is used to simultaneously operate a small number of sprinklers or spray nozzles. New MJC includes either a 3 mm or 5 mm glass bulb, in various temperature ratings. The glass bulb is preloaded at the factory to hold a sealing spring assembly against the valve's inlet seat, providing a water and air tight seal. When the glass bulb breaks, the sealing mechanism is released allowing water to flow through the MJC to the downstream piping. **Viking Group, Inc.**

Circle 103 on Reader Reply Form on page 86

Hydronic manifold system

Hydro-Core, the revolutionary line of hydronic manifold systems now includes boiler installation kits for more than 100 different models of the most popular boilers used today. Choose from completely fabricated supply/return lines or prepackaged component kits and shave hours off any boiler installation with expert looking results. Designed specifically for hydraulic separation, pump isolation, and purging the near boiler piping or secondary circuit loops. **Webstone.**

Circle 104 on Reader Reply Form on page 86

pe09_pgs_78_81rev_Layout 1 8/23/11 2:04 PM Page 79

KD navien®

Condensing 98% Tankless Gas Water heater

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

Remote Controller
NR-10DU

ENERGY STAR

KD navien® Navien America Inc.

www.navienamerica.com

Circle 44 on Reader Reply Form on page 86

1-800-519-8794

pe09_pgs_78_81rev_Layout 1 8/23/11 2:04 PM Page 80

Product News

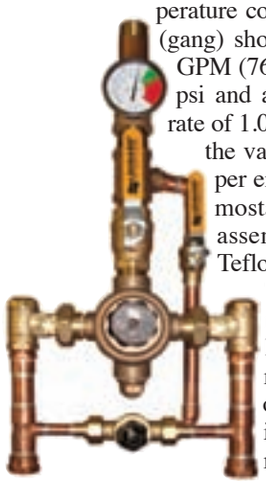
Little Giant sewage pumps

The Little Giant 9SN and 10SN feature a permanent split capacitor (PSC) motors, providing low current draw, energy efficiency and improved performance. Built on the 9S platform, the 4/10 hp 9SN series consumes only 8.5 amps while producing 110 gpm at 5 ft. of head and reaching a maximum shut-off of 20 ft. Touting a full-load rating of 9.5 amps, the 10SN expands the series as a 1/2 hp motor option. Producing 120 gpm at 5 ft. of head and maximum shut-off of 25 ft., the 10SN is built tough and features a cast iron motor housing, cover and volute. **Franklin Electric.**

Circle 106 on Reader Reply Form on page 86

Gang shower valve

The XL-690 high-low thermostatic water mixing valve provides accurately mixed water from extremely low flows of 0.5 GPM (1.9 lpm) to high flow requirements, while maintaining the temperature requirements. The XL-690 reliably meets ASSE 1069 and 1017 for advanced automatic temperature control of multiple (gang) showers. With a 20 GPM (76 lpm) flow at 15 psi and a minimum flow rate of 1.0 GPM (3.7 lpm), the valve features copper encapsulated thermostatic element assemblies with a Teflon-coated shuttle. The XL-690 mixing valve utilizes a dial thermometer on the outlet and a locking temperature regulating handle, which can be set for 120°F (49°C). All internal parts are made of bronze, brass, and stainless steel. **Leonard Valve.**



Circle 107 on Reader Reply Form on page 86

Plumbing Engineer's Editor's Choice

Interchangeable BASYS™ faucets

New BASYS™ platform of sensor-activated faucets for all commercial applications emphasizes interchangeability and improved serviceability with above-deck access. Component interchangeability is key because this simplifies part ordering and repairs; it also allows for later upgrades such as embedded solar panels or an LCD display showing wash times and water temperatures. BASYS also offers many options: Choose from multiple power sources, including a new turbine power-harvesting technology, faucet body types and operational displays. **Sloan Valve Co.**

Circle 105 on Reader Reply Form on page 86

LoadMatch System

An advanced infrastructure that enables efficient hydronic heating and cooling, lower first costs and maintenance and reduced energy consumption, the LoadMatch system reduces design, start-up, and commissioning time. Single pipe distribution and primary-secondary pumping is combined the use of maintenance-free, wet rotor circulators. The primary distribution system is a single pipe loop; the secondary distribution system is a decoupled secondary piping loop for each terminal unit in the system with flow delivered by a dedicated circulator. **Taco.**

Circle 108 on Reader Reply Form on page 86

pe09_pgs_78_81rev_Layout 1 8/23/11 2:04 PM Page 81

MIFAB®

THE INNOVATOR IN COMMERCIAL DRAINAGE PRODUCTS

Over the years, MIFAB has engineered a complete range of specification drainage products designed to save the installer time and provide the owner with long lasting, high quality products. Some of our key engineering features and benefits are:

Heavy Duty stainless steel floor drain and cleanout top assemblies for the same price as the industry standard light duty nickel bronze. This reduces dishing, corrosion and discoloration.

Grease Interceptors standard with a powder epoxy coated finish.

Special Duty rated adjustable, ductile iron area drain tractor grates for the same price as the industry standard cast iron. This reduces breakage.

Wall and ground hydrants standard with Cast Stainless Steel boxes.

Stainless Steel Cleanouts

Trap Seal Primers that require only a 3 lb. pressure drop to activate.

Roof drains with the greatest dome free area in the industry (125 square inches) to provide the maximum free area to drain water from the roof.

Floor Sinks with stainless steel top assemblies for the same price as the industry standard light duty nickel bronze. This reduces dishing, corrosion and discoloration.

Trench Drains made from corrosion resistant polypropylene for the most demanding installation. Stainless steel trench drains for kitchen, hospital and other sanitary areas.

A complete range of access doors for any application.

Compact Fixture Carriers for narrow pipe chase installations.

Heavy Duty and regular rated no hub couplings.

It is a new year. Take the opportunity to update your drainage products specifications by adding MIFAB. Your clients will appreciate it.

Circle 45 on Reader Reply Form on page 86

MIFAB®

1321 W 119th St.
Chicago, IL 60643
www.mifab.com

Members of ASPE PDI

Go to **www.mifab.com** to see the entire MIFAB line, or call **1-800-465-2736** to order your own copy of our expanded product catalog.

pe09_pgs_82_83rev_Layout 1 8/26/11 8:08 AM Page 82

Industry News

WSP Flack + Kurtz wins ASHRAE technology awards

SEATTLE — The Seattle office of WSP Flack + Kurtz, an international engineering firm, has received three regional ASHRAE technology awards for its work on a two-story, 144,000-square-foot lab facility at the Pacific Northwest National Laboratory (PNNL), a U.S. Department of Energy laboratory in Richland, Washington.

WSP Flack + Kurtz provided engineering services for the combined Battelle Biological Sciences Facility (BSF)

Photo credit: Mark Sheyer

and Computational Sciences Facility (CSF), which was completed in 2009 and is one of approximately 10 LEED® Gold laboratories in the country.

New study will make people think twice about how they discard food waste

RACINE, WIS. — A new study about the impact of various food waste disposal systems has shown that putting food waste into a garbage disposer results in lower global warming potential than putting it in the trash and sending it to a landfill. That's a key finding of the Life Cycle Assessment (LCA) commissioned by InSinkErator, a division of Emerson.

As set forth in the report, if a community of 30,000 households (the size of Newport Beach, Calif.) switched from sending food scraps to the landfill to using a disposer instead, the reduction in global warming potential would be the equivalent of eliminating nearly 2,100 tons of carbon dioxide emissions. This is akin to eliminating about 4.6 million miles of car traffic.

The report states that food scraps processed through a wastewater treatment plant with anaerobic digestion and cogeneration can even result in a reduction of global warming potential. It also concludes that processing of food scraps at these advanced wastewater treatment facilities has lower energy demand; less than landfills, incineration and centralized composting. For more information, www.insinkerator.com.

Circle 50 on Reader Reply Form on page 86

pe09_pgs_82_83rev_Layout 1 8/29/11 12:21 PM Page 83

Attention Plumbing Professionals...

Tap into the HVAC&R Connection with:

- The Most Energy Efficient Heating Systems including Boilers, Hot Water Heaters, Heat Pumps, Radiant Heat, and more
- State-of-the-art Pumps, Compressors, Valves, Piping, Fittings and other Plumbing Components
- More Sustainable Options, including Geothermal, and Environmental-friendly Products
- Labor-saving Tools, Instruments and Software

AHR EXPO

International Air-Conditioning • Heating • Refrigerating Exposition

January 23-25, 2012

McCormick Place North & South
Chicago, Illinois

Co-Sponsors: AHRI

Honorary Sponsor: HRAI

Where Sustainability Starts!

Endorsed by:
AABC • ABMA • AFE • AMCA • BI • BPI • CABA • CTA • CTI • GreenMech • GWAC • HARDI • HVI • IAPMO • IAQA • IAR • LMA • MCAA • MSCA • NADCA • NAFA • NATE • NEBB • PHCC • REHVA • RETA • RPA • RSES • SICCA • SMACNA • SPIDA • TABB • USGBC • ZigBee

Produced and managed by: INTERNATIONAL EXPOSITION CO.
100th Anniversary 1911-2011

www.ahrexpo.com

Circle 46 on Reader Reply Form on page 86

pe09_pgs_84_88rev_Layout 1 8/23/11 2:36 PM Page 84

FPE Corner

Continued from page 24

a symbol to commemorate hallowed ground, to memorialize the thousands that perished, to honor the heroes that made the ultimate sacrifice, and to let the world know that we are still here and we will not be deterred in our efforts to be that shining city on the hill. ■

Author's Note: *The Society of Fire Protection Engineers Annual Professional Development Conference and Exposition will take place from October 23 - 28, 2011 at the Portland Marriott Downtown, Waterfront, Portland, Oregon. Of interest to the plumbing engineer will be the seminar Sprinkler Design for the Engineer (Session I Oct 25-26, and Session II Oct 27-28), or the one day seminar Protection of Storage Occupancies on Oct 25. I will be one of the instructors for the 4-day Principles of Fire Protection Engineering seminar. To register go to www.sfpe.org.*

Samuel S. Dannaway*, PE, is a registered fire protection engineer and mechanical engineer with bachelor's and master's degrees from the University of Maryland Department of Fire Protection Engineering. He is past president and a Fellow of the Society of Fire Protection Engineers. He is president of S. S. Dannaway Associates Inc., a 15-person fire protection engineering firm with offices in Honolulu and Guam. He can be reached via email at SDannaway@ssdafire.com.*

The views and opinions expressed in this column are those of the author and do not reflect those of *Plumbing Engineer* nor its publisher, TMB Publishing.

ASPE joins IAPMO on Hunter's Curve revisions

ONTARIO, CALIF. — The increased use of high-efficiency plumbing fixtures, fixture fittings and appliances — and the subsequent decreased demand for water in our nation's commercial buildings and residences — has resulted in the need to revise the methodology for properly sizing plumbing systems. In response to this, IAPMO and the American Society of Plumbing Engineers (ASPE) convened a special task force of industry representatives that has been reviewing this matter and is working toward recommendations for the reduction of pipe diameters in certain applications.

Oversized pipes in plumbing systems waste water and energy and may present a potential health and safety concern, as low velocities inside water pipes reduce scouring on the interior pipe walls, which can lead to biofilm buildup. However, under-sizing plumbing systems will result in serious performance consequences, as well, so this complex project must be approached cautiously.

To assist in the mathematical and statistical portion of this work, ASPE has appointed three high-profile members to work with Dan Cole, IAPMO's technical services supervisor and also an ASPE member. The three ASPE members who will work with Cole on this project are Jason Hewitt, PE, CPD, LEED AP, of CB Engineering; Tim Wolfe, PE, of BSA Life Structures; and Thomas Poerio, Ph.D., PE, LEED AP, of Univesco, LLC. All three are experts in advanced mathematics and will be invaluable assets in this effort.

Classifieds

PLUMB-TECH DESIGN & CONSULTING SERVICES, LLC

Plumbing, Piping, Fire Protection and HVAC System Design; forensic investigations for mechanical system failures; litigation support; code and standard consulting; technical writing and training seminars; and CAD services.
3525 N. Dixie Hwy.,
Monroe,
MI 48162
Phone: (734) 755-1908
E-mail: ron@plumb-techllc.com
Website:
plumb-techllc.com

SALES MANAGER HVAC

Red-White Valve Corporation is seeking an experienced Sales Manager to focus on HVAC Sales. The candidate should have a minimum of 10 years sales experience calling on major wholesalers and contractors in the HVAC market. Responsibilities will be marketing HVAC sales in the US. Will work with existing network of representatives and regional managers with emphasis on selling balancing valves, ball valves, actuation and other HVAC related products. Approximately 40% travel. Prefer location in major metropolitan area. Undergraduate degree required.

Please send resumé to:
j.priest@rwvcusa.com

Est'd HVAC/Plumbing Co.
So. OR/No. CA.
100 yr old co with great rep. 2010 sales: $2.4M. 2011 on track to equal 2010 Owner retiring.
503-620-1800
tylerp@pipergroupinternational.com

Get more BANG for your advertising buck with a display advertisement in *Plumbing Engineer!* Contact Sadie Bechtold at 847.564.1127 or sadie@tmbpublishing.com today!

pe09_pgs_84_88rev_Layout 1 8/24/11 7:22 AM Page 85

BE › THINK › INNOVATE ›

MAGNA 32-100

POWERED BY RELIABILITY

Not too big, not too small. The "Mini" MAGNA is just right.

For large residential or light commercial projects, the new "Mini" MAGNA 32-100 medium size circulator is the perfect fit:

- Wet rotor technology for years of quiet, cool, dependable, maintenance-free service

AUTOADAPT™
RELIABLE ENERGY SAVINGS

"Mini" MAGNA's AUTOADAPT technology takes the guesswork out of achieving maximum system performance, efficiency and savings:

- Automatically adjusts speed to meet system demands
- Uses up to 80% less energy than standard circulators

POWERED BY THE IMPOSSIBLE

To find out more about Grundfos energy-efficient circulators visit us at:

poweredby.grundfos.com

facebook.com/GrundfosPumpsUSA

twitter.com/GrundfosPumps

GRUNDFOS

Circle 47 on Reader Reply Form on page 86

pe09_pgs_84_88rev_Layout 1 8/26/11 8:10 AM Page 86

Advertiser Index

Plumbing Engineer
A TME Publication

1 I wish to receive (continue receiving) **Plumbing Engineer** for **FREE**
☐ Yes ☐ No

2 I am engaged in plumbing engineering: ☐ Yes ☐ No

3 I am also engaged in the following kinds of engineering work:
☐ Piping (a) ☐ HVAC (b) ☐ Hydronics (c)
☐ Sprinkler/Fire Protection (d) ☐ Plumbing (e)

4 I am employed by one of the following:
☐ Architectural/Engineer (a) ☐ Mechanical Engineer (b) ☐ Building Owner/Engineer (c) ☐ Consulting Engineer (d) ☐ Contractor (e) ☐ Design–Construct Engineer (f) ☐ Architect (g) ☐ Manufacturer (h) ☐ Manufacturers Rep (i) ☐ Government (j)
☐ Mechanical Contracting (k) ☐ Other (x) _____

5 My title is: ☐ Construction Manager (c) ☐ Engineer (e) ☐ Owner (o) ☐ President (p) ☐ Specifier/Design (s) ☐ Vice President (v)
☐ Other _____

6 Do you design and specify products? ☐ Yes ☐ No

7 I belong to the following professional organizations:
☐ ASPE (a) ☐ ASSE (b) ☐ ASHRAE (c) ☐ NSPE (d) ☐ Other (e)

8 **Please fill out this form, sign and date below**

Name/Title

Company

Street Address Box No.

City State Zip

Telephone Fax

Email

Signature (required)

September 2011

Please fill out this Reader Reply form and fax it to us at 630.739.9700 to receive the information you have requested.

Please circle the number that corresponds to the information you' re interested in.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203

Subscribe online at
www.plumbingengineer.com

pe09_pgs_84_88rev_Layout 1 8/24/11 7:23 AM Page 87

WE SAW AN OPENING ...

... an opening created by the shortcomings of certain old line competitors.

How WE define Made in America.

Apollo Valves™ introduces the first new line of **American Made** Bronze Gate, Globe & Check Valves in decades, featuring Apollo's characteristic **on-time delivery** and **high quality**.

- They are the ideal complement to Apollo's broad range of American made bronze products.
- The expanding line is initially offered in Classes 125 and 150, threaded or solder ends with rising or non-rising stem gate valves in sizes to 3". Also included are **lead-free varieties.**
- Imported Iron Gate, Globe, Check and Butterfly Valves are available to complete the package through 24".

For more information, contact your local Apollo Distributor or visit us online at **www.apollovalves.com**

'Apollo' Valves

Customer Service
(704) 841-6000

follow us on

Circle 48 on Reader Reply Form on page 86

pe09_pgs_84_88rev_Layout 1 8/23/11 2:17 PM Page 88

Advantage: Zurn

Renewable Energy, Flush After Flush

Introducing the HydroVantage® ZGEN6200EV Series Flush Valve

The new HydroVantage® Flush Valve is the latest edition to Zurn's EcoVantage breakthrough product offering designed for new and retrofit installations. A patented hydro generator turbine creates energy during each flush process, eliminating external power consumption or battery replacement for up to 10 years. Environmental Trending Technology™ and 4.0 Sensor Technology™ make it a truly unique, innovative, self-sustainable product. For more information, please visit hydrovantage.zurn.com. To access 3D CAD and Revit files for the HydroVantage, visit zurn.com and click on "BIM Library."

Visit us at Greenbuild Booth 5339S

ZURN

zurn.com

Circle 49 on Reader Reply Form on page 86