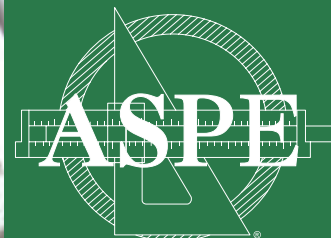


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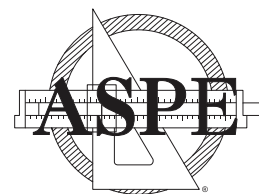
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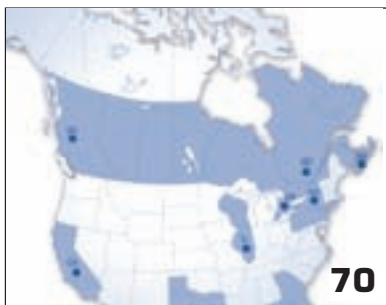
University of Kansas professor Dan Rockhill and his students design the University of Kansas' Center for Design Research building.

64 EPA TO REVISE UNDERGROUND STORAGE TANK REGULATIONS

The EPA is proposing revisions to the Code of Federal Regulations (CFR) to bring the operation of Underground Storage Tanks (UST) into accordance with provisions of the Energy Policy Act of 2005, and the Solid Waste Disposal Act.

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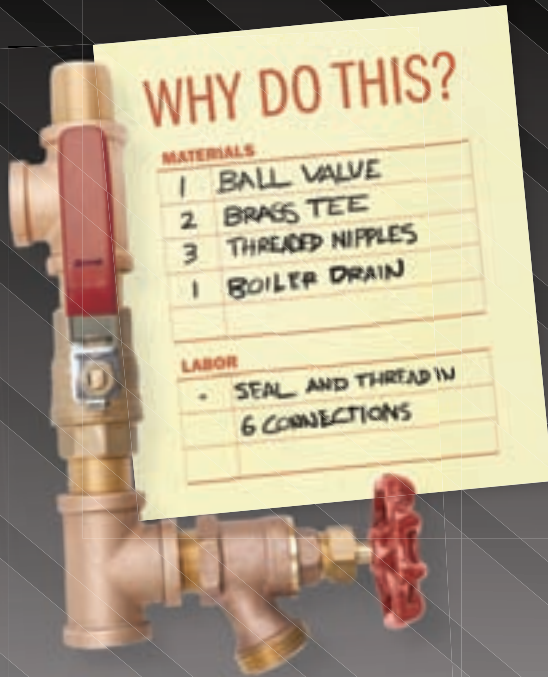
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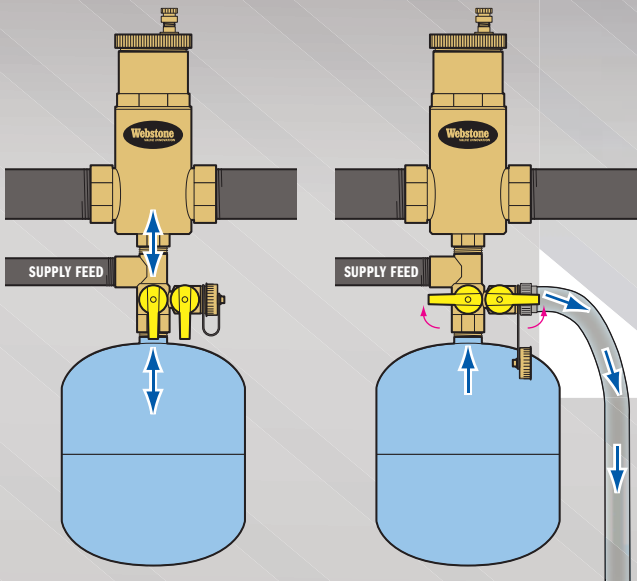
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Welcome aboard, Jim!



JIM SCHNEIDER

As one door closes another opens. On behalf of the TMB Publishing team I want to wish the best to John Mesenbrink as he moves on to another venture, and at the same time to welcome Jim Schneider, who assumes John's role as editorial director of *Plumbing Engineer*, as well as its sister publication, *Phc News*. Jim's commitment to editorial quality and consistency is unmatched, and we feel that his expertise will guide both magazines to new heights.

Jim has been working in trade publishing for almost 15 years. He began his career in education publishing, serving as the managing editor of *T.H.E. Journal*, a monthly educational technology magazine based in Tustin, Calif., from 1997 to 2001. In 2007, Schneider came on board at the Chicago office of Washington, D.C.-based construction publisher Hanley Wood as senior editor of *Eco-Structure*, a green-building magazine, and *Metalmag*, a metal design and construction magazine. In this role, he worked with contractors, engineers, and architects to seek out, write, and develop relevant content for the magazines. In 2009, he was promoted to lead editor of *Metalmag*, and became solely responsible for that brand's content, while remaining a contributing editor to *Eco-Structure*. During his time at the helm of *Metalmag*, he spearheaded its redesign and oversaw the re-launch of its website.

Jim tells us that he enjoys working with contractors, engineers and designers to better understand the issues and challenges facing them in an effort to produce the best, most useful content possible. He has a longstanding interest in sustainability and efficiency technology and techniques and earned a LEED AP accreditation from the U.S. Green Building Council in 2009.

Jim will assume editorial control of *Phc News* and *Plumbing Engineer* starting with our July issues, so please feel free to contact him by phone or e-mail at editor@phcnews.com and editor@plumbingengineer.com. ■

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NFPA, ICC create coalition

QUINCY, MASS. —The National Fire Protection Association (NFPA) and the International Code Council (ICC) announced the formation of the Coalition for Current Safety Codes (CCSC). The coalition will advance public safety in the built environment by advocating states and municipal jurisdictions adopt current building, fire prevention, sustainable, electrical and life safety codes.

“For more than 100 years, the public and government on all levels have benefited from the life and property saving work of private standards developing organizations (SDOs),” said NFPA president Jim Shannon. “The Coalition for Current Safety Codes is an effort to ensure those same parties are taking full advantage of the latest information in the most up to date codes.”

“ICC and NFPA have a rich history and dedicated members who devote themselves each day to ensuring the development of safe and sustainable communities,” said ICC CEO Rick Weiland. “The efforts of our memberships have dramatically strengthened codes and standards, protecting the public. This coalition is a great way to spread the word about how to protect the environment

and the health and welfare of our society.”

ICC and NFPA will seek broad participation in the coalition from other SDOs, the construction and insurance industries, government and the private sector to raise awareness about the importance of and steps needed to provide up-to-date buildings for people to live, work, play and go to school. The two associations are coming together to co-chair the coalition because of a mutual commitment to public safety and a desire to create even broader support for the adoption of modern codes and standards.

Codes and standards are updated on regular cycles to benefit from new science, lessons learned from disasters and new technologies and products. Both associations are among a number of SDOs that provide support to government by engaging in public/private sector collaboration to develop codes that support health, safety and the environment. As a result, government does not take on the high cost of developing its own codes and benefits from code uniformity that enables safe and affordable construction growth.

Liberty Pumps participates in road race



BERGEN, N.Y. — Liberty Pumps entered a team of 32 employees into the annual Rochester Chase Corporate Challenge road race. The 3.5 mile race was held at the Rochester Institute of Technology on May 31. A total of 9,967 runners participated in the event with proceeds going to help the Red Cross.

Top finishers from Liberty were Brad Sawyer in the men's category, with a time of 26:24 and Robyn Brookhart in the women's category, with a time of 36:02.

Speakman adds live call agents to enhance customer assistance

NEW CASTLE, DEL. — Speakman Company has added two call agents to their team. Any customer calling between the hours of 8 a.m. and 5 p.m. EST will now be greeted by a live voice. The new members of the

Speakman team, Jason Nally and Kelly Hamilton, have been brought in to provide positive energy and a more satisfying and personable experience to each customer who calls the company's main assistance line.

Speakman has been the leading name in the showerhead and hospitality industry for more than 90 years, having been recognized many times for the performance and durability of their products.

Understanding the need to effectively communicate information has been a corporate focus for Speakman, who continually strives to excel in their customers' satisfaction and to be resourceful to their agents. By implementing live call agents, the company guarantees that each customer call is met with the best service possible each and every time, thus raising the overall level of customer satisfaction.

In 2011, Speakman introduced more than thirty new showerheads to the marketplace and, most recently, launched coordinating faucet collections. Their corporate goal is to expand their presence within the hospitality market and convert to consumer purchases through the retail and Internet markets. Speakman hopes that their commitment to providing excellent service to their customers will assist the company in effectively meeting these goals.

Chicago Faucets offers new products and services

DES PLAINES, ILL. — Chicago Faucets continues to provide products and services to help its customers reach sustainable goals and “green” building initiatives. The company has countless water conserving products for

More Industry News on page 12

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Industry News

Continued from page 8

any facility, including water conservation retrofit kits and a large product selection of electronic and metering faucets, pre-rinse valves and outlets.

Chicago Faucets now offers a new online water savings calculator, located at chicagofaucets.com/calculator. Users can access the calculator to get an estimate of how much water they can save by switching from a 2.2 gpm faucet to a 1.5 or 0.5 gpm faucet. The calculator is pre-programmed with estimated sewer costs from major cities and shows how upgrading Chicago Faucets can also provide a significant cost savings.

The recently-launched 3500 Series provides even bigger water saving than current products. It saves water with a 0.5 gpm (1.9 l/min) outlet. The self-closing MVP™ metering cartridge provides precise water flow and shuts off automatically. The time-tested MVP mechanism is easy to adjust, and spare parts are readily available for quick change-outs, reducing downtime and lowering maintenance costs.

A solid ECAST® brass, chrome-plated body provides unmatched durability, while meeting local requirements for the reduction of lead in plumbing fixtures. Pre-installed, flexible, stainless steel hoses connect to standard water supplies. Internal temperature control is accessible above the deck for easy adjustment.

Chicago Faucets remains at the forefront of sustainability with an ISO14001 certification of its manufacturing process, which recognizes the company's systematic approach to all of its environmental management systems.

The ECAST line of durable, high-quality brass faucets and fixtures are designed and manufactured with one-quarter of one percent (0.25%) or less total lead content by weighted average. These products are intended for installation in locations such as California, where state laws and local codes mandate lead content levels, or wherever lead content is a concern.

Chicago Faucets was the first company to offer a complete line of products designed to support the new California Green Building Code (CALGreen). CALGreen-compliant

faucets feature low flow rates from 0.35 gpm to 1.5 gpm and are part of the ECAST line.

Xylem engineering tool designed for cooling processes

MORTON GROVE, ILL. — Bell & Gossett, a Xylem brand, has introduced the industry's first PC application tool designed for engineers that deal with coil cooling challenges. The System Syzer — Psychrometry performs several critical calculations related to coil cooling and offers a variety of unique features, such as:

- Cooling process graphed on chart and animated to show heat transfer direction
- Calculates multiple psychometric characteristics based on two inputs
- Calculates mass flow and cooling load (Btu)
- Built-in temperature/humidity for 100 U.S. cities
- Determines coil condensate rate
- Real time outdoor air conditions with inclusion of weather site XML address

The System Syzer application is based on the iconic plastic wheel calculator designed by Bell & Gossett's Gil Carlson. Widely recognized as the "Father of Modern Hydronics," Carlson first introduced the System Syzer in 1963. It has since been distributed to well over 100,000 engineers and tradesmen.

In order to run the System Syzer program, a personal computer must have a minimum 386 processor, 4 MB of RAM, about 1 MB of free disk space and Windows 3.1 or higher operating system.

The System Syzer application is free of charge and can be downloaded from the Bell & Gossett website at www.xyleminc.com/ESP.

AERCO elevates marketing efforts

BLAUVELT, N.Y. — AERCO International announced aggressive marketing efforts to raise its brand

Continued on page 14



Schooling the competition for 25 years.

The Benchmark family of high-efficiency boilers.

Here's a history lesson for all the "so-called innovators" of modulating condensing technology—AERCO has been at the head of the class for 25 years. Our redesigned Benchmark 3000 high-efficiency boiler is a perfect example:



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recognition and support a series of new products that will reaffirm the company's leadership position in the boiler and hot water heater market. In the past year, AERCO has released eight new products, as well as an "Equal to New" refurbishment program. AERCO will be using a multi-

faceted strategy to promote its company brand and products via advertising, public relations, video and social media programs.

Marketing initiatives include print and online advertisements in trade media that showcase the technology behind the new Benchmark and

Innovation products. Complementing the ad campaign is a comprehensive public relations program, as well as videos on the products and AERCO's new state-of-the-art, 165,000-sq. ft. manufacturing facility located in Blauvelt, N.Y.

AERCO is also executing a social media strategy on Facebook and YouTube. The new Facebook Fan Page, <http://on.fb.me/JPXz9n>, features detailed information about AERCO's product line, applications and industry news. Fans can also view photo albums showcasing products, tradeshow booths and company events. Through Facebook's timeline feature, fans can also see how the company has grown since it was founded in 1949 and learn more about its many industry firsts.

"Our new Facebook page is designed to encourage active conversation between AERCO and its reps, customers and end users," said Fred Depuy, president and CEO of AERCO International. "Our goal is to build an open forum with these groups as well as to become a leading resource for industry related news."

ASPE approved as ANSI-accredited standards developer

CHICAGO — The American National Standards Institute (ANSI) has approved the American Society of Plumbing Engineers (ASPE) as an ANSI-accredited standards developer. This approval signifies that ASPE has demonstrated to ANSI's Executive Standards Council that its development procedures meet the criteria detailed in the ANSI Essential Requirements: Due Process Requirements for American National Standards.

"With the granting of ANSI accreditation, ASPE joins the ranks of recognized industry standards developers, which validates ASPE as a leading voice in the principles, concepts and standards for the plumbing design and engineering community," says David Dexter, PE, CPD, FASPE, chair of ASPE's Main Design

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Standards Committee and an engineer with Fosdick & Hilmer in Cincinnati.

"ASPE is proud to have received ANSI accreditation, one of the highest honors a U.S. standards developer can attain," says ASPE executive director/CEO Jim Kendzel, MPH, CAE. "I have been involved with ANSI in many ways during my career, and I believe that the most important value the organization provides today is the reason why it was originally formed; to provide a mechanism for an open, volunteer consensus standards system in the United States that reduces duplication and conflict."

As an ANSI-accredited standards developer, ASPE now may sponsor documents for approval by ANSI's Board of Standards Review as meeting certain criteria regarding due process in development to be designated as American National Standards. To develop standards, ASPE will utilize a consensus-based process involving all interested parties and broad-based public review and comment, with the ultimate goal of publishing American National Standards that are recognized in the model plumbing codes. "We are committed to upholding the principles of openness, consensus and due process defined in the ANSI Essential Requirements and our own procedures," Kendzel says.

Through the work of its Design Standards technical committees and partnerships with industry organizations,

ASPE is currently developing standards on siphonic roof drainage, rainwater catchment, hot water temperature and control and water line sizing.

"With ANSI accreditation, ASPE will continue our efforts to develop sound, science- and engineering-based design standards," Dexter says. "These standards are a positive, approved means of furthering engineering principles and concepts to protect the welfare and safety of the public at large. This is a great day for ASPE and the plumbing engineering profession."

Lochinvar boiler to be featured on PBS

LEBANON, TENN. —The Fire Tube KNIGHT® wall mount boiler will make an appearance on an upcoming episode of the PBS show, "Hometime." Dean Johnson, host of the home improvement television show and his crew recently documented the retrofit installation of a radiant floor heating system.

At the request of the show, Lochinvar provided a KNIGHT wall mount unit with inputs of 199,000 Btu/hr (WH199) to provide heat for the radiant system and to supply domestic hot water to an existing storage tank. The episode is scheduled to air for the first time on July

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14, 2012, with a second airing tentatively scheduled for September 8, 2012.

Since the featured project is a retrofit, the ENERGY STAR qualified KNIGHT is an ideal fit, since it offers highly efficient operation. With a radiant heating application like this one, the Fire Tube KNIGHT Boiler offers up to 98.6 percent thermal efficiency as well as Low-NOx emissions and 5:1 turndown to keep fuel use to a minimum. In addition, KNIGHT's advanced SMART SYSTEM control automatically adjusts the boiler water temperature as the outside temperature changes to further ensure the ultimate indoor comfort.

To kick off the project, Dennis Hodgson with Team Mechanical and the "Hometime" crew first removed the home's existing cast iron boiler and adjusted the venting system from metal to PVC in order to accommodate the installation of the new condensing boiler. The KNIGHT allows for multiple venting options, and the direct-vent sidewall option was selected as the best fit for this job.

Since the application required different temperatures on different levels of the home, as well as for the indirect water heater, the team added Lochinvar's multi-temperature Loop Control accessory. This allows the system to operate at optimum efficiency, while distributing heat for multiple supply loops that require unique temperatures.

The installation was a success, and the home now boasts a highly efficient radiant heating system. In addition to its efficiency, the unique modulating design of the KNIGHT also allows for extremely quiet operation.

To tune in to see the KNIGHT in action on "Hometime," check your local listings or use the online station finder available at www.Hometime.com.

NIST Researcher Lawrence S. Galowin dies, leaves behind an accomplished legacy

BETHESDA, MD. — Dr. Lawrence S. Galowin, 87, a former section chief, program manager and researcher in building service systems at the National Institute of Standards and Technology, died May 15 at Suburban Hospital in Bethesda.

Dr. Galowin joined the Interior Department's Office of Saline Water in Washington in 1968. In 1974, he transferred to the National Bureau of Standards, which was later renamed the National Institute of Standards and Technology. He directed research in energy conservation and plumbing and other building systems and

More Industry news on page 18

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Industry News

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was instrumental in developing a water conservation program for the Department of Housing and Urban Development.

Dr. Galowin retired in 1998 but continued his affiliation with NIST as a guest researcher until last year. He was a visiting professor in 1998 and 1999 at Heriot-Watt University in Edinburgh, Scotland, and for many years was a member of an international commission on water supply, plumbing and drainage for buildings.

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Movers & Shakers

Bradford White announces employee promotion



Carnevale

AMBLER, PA. — Nicholas J. Giuffre, president and CEO of Bradford White announced the promotion of R. Bruce Carnevale to the position of executive vice president — sales and marketing. He has also been appointed to the board of directors of Bradford White Corporation.

Carnevale will be responsible for developing and coordinating the strategies to ensure that all Bradford White subsidiaries are well-positioned to take advantage of the industry's rapid changes of new regulations, new technologies and new competitors to drive continued growth and success. He will also be involved in all merger and acquisition opportunities and decisions for the company.

Carnevale has been employed with Bradford White since 1996 and has served as both a regional and national sales manager and most recently vice president — sales and marketing with great success and leadership. He will continue to report directly to Giuffre.

Haws Corporation welcomes new staff

SPARKS, NEV. — Haws Corporation has hired two new sales engineers to help support its continued success in the plumbing and emergency equipment industries. New team members include:

- Nichole Whisman joined the Haws Integrated team in January and is based at the Sparks, Nev., location. Whisman has more than eight years of experience as an application/sales engineer and was the recipient of the prestigious NASA Space Grant Consortium Graduate Fellowship award.

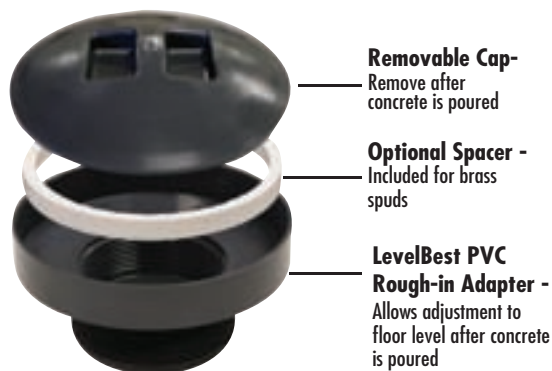
- Billy Wing is the newest member of the Haws Integrated team and is based out of a satellite office in Texas. Originally from the traditional side of engineering, Wing has more than seven years of experience in sales engineering. Born in Panama City, Panama, he is bilingual in English and Spanish. ■

LevelBest Rough-in Adapter

No More Chisel, No More Taping, No More Damaged Strainers or Covers!



Scan Code for more information & part codes.



Removable Cap-
Remove after concrete is poured

Optional Spacer -
Included for brass spuds

LevelBest PVC Rough-in Adapter -
Allows adjustment to floor level after concrete is poured

What is LevelBest?

The **LevelBest Rough-in Adapter** has a unique design that allows for adjusting the height of the drain/cleanout **BEFORE & AFTER** the concrete is poured!

How is the LevelBest rough-in adapter different from our competition?

Our **LevelBest System** uses **STANDARD IPS THREADS**. This means you are not limited in style or manufacturer when planning a project.

HOW IT WORKS



1 Set drain with LevelBest rough-in adapter at concrete pour level. The height can be adjusted by tightening or loosening the adapter.



2 The concrete should be poured so that it is level to the top of the LevelBest adapter. The cap of the LevelBest allows the slab to be finished easily without using a hand trowel.



3 Remove the temporary cap with pliers or water meter key as shown on the label. The cap eliminates the need for duct tape or other protective coating on the cover or strainer.



4 Install the spud and strainer and adjust to meet the floor covering. The adjustment of the spud eliminates the need to break and repair the floor when the concrete is poured too high. Use grout or silicone to seal.

Save Time & Money installing Drains and Cleanouts!

We offer a complete line of LevelBest Drainage and Cleanout Systems.



PVC Pipe Fit Drain/Cleanout System



PVC Hub Fit Drain/Cleanout System



PVC Heavy Duty Drain System



PVC Heavy Duty Slab Drain System



No Hub Cast Iron Drain/Cleanout System

Looking for an **EASY, QUICK & INEXPENSIVE** way to install drains and cleanouts?



Inside Pipe Fit Drain & Cleanout System

Cover is the same diameter as the pipe to provide full coverage **EVERY** time!

Scan the QR Code on this page for more information.

Concrete Floor Application



The concrete should be poured so that the pipe stack is above the finished surface.

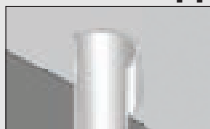


Use a Plumbest EZ Stroke pipe saw to cut flush with concrete. Then, use a socket saver or inside pipe cutter to trim pipe 3/8" below concrete surface.



The inside pipe fit drain/cleanout can easily be glued into the pipe creating a level surface once the strainer is installed.

Tile Floor Application



The concrete should be poured so that the pipe stack is above the finished surface.



Use a Plumbest EZ Stroke pipe saw to cut flush with concrete. Glue inside pipe fit drain/cleanout into the pipe.



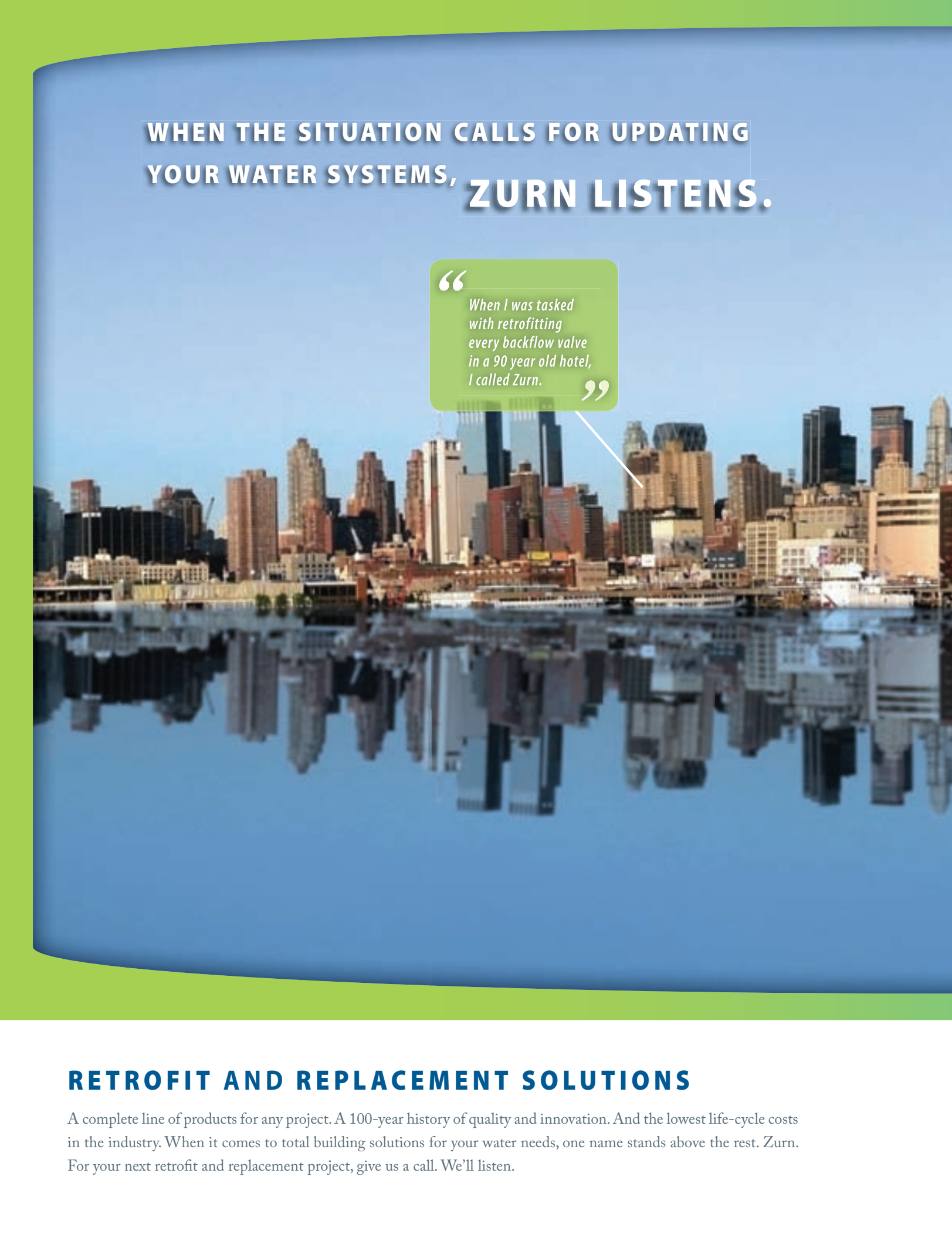
Lay tile to the edge of the cover or strainer. No chisel or tape needed!



Jones Stephens South
3249 Moody Parkway
Moody, AL 35004
Phone 800-355-6637
Fax 800-462-6991

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I called Zurn.*

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“When your building sees 30,000 workers every day, you need sustainable plumbing products that not only look good, but also last. We called Zurn.”

“We needed to replace every drain in a hospital built in 1917. We called Zurn.”



375XL Lead-Free Reduced Pressure Principle Assembly



Z5798 Ultra Low Consumption Urinal

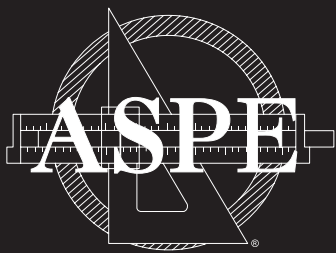


Floor Drain



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Circle 14 on Reader Reply Form on page 117



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From the President's Pen



William F. Hughes Jr., CPD, LEED AP, FASPE
2010-2012 ASPE PRESIDENT
aspepres@aspe.org

For those readers who are not ASPE members, June is typically when ASPE chapter leaders get together at the Region Chapter Presidents Meetings. ASPE currently has 61 chapters in five regions across North America. The region meetings are hosted by different chapters every year, but this year the chapters all voted to hold the meetings on the same weekend: June 1-2.

Along with the region directors, other members of the ASPE board of directors as well as staff have the opportunity to attend these meetings. The region meetings are an excellent opportunity for the ASPE board to meet and exchange information with the chapter representatives in attendance—typically the current chapter president or the newly elected chapter president or both. Other chapter officers also often choose to attend.

The board member in attendance and the region director present to the chapter officers an update on the status of the Society, including accomplishments, new initiatives, and new products. The chapter leaders are invited to provide their input on the various presentations. This gives the board the chance to hear about the good and the bad, the likes and the dislikes. I believe that this opportunity to provide feedback personally to members of the ASPE board is crucial to the development of the Society. We board members need to hear firsthand from the chapters their comments and criticism on what we have done in the past year.

This year we discussed several new and important topics and programs on which we wanted the chapters' input regarding the direction the board should take. The entire ASPE board of directors will review the meeting minutes from each of the region meetings at the next board meeting in Chicago later this month. The information obtained from the meetings will be critical in helping us make decisions for the upcoming year.

One of the major items of discussion was the 2012 ASPE Convention & Exposition, which is being held in Charlotte, North Carolina, October 27-31. The chapters were asked to help the ASPE staff promote the Convention & Exposition to their memberships as well as others within the industry. The ASPE Convention & Exposition can benefit anyone working in the plumbing industry, including architects, master plumbers, contractors, inspectors, and code officials, as well as students.

While we encourage everyone to register for the full Convention to take advantage of the educational program and earn almost a year's worth of CEUs, you should keep in mind that the Exposition itself is free. Being held October 29-30 in the Charlotte Convention Center, the 2012 Exposition will include more than 300 manufacturers displaying the latest technologies in plumbing products and services. Product engineers will be at each booth to address any questions or concerns you may have about their products. You can't find this one-on-one contact with so many plumbing product manufacturers under one roof anywhere else.

In addition to the Exposition, the ASPE Convention offers attendees a quality technical education experience, with more than 30 education seminars from which to choose and the chance to earn up to 16.75 CEUs. It also provides an excellent opportunity for attendees to network with thousands of your peers representing all aspects of the industry. We will be kicking off the event on Sunday, October 28, with a party at the NASCAR Hall of Fame, and we hope to see you there!

Other topics discussed at the region meetings included current programs and future steps to meet the goals in ASPE's Strategic Blueprint, budgets for the 2013 and 2014 fiscal years, and ways



to increase ASPE membership. As you can see, the region meetings are very informative for both the chapter leaders and the ASPE board of directors. These meetings are important to the future and development of ASPE as a Society.

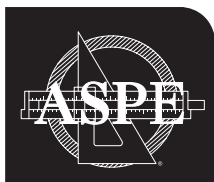
This year's Region 3 meeting was very special to me; it was the region meeting I felt the necessity to attend because two Society board members from Region 3 are stepping down from the board this October. Thank you, chapter leaders, for all of the help and support you have given these two very special ASPE members.

This is what I feel ASPE is all about: developing friendships that will last for years. From our years of service on the ASPE board, we have become great friends and have shared many memories that I know we will not forget.

I would like to thank both of these individuals for their commitment and dedication for their many years of service on the ASPE board and as ASPE members.

David H. Anelli and William (Billy) Smith, thank you. You both will be gone, but you will not be forgotten. **ASPE**

Read, Learn, Earn



Do you find it difficult to obtain continuing education units (CEUs)? Through this special series, ASPE can help you accumulate the CEUs required for maintaining your Certified in Plumbing Design (CPD) designation or numerous regulatory agency CE programs.

The process is simple: Each month, just go to **ASPE.org/ReadLearnEarn**, where you will find a PDF containing an article followed by a 12-question multiple-choice quiz and an application form. Read the article, answer the questions based on the article, and submit the form to the ASPE office. If you earn a grade of 90 percent or higher on the test, you will be notified that you have logged 0.1 CEU, which can be applied toward CPD renewal or numerous regulatory agency CE programs.

Tests are valid for one year, so you can earn up to 1.2 CEUs by successfully passing each test. (You can only receive one credit per test.) The cost is free for ASPE members and \$35 per test for nonmembers.

Forms may be e-mailed to aspeeducation@aspe.org or faxed to 847-296-2963.

New ASPE Members

Atlanta Chapter

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John W. Campbell
Brandon Derryl Gavins
Gregory Mark Turner

Baltimore Chapter

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LEED AP

Boston Chapter

Hareesh Vishnu Chandekar
Dario Damiani Correia, EIT, GE
John Dodge
Christopher Thomas Maskwa,
GE
Joseph Michael Mecke
Christopher James Meurer,
LEED AP
Christopher David Perrotta

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Kenneth E. Marks
Maia Penco
Xuefeng Zhang

Central Florida Chapter

Bill Familo
Linda List
Jennifer Lynn Schmidt

Central Ohio Chapter

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David Albert Barbee

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Ned Mahic
Qazi Mohammed Sohaib
Chris M. Watson

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Dallas/Ft. Worth Chapter

Shannon Michael Hooper

Denver Chapter

Denis J. Miller, PE
Christopher Ryan Visconti

Houston Chapter

Christopher Best

Long Island Chapter

Jaymus John Burke

Los Angeles Chapter

Mei Kwan, GE
Guru Singh

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Stanley Funk
David V. Harbison Jr.
Kevin Koubek, PE
Mark Meredith
Vladin Strashun

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Gustavo Solano, PE

Minnesota Chapter

Peter Michael Dzubay
Benjamin B. Johnson
Andrew Koppi
Zbigniew Wroblewski, PE

Montreal Chapter

Jessica Brien-Breton, GE
Jean-Sebastien LaBerge

New Orleans Chapter

Ryan Louis Livaudais

New York City Chapter

Terrence N. Bharat
Joseph Pawell
Jason Desmond Radcliffe

North Florida Chapter

Sam Diperna

Northern California Chapter

Benjamin Denker, PE

Omaha Chapter

Justin Dean Hajek
Daniel A. Hellige
Jimmie Lynn Marco
Alex Robert Milliken
Ron Thompson

Orange County Chapter

Stephen Haines

Overseas Chapter

Mohamed Hussein Abdelbadie
Clint Alain Minoza D'Lonsod

Phoenix Chapter

James H. Brown, PE
Paul Hardin Pennington

Rochester Chapter

Brian Somers, PE

Seattle Chapter

Jason Martin F. Hall
Jase Rouleau

Southern Nevada Chapter

Jason Williamson

Southwestern Ohio Chapter

James Michael Renner

St. Louis Chapter

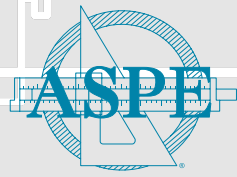
Leslie Cowger
Kelly Diane Dedeke, GE

Tulsa Chapter

Erik Douglas Nookan

Western Michigan Chapter

Chad Sanborn



ASPE REPORT

Monthly News for ASPE Members

The authority in plumbing system design and engineering

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From the Executive's Desk



Jim Kendzel, CAE, MPH
ASPE EXECUTIVE DIRECTOR
jkendzel@aspe.org

Congratulations newly elected ASPE chapter officers!

The election to select our next U.S. president is several months away; however, many ASPE chapters have already held their officer elections for the upcoming year. Congratulations to those who were elected and thank you for investing your valuable time into further developing strong and vibrant ASPE chapters. Many of our members do not have the time or ability to serve in the critical role of a chapter officer, so I hope that you cherish the opportunity you have been given and use the time you serve as an officer to advance the profession of plumbing engineering as well as be a strong advocate for ASPE.

I realize that for many of you this is your first opportunity to serve on a board of directors, so let me briefly remind you of the critical nature of your role. The governing board of a not-for-profit organization such as ASPE has three basic but very important functions: approve the outcomes the association seeks to accomplish, ensure that the resources to achieve the outcomes are available and used efficiently, and ensure that the desired outcomes are being achieved (*The Will to Govern Well*, ASAE: The Center for Association Leadership, 2010). I would like to focus on the first function.

As you are relaxing in your lounge chair this summer and thinking about what you would like to accomplish in your chapter this fall, I ask you to first take the time to review the Society's Strategic Blueprint (aspe.org/StrategicBlueprint). It is my assumption that some of you may not be aware that the blueprint exists or think of it as something that is meant for the national board and not having a direct impact on your role as a chapter officer. On the contrary, the Strategic Blueprint exists as a roadmap for the Society as a whole to achieve long-term success, which of course includes the long-term success of the chapters.

It is important for you as a chapter officer to be familiar with the strategic objectives of the Society and to incorporate tactics for achieving those objectives into your planning at the chapter level. We all are ASPE, and we will only succeed in fulfilling our strategic objectives through a coordinated effort throughout the Society.

Your time is valuable, and I am sure that you and your board will quickly get involved in making sure your chapter events are planned; however, I encourage you all to think about the long-term strategic direction of the Society and how your board and chapter can help achieve those objectives. In particular, I ask our chapter officers to focus on the ASPE strategic objective related to fostering collaboration among other organizations serving the plumbing community. Many of our chapters already have reached out to other association chapters in their area to hold joint meetings and events that have been very valuable. I encourage all of our chapter boards to find out what other association chapters are in their area and to reach out to them to possibly coordinate efforts and determine where opportunities exist to work together for the benefit of all members. If you are unsure where to begin, please feel free to reach out to me directly for help. Also, you can visit our website to find out what organizations we currently are partnered with (aspe.org/Partnerships) and then visit their websites to learn where they have chapter affiliations.

Thanks again to everyone who submitted their name for consideration as an ASPE chapter officer and congratulations to those who were elected. Good luck in serving your chapter and ASPE, and please reach out to the staff if you have questions or suggestions. **ASPE**

Join ASPE and WQA

"Commercial Final Barrier: A New Approach to Water Treatment"

Wednesday, July 25, 2012, 2:00 pm EDT

Earn Continuing Education Credits: This one-hour contact program provides 0.1 CEU or 1.0 PDH.

Register at www.aspe.org/finalbarrier



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DRIVE YOUR SUCCESS

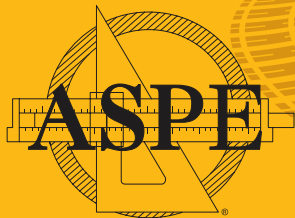
2012 ASPE CONVENTION AND EXPOSITION

EXPO: October 29-30 | CONVENTION: October 27-31 | Charlotte Convention Center | Charlotte, NC



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- ✓ 35+ technical education sessions
- ✓ Up to 16.75 continuing education hours
- ✓ New design solutions to take back to the office
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- ✓ Product engineers on-site to answer your questions
- ✓ Nonstop networking with 4,000+ of your peers



The 2012 ASPE Convention & Exposition is the most cost-effective way to enhance your skills. But don't take our word for it!

Visit aspe.org/expo and use our justification tools to help quantify the ROI of attending.

Register now at aspe.org/expo!

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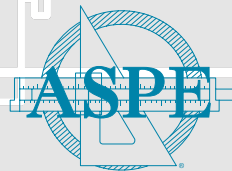
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ASPE REPORT

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Congratulations New CPDs!



ASPE would like to recognize and congratulate the following individuals for achieving the Certified in Plumbing Design (CPD) designation by passing this year's examination. They have joined the ranks of outstanding professionals with advanced skills in the design and specification of plumbing systems. For more information about the CPD program, visit aspe.org/CPDCertification.

Atlanta Chapter

Samson Bogale, CPD
Benjamin Byerson, III, CPD, CET
Gregory Odom, CPD
Charles Shoemaker, CPD
George Walters III, CPD

Baltimore Chapter

Neal Cluck, CPD, LEED AP
David Fitch Jr., CPD
Michael Morrissey, PE, CPD, LEED AP
Michael Shacklock, CPD
Robert Thomas, CPD

Boston Chapter

Jeremy Harold, CPD
Mark Jacobs, PE, CPD
David Vashon, PE, CPD

Buffalo-Niagara Chapter

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Anna Szveda, CPD, LEED AP

Central Florida Chapter

Michael Henk, CPD
Nathan Hutchings, CPD

Central Illinois Chapter

Richard Tjaden, PE, CPD

Central Indiana Chapter

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Central Ohio Chapter

Robert Yoakum, CPD, LEED AP

Chicago Chapter

Christopher Sbarbaro, CPD

Cleveland Chapter

Inna Utis, PE, CPD

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Kelvin Kennedy, CPD, C.D.
David Morgan, CPD
Kevin Rohde, CPD
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Denver Chapter

Daniel Harper, PE, CPD

Eastern Michigan Chapter

Hank Koppelo, CPD

Intermountain Chapter

Ronald McLean, CPD

Kansas City Chapter

Jeffrey Brooks, PE, CPD

Los Angeles Chapter

Jeffrey Cohen, CPD
James Siebert, CPD
Diane Wang, CPD

Members at Large

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Gregory Gruendler, PE, CPD
Jay Yarboro, CPD

Memphis Chapter

James Bolin, CPD

Minnesota Chapter

Douglas Lamping, CPD
Ryan Petersen, CPD

Nashville Chapter

Benjamin Oisten, CPD

New Jersey Chapter

Albert Hadam, CPD
Gerald Van Pelt Jr., CPD

New York City Chapter

Ramez Afify, PE, CPD
Song Le, PE, CPD
Alpesh Mistry, CPD
Seung Ok, CPD

Orange County Chapter

Joel Baldovino, CPD

Philadelphia Chapter

Michael Berry, CPD

Phoenix Chapter

Mark Graf, CPD

Pittsburgh Chapter

Duane Englehart, CPD
Raymond Paff, CPD

Portland Chapter

David Reames, PE, CPD
Chris Scott, CPD

Richmond Chapter

Benjamin Doyle, CPD
Shontae Hewlett, PE, CPD, LEED AP BD+C
Istvan Godri Martis, CPD
Michael Pearce, CPD

Rochester Chapter

Erik Hartwig, CPD

San Francisco Chapter

Jeffrey Koch, CPD

Saied Nazeri, PE, CPD

Joji Thomas, PE, CPD

Seattle Chapter

Nicanor Natividad, CPD

Southern Nevada Chapter

Richard Ballard, CPD
Jeremiah Johnson, CPD, LEED AP

Southwest Ohio Chapter

Steve Savage, CPD

St. Louis Chapter

Dwaine Bagby, CPD
Joseph Pavis, CPD

Washington, D.C. Chapter

Samuel Brunetto, PE, CPD
Theodros Gidey, CPD
Jose Garcia Jaco, CPD
David Ralston, CPD
David Roach, CPD

West Coast Florida Chapter

Eric Eldridge, PE, CPD, LEED AP

Wisconsin Chapter

Aaron Bock, CPD

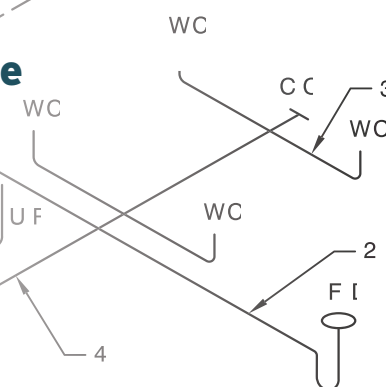
Nonmembers

Lata Anil Chandnani, CPD
Eric Scott Lee, PE, CPD
Brian McDonough, CPD
Hong Niu, CPD, LEED AP
Jacob Sills, CPD

UCLA Extension and ASPE Announce Fall 2012 Plumbing Systems Design Course

This fall, offered online or at the UCLA campus, Plumbing Systems I: Code and Engineering Fundamentals will cover basic design and fundamental engineering practices for plumbing systems for both beginners and those who have prior experience but wish to update or supplement their knowledge. Taught by Haig Demergian, PE, CPD, FASPE, the course will discuss design requirements, selection and sizing procedures for the required plumbing fixtures and equipment, and the relevant codes governing each system.

Visit uclaextension.edu on or after July 30 for more information about the course and to register.





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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 bowls.



Stainless Steel Cleanouts



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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 kitchens, hospital and other sanitary areas.



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Compact Tieure Carriers for narrow pipe chase installations.



Heavy Duty and regular rated no hub couplings.

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- No Hub, Regular, & Heavy Duty Couplings
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- QC Done at all of Our Foundries & Distribution Facilities
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Stainless Steel Regular &
Heavy Duty Couplings



Welcome to the NewAge.

Quality you can count on.

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- ✓ SV Pipe and Fittings are manufactured to exceed the requirements of ASTM A-74
- ✓ All pipe is honed on the interior to ensure the highest level of flow characteristics
- ✓ Quality control done at all of our foundries & distribution facilities
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- ✓ All pipe is 100% hydro tested
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- ✓ All products are warehoused indoors
- ✓ Pipe coating is sprayed rather than dipped
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- ✓ Conforms to national standards
- ✓ Foundries ISO 9001:2000 certified to ensure traceability
- ✓ Audited and certified by accredited independent agency



4" x 10' No Hub Pipe



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Circle 17 on Reader Reply Form on page 117

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Organizational commitment

Sitting on my desk is a wonderful photo collage of my 10-year-old son performing at the California State gymnastics championship this past spring. He did fairly well; not his best, but well enough to progress to the regional championships. After the regionals, he announced with absolute certainty that he was done with gymnastics, which he has been doing in one form or another since he could walk.

While I was very disappointed with his decision, knowing from my adult perspective how much he was walking away from, I can't say that I blame him. At 10 years old it gets a bit tiresome to drag yourself to the gym after school for three hours, four days a week, with homework to contend with when you get home, especially when you have been doing it for as long as you can remember. I am not the sort of parent to force him to do something that he doesn't want to do, particularly after he had given it his all for many years.

In my professional life, I'm reminded of commitment on a regular basis. Sitting on my desk are two resumes, both of which have work experience track records that display quite a range of employment activity. Each employment stay is relatively short – one year, two years, three years, here and there. This isn't necessarily a criticism. There can be a host of reasons that cause a person to decide to change jobs, although it does seem to be much more common here in California than back in New York.

Commitment is a two-way street on the part of both the employer and the employee. Back in the glory days of corporate America, nearly every credible employer offered full benefits, meaning health insurance, pension plans, life insurance and so on. These benefits have eroded over the years due to rising costs and the advent of 401K plans and other programs. In this economy, some employers offer no benefits whatsoever; no sick time, no vacation time, nada. So it is not surprising that the work ethic has suffered as a result.

In this economy it is difficult, if not impossible, for the employee to pick and choose their employer, which is unfortunate, because having the right employer is truly the key to the success of employee and employer alike.

Organizational commitment is a subset of organizational behavior that measures an individual's psychological attachment to an organization. It predicts variables such as turnover, job performance and discretionary behavior. Organizational commitment is also connected to job stress, employability, empowerment and distribution of leadership. Interestingly, the studies on organizational commitment generally focus on the employee, when, in reality, the employer has an integral and vested role in the subject.

There are five generally accepted rules that the

employer can apply to enhance organizational commitment. The employer should:

- commit to people-first values, put them in writing and hire managers who support and promote these values.
- have a clearly communicated mission, or mission statement, that expresses the ideology of the organization, that builds charismatically on the tradition of the company.
- have a formal organizational justice policy that provides, in writing, a comprehensive grievance procedure that promotes extensive two-way communication between employee and employer.
- have a commitment to teamwork in a community or family-like environment to promote value-based homogeneity.
- focus on employee development, providing for training, self-development, job challenges and internal promotions.

ASPE is one example of organizational commitment: Its members dedicate time and resources to the betterment of their careers and the organization. ASPE's history, leadership, strategic blueprint, educational opportunities and spirit of volunteerism are all fundamental components of organizational commitment. Without this spirit, ASPE would fail to survive as the volunteer-based organization it has been for nearly 50 years.

I would like to close by sharing with you the mission statement of my own employer. I was involved in helping script this mission statement, and I believe in it wholeheartedly. If your organization doesn't have a mission statement, perhaps you could provide the impetus for creating one.

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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 via email at laguna_tim@yahoo.com.

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Circle 18 on Reader Reply Form on page 117



Code Classroom

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



Farewell and Welcome

I would like to wish the best to John Messenbrink as he moves on to another publishing venture. John was a dedicated professional. Many people leave their work at the office, but John was very involved in the industry and brought many improvements to *Plumbing Engineer* magazine and its website. I am glad we had a chance to work together.

I would also like to welcome Jim Schneider, who assumes the role of editorial director of *Plumbing Engineer*, as well as its sister publication, *Phc News*. Jim has a distinguished resume with about 15 years working in the trade publishing business. I look forward to working with Jim.

My History

I saw *Plumbing Engineer* for the first time in 1978 when I went to work at Love Frieberg consulting engineers in Fort Worth, Texas. A colleague of mine was a member of ASPE and had issues of the magazine that went back several years. I joined ASPE in 1979 and

Recently, I realized it was almost 20 years ago when I began writing for *Plumbing Engineer*. I had many discussions with Al Steele who was the author of the "Classroom" column in *Plumbing Engineer* in the 1970s and 1980s.

attended my first ASPE Convention in Atlanta in 1980. That trip was thanks to PVI Industries, who paid the airfare for the entire DFW chapter of ASPE to attend the convention. The ASPE Convention is coming up again this fall on October 27-31 at the Charlotte Convention center in Charlotte, N.C. The Plumbing Product Expo is October 29-30. You can register at www.ASPE.org/expo.

When I attended my first ASPE convention, I was like a sponge soaking up the products, literature and images of cut-away samples of the pumps, valves and equipment on display. That was 32 years ago. Recently, I realized it was almost 20 years ago when I began writing for *Plumbing Engineer*. I had many discussions with Al Steele who was the author of the "Classroom" column in *Plumbing Engineer* in the 1970s and 1980s. It was a letter from Al Steele to the ASPE delegates at the 1992 ASPE Convention that proposed ASPE combine the offices of Secretary and Treasurer and create the office of Vice President of Education. Al Steele dedicated much of his

life to educating young designers and engineers about the science of plumbing.

When Al Steele retired, the column was continued by David Sealine. He changed the name of the column to "Designers Guide." David wrote for *Plumbing Engineer* for several years in the late 1980s and early 1990s. In the Early 1990s, I had written a couple of articles for *Plumbing Engineer* and the editor at the time liked the articles.

David had to give up writing the "Designers Guide" column due to health issues and I was then asked if I would be interested in taking over the column. It was a volunteer effort back then and I thought I could do it for a year or two. That was about 19 years ago and I have worked with many great columnists and editors over the past two decades.

The code columnists have changed over the years and Pat Higgins took over in the 1990s. Pat was perfect for the code column because he was a code consultant and an active member of many of the plumbing code and product standard committees.

I started attending the model code hearings in the late 1980s. Pat was one of a couple of independent code consultants that represented various companies at code hearings to present code changes and discuss his clients' concerns. He then would report back to his clients to keep them aware of what was going on with codes and standards that might have an effect on their business. Pat was of Irish descent and would always use his Irish accent or a little Irish limerick or humor when it was appropriate during code hearing testimony.

I had dinner with Pat on a few occasions and we would discuss his proposed code changes and why he proposed them. During dinner at one of the code hearings, Pat urged me to continue my involvement with the model codes and to get involved in the plumbing standards working groups and task groups with some of the plumbing related standards developers. He urged me to get involved with the American Society of Mechanical Engineers (ASME) and the American Society of Sanitary Engineering (ASSE). He said the standards committees were loaded up with manufacturers and they needed plumbing design professionals that understood the system beyond just the product. He said plumbing contractors, plumbing designers and code officials were needed on these committees.

Pat Higgins was chairman of the American Society of Mechanical Engineers (ASME) A112 Main Committee on Plumbing Materials and Equipment. He was also a member of many plumbing product working groups and task forces with other associations including: The American Society of Sanitary Engineering (ASSE); The American Society of Testing and Materials (ASTM); The National

Continued on page 34

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Fire Protection Association (NFPA) and many more. I told him my employer would not pay for my time to attend all of the meetings and they would not pay for my travel expenses. Pat then drew closer and said “You need to give back some of your knowledge and experience to the future of the plumbing industry. You can join the working group committees and provide your comments to the drafts of the standards via e-mail. Most of the work is done via e-mail and sometimes if they meet, you can join through a conference call if the travel is too expensive. We need guys like you on these working groups.”

I told him I would look into joining some of the working groups and soon after that I joined about a dozen or so ASME plumbing product standard task groups and several ASSE working groups. It was a significant volunteer commitment and Pat expressed his appreciation when I saw him at a few industry meetings. Sadly, within a year or two, I received the news that Pat had passed away. I felt an obligation to Pat to make a personal commitment to continue to attend the code hearings and plumbing standard working group meetings when I can. Both model code hearings following Pat’s death discussed code change proposals Pat had worked on in the months before his death. The code changes came up and I realized he was not there to speak as the proponent. I had talked to Pat about the code changes over dinner in the months prior and was aware of why he wanted to mandate thermostatic mixing valves and temperature limits for bathtubs. No current code had temperature limits or thermostatic mixing valve requirements for protection for bathtubs or whirlpool bathtubs. I took it upon myself to speak on his behalf and give the reasoning for his code change proposals as he had expressed them to me. I felt like I was obligated to at least explain to the code committee my understanding of what Pat wanted to do to minimize scalding.

Like most design professionals, I do not get paid a salary to attend industry meetings and I still have to plan my vacation time around the code and standard meeting dates. Occasionally a manufacturer asks me to help them draft a code change or address a code issue. I try to help out and sometimes that offsets the travel expenses. One thing has not changed since Pat and I had that conversation many years ago: there is still a shortage of plumbing design professionals and contractors at many of the plumbing standards meetings. I often look around the room at a plumbing product standard meetings and it is not unusual for me to be the only design professional not representing a manufacturing company.

The working groups that write standards typically consist of manufacturers of a product related to the standard or by competitors that may be affected by the standard. The finished standard is then forwarded to the main standards committee. When a working group is composed mostly of manufacturers of the product for which the standard is being developed, it can lead to weak or watered down testing requirements. The main committee is a consensus group, but they are not the ones developing the material and testing requirements language. The main committee generally approves a standard, or they can send it back to the working group for revisions.

It is possible for a manufacturer to be the chairman of the committee developing the material and performance requirements for a plumbing product standard. It is also possible for meaningless tests to be included in a standard to make it appear as if the product was submitted to rigorous testing. Sometimes the pass-fail criteria are set to values that could be passed if the device was not even installed on the test apparatus. In these cases a design professional, a contractor with a little common sense or just a person with no vested interest in the product would be able to read the tests and make sure the tests in the standards are realistic and meaningful.

There needs to be more independent plumbing design professionals, contractors and code officials on the plumbing product standard working groups that do not have a vested interest in the products. On behalf of the late Pat Higgins, I ask anyone who has the time to commit to contributing to the development of the standards, especially plumbing design professionals, contractors and code officials, to please get involved in the plumbing codes and standards development process.

Recently, ASPE has increased participation at a few of these industry meetings. I urge ASPE to look for ways to fund or at least pay for the expenses of qualified design professional representatives to participate in as many of these plumbing code meetings and plumbing product standards meetings, which ultimately affect the health and safety of the public.

After Pat Higgins passed away, the editor of *Plumbing Engineer* asked if I had any suggestions for a replacement for Pat to write the code column. I thought about it and could not think of anyone who regularly attends all of the code and standard meetings and was available to write for the magazine. I suggested rotating the code column to a representative from each organization and letting them give an update on the codes and standards. That seemed to backfire when each code organization used to opportunity to bash each other, so Plan B was to move me from the “Designers Guide” column and instead write the “Code Classroom” column. A search was done to find another person to write the designers guide column; Tim Allinson was selected and he has done a great job.

Recently, I have seen the new ASPE Executive Director, Jim Kendzel, attending and participating in some of the industry meetings where in the past, there had been no official independent representative from ASPE. I am very impressed with Jim and his knowledge of the codes and standards process and I think he is a true asset to and ambassador for ASPE. I hope to see many of you in Charlotte. ■

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.

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



New 2013 edition of NFPA 13, 13R and 13D, Part 1

When you read this it is likely that the NFPA membership has voted to approve the 2013 editions of NFPA 13, 13R and 13D at the technical sessions that were held in Las Vegas on June 14 and 15. Yes, it's a new edition of NFPA 13. Jeepers! The cover of my 2010 edition hasn't even started to lose its sheen or become even slightly dog-eared.

After formal approval by the NFPA Standards Council, the documents should be publicly available later this year. There are several significant and useful changes. The bulk of the material for this column is "borrowed" from the excellent article, "13 Things You Need to Know About the 2013 Edition of NFPA 13," written by Matt Klaus and published in the May/June 2012 *NFPE Journal*. Klaus is a senior fire protection engineer and staff liaison for NFPA 13, 13R and 13D technical committees. Some points to consider:

- **Compatibility issues with CPVC.** There have been reports of stress fractures resulting in leaks and joint failures in CPVC piping used in conjunction with steel pipe (e.g., steel risers to supply CPVC piping). The culprits appear to be petroleum or hydrocarbon-based cutting oils and antimicrobial chemicals used in the installation of steel piping systems. New NFPA 13 provisions will require any cutting oils or corrosion inhibitors used in steel systems that also have CPVC pipe be proven compatible with CPVC pipe. The committee went further and prohibited the use of any material that comes in contact with CPVC piping that has not been proven compatible with CPVC. So, if you are painting that pipe a pretty bright orange, you ought to make sure the paint is compatible.

- **Freeze protection.** The antifreeze provisions that were issued as Tentative Interim Amendments have been incorporated into the standards. There are also new requirements for systems using heat trace to prevent freezing. The heat trace system must be supervised and must provide a visual indication that the system is active. The standard also now permits that a water-filled pipe may be unprotected if a heat load calculation prepared by a professional engineer confirms the pipe will not freeze.

- **Elevators and sprinklers.** There are now specific provisions that will allow the omission of sprinklers from elevator machine rooms and hoistways for all but hydraulic elevators if certain conditions are met, including compliance with the applicable building code and NFPA 72 National Fire Alarm Code. Hooray! I suppose that now my AHJ friend in Frostbite Falls will have to find some other obscure and difficult-to-accomplish provision in the standard to drive us righteous and always well-meaning consultants to madness.

- **Small bathrooms.** NFPA 13 will restrict the omission of sprinkler protection in small bathrooms (less than 55 square feet) to those within dwelling units of hotels and motels only. Apartment buildings will require sprinkler protection for dwelling unit bathrooms regardless of size.

- **Backflow preventers.** To codify something many of us have already been including in our design and installations, all 13 and 13R systems with backflow preventers must be provided with a test connection. And, in the continuing effort to thwart our friends in Frostbite Falls, NFPA 13 will now permit the backflow preventer to serve as the system control valve. Imagine that — a provision that reduces the amount of stuff required!

- **Other uses for storage sprinklers.** Prior editions of NFPA 13 were silent as to whether or not CMSA and ESFR sprinklers may be used for other than storage applications. The 2013 edition now specifically permits the use of these sprinklers in light and ordinary-hazard occupancy classifications. This will help with existing renovations where the use is changed from storage to some light or ordinary-hazard use. Apparently, some authorities were requiring replacement of CMSA or ESFR sprinklers. This edition notes that these sprinklers may not be used in extra-hazard occupancies.

- **PBD chapter for storage applications.** Chapter 21, "Alternative Sprinkler System Designs for Chapters 12 through 20," establishes a framework for a performance-based design for storage. This is an excellent advancement in the standard. The storage protection requirements in chapters 12 to 20 are based on fire testing data. It is hoped that the new chapter 21 will promote testing that can address some of the issues the standard testing facilities have been unable to address, such as sloped ceilings. I am guessing that, if this proves of value, we should expect the performance-based approach to be expanded to other uses besides storage.

- **New document title for 13R.** The title has been changed from "Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height" to "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies." Along with the change, the standard's applicability will be increased to permit the use of a 13R system in a maximum four-story (and maximum 60 feet) high residential occupancy that sits atop a noncombustible podium, such as a parking structure.

- **13D sprinkler obstructions.** NFPA 13D has included a new concept to deal with areas where sprinkler coverage may not reach due to obstructions. The standard will permit a maximum 15-square-foot Shadow Area per sprinkler. The 13 and 13R committees looked at this concept and rejected it, based on the fact that those standards already have extensive provisions dealing with obstructions.

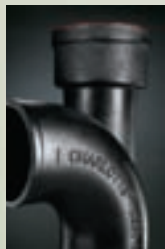
- **Residential sprinklers and sloped ceilings.** Based on research sponsored by the National Fire Protection Research Foundations, provisions have been added to NFPA 13R and 13D to identify sloped ceiling arrangements that will permit the use of two-sprinkler design for 13D and four-sprinkler design for 13R without requiring specially listed sprinklers. In previous editions, the standards only provided guidance as what to do with sloped sprinklers and that since residen-

Continued on page 38

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FPE Corner

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tial sprinklers are not listed for slope ceilings one may need to provide additional sprinklers in the design.

• What is a sprinkler system? NFPA 13 has revised the definition of a sprinkler system. The new definition reads:

“An integrated network of piping designed in accordance with fire protection engineering standards that includes a water supply source, a water control valve, a water flow alarm and a

drain. The portion of the sprinkler system above ground is a network of specifically sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are attached in a systematic pattern. The system is activated by heat from a fire and discharges water over the fire area.”

In his article, Mr. Klaus notes that this is a change that could have signif-

icant consequences. I tend to agree. He notes that floors with floor control valves are now considered as a separate system.

Next month we will continue to look at the changes contained in the 2013 editions of 13, 13D and 13R.

SFPE Notes

2012 Annual Meeting: Professional Development Conference and Exposition, October 14 – 19, 2012, at the Hyatt Regency Savannah in Savannah, Ga. For the most up-to-date information about the annual meeting, visit <http://bit.ly/KMNujc>.

NCEES is seeking licensed fire protection engineers to participate in its Fundamentals of Engineering (FE) exam committee. The FE committee is comprised of individuals from various technical disciplines who meet approximately four times per year in Clemson, S.C. to prepare and review upcoming examinations. Committee members find these meetings a rewarding experience full of intellectually challenging work and good fellowship.

Volunteers do not have to participate in every meeting, and they receive continuing education credits for time spent working with the committee. NCEES pays all travel expenses. Volunteers must be licensed professional engineers (PEs), and it is considered a conflict if the individual teaches an FE exam review course while working on the exam committee.

If you are interested, contact Chris Jelenewicz at Chris@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 at SDannaway@ssdafire.com.

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Does it conform to the specifications? Do the producers follow the necessary quality control requirements? Do they run the required tests during the manufacturing process? It's vital for buyers to have correct answers to these questions. But these days, just the word on a piece of pipe kind of makes you wonder.

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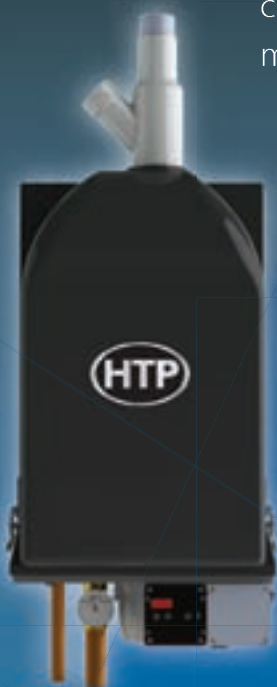
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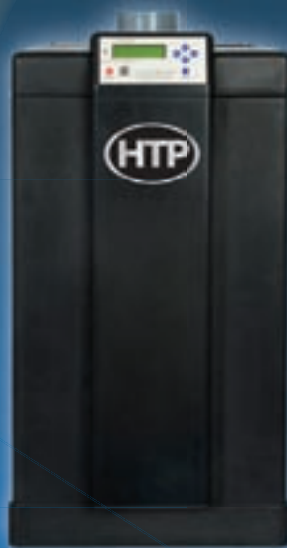
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Regulatory trends in water efficiency

The plumbing industry is slow to change. This can be a good thing, because our health and safety depend on plumbing, but it can also be frustrating when trends need to change. For example: A growing concern is that plumbing professionals design systems only for the health and safety of people at the expense of the environment. Ultimately, however, if the environment suffers, we will all suffer. We must realize that plumbing systems should protect the health and safety of the public as well as protect the environment.

Plumbing systems have evolved to the point that, on a rainy day in a typical community, the stormwater system moves millions, or even billions of gallons of rainwater miles away from people and buildings. On that same day, billions of gallons of drinking water are moved miles in the opposite direction back toward buildings and people. Still on the same day, another plumbing system is moving wastewater away from people and buildings. We call this efficiency. (See the sidebar “Don’t cross the streams.”)

The average U.S. citizen uses more than 130 gallons of drinking water and creates 130 gallons of wastewater a day. Is this an efficient system? How much do these three systems cost our communities in dollars and environmental health?

If we keep using more water, in the future we will have to design systems that handle 200 gallons or more per per-

son per day. Unfortunately, many cities are beyond their limits already, and systems cannot be extended or expanded. As a result, plumbing professionals have seen an increase in demand for plumbing systems that address these problems. Alternate, graywater and rainwater harvesting are topics we discuss every day. These systems are not specialty systems that are used in a few buildings. They are becoming more accepted and are being used as a new standard system by some.

With this growth in alternate water systems comes an increase in regulations. Following is a look at some of the regulatory trends that are currently growing in our plumbing industry.

The EPA and combined sewer overflows

More than 770 communities across the country are implementing long-term control plans to meet U.S. Environmental Protection Agency requirements to reduce the number of combined sewer overflows (CSOs) in their areas. Most communities with CSOs are located in the Northeast, the Great Lakes regions and the Pacific Northwest, affecting approximately 40 million people. (Refer to my column in the January/February 2012 issue of *Plumbing Systems & Design* for more information.)

If you live in one of these areas, you may see your local community getting ready to spend billions of dollars to fix this problem. Many municipalities are trying to solve the problem with infrastructure changes, such as adding new waste piping in the streets or installing more wastewater storage tanks. However, these solutions are sometimes impossible to build or they carry large price tags.

As an alternative, the EPA is promoting long-term control plans that include green solutions such as rainwater harvesting and green vegetative roof systems, which means that they are asking facility owners to fix some of the problems onsite. In the big picture, these systems can make sense and create a workable solution. In many cases, it is better to use rainwater onsite while reducing drinking water consumption. Local stormwater and wastewater systems are encouraging the implementation of these solutions by providing incentives for low impact development (LID) systems.

Rainwater retention/rainwater harvesting

Many site designers include rainwater retention areas that hold runoff from the site’s green spaces, parking lots, hard surfaces and roof areas in tanks or ponds, but this creates problems for building owners who want to use the area for purposes other than expensive rainwater retention systems. Now many regions are offering incentives such as reduced stormwater charges to developers who install permeable paving. This solution reduces the amount of rainwater runoff, which is a win-win for the building owner and the environment.

Don’t cross the streams

On a typical rainy day in a city, approximately:

- 17 million gallons of rainwater are taken away from people in one square mile of hard surfaces.
- 1.3 million gallons of drinking water are taken to people (based on a population of 10,000 at 130 gallons per day).
- 1.3 million gallons of wastewater are taken away from people.



Graphic from
MeGreenYouGreen.com
Artwork by C.S. Huff,
nikolettebags.com

It is amazing that we create this immense flow of water in three directions in a typical city on a typical rainy day and even more amazing to keep in mind that the water in each of these systems should not touch. Remember the famous quote from the movie “Ghostbusters” that said, “Don’t cross the streams.” Our culture sees this as the normal way of running a city, but could these flows be reduced by using less drinking water and reusing rainwater onsite?

Continued on page 44

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Another solution is a rainwater harvesting system that collects rainwater from the roof and reuses it for the building's plumbing systems, such as flush fixtures, irrigation or mechanical water makeup. For example, a facility that has cooling towers can use one or two million gallons of water per year just for the cooling tower makeup. Installing a rainwater harvesting system can offset the facility's municipal water charges for the year, because the water is not being purchased from the local water utility. It also helps

Urinals: Water or waterless?

In the last decade, urinals have become a symbol of green building water efficiency. Urinals, however, are shy plumbing fixtures and do not do well with all of the attention. Many people shouted, "Eureka!" when they realized that we do not need to use a gallon of water to flush a urinal. In fact, no water is needed at all with waterless urinals, which have been around for years. It was a simple solution: Just install waterless urinals and millions or even billions of gallons of water could be saved.

They are perfect, because they are inexpensive and easy to install. The public, building owners, regulatory agencies and the design industry all jumped on board. In many cases, it was left for the plumbing engineer to work out the details; it was not long before plumbing engineers realized that too many factors were outside of their control. How would they be installed? Could any plumber install them properly? What about housekeeping? The list of concerns grew.

Urinals of any type are not perfect. They are all installed differently and, many times, incorrectly. They stop up all the time because they are not installed or maintained properly. Some operations staff cleaned out the drainlines of some urinals for years, never knowing that they were not installed properly. In many cases these issues never change.

One problem we have now is that the plumbing industry thinks only two choices are available for urinals: one gallon per flush and waterless. I have seen many large building owners fight the installation of waterless urinals in favor of the one-gallon fixtures. Luckily, there is a middle ground. Many good fixtures use 0.5 gallon and even 0.125 gallon per flush.

Plumbing engineers need to go back to the basics when designing systems with urinals, including these points:

- Know the issues between one gallon, 0.5 gallon, 0.125 gallon and waterless fixtures.
- Remember that urinals use less water than water closets. In some small toilet rooms, a urinal can be installed next to a water closet, even when not required by code.
- All urinals should be installed, operated and cleaned properly.

Urinals are shy fixtures and were never meant to be the symbol of a green building, but they are very beneficial in helping a building reduce water use.

reduce sewer charges. An added bonus to the owner is the smaller size of the rainwater retention area, which gives the owner more site area to use and reduces site costs.

In CSO areas, the local government may offer financial incentives to offset the cost of installing a rainwater harvesting system. This can be a win for the owner because it reduces both construction costs by reducing the size of the retention area and operations costs by reducing municipal water usage. It benefits the city, because the system reduces the demand on stormwater and water distribution systems. It is a benefit to the environment by reducing stormwater flows, reducing drinking water withdrawals from natural water sources and reducing energy use.

Regulatory requirements are constantly changing, so you must always check with the local regulatory agency before starting a project. Here is a short list of some of the items they might require:

- A method to drain the rainwater cistern when the water is not being used — For example, if rainwater is used for cooling tower makeup, the facility may need to drain the rainwater tank mechanically in the winter when the tower is not in use.
- A method to drain the cistern during back-to-back storm events — Some manufacturers offer controls that follow biometric atmospheric pressures and drain tanks between two storm events.
- Underground tank installation standards — This can include nontoxic interior surfaces, burial standards or materials.
- Nontoxic or safe roof materials — Water used in buildings can off-gas harmful chemicals collected from roofs.
- First flush diversion
- Water treatment
- Testing quality standards and schedules
- Monitoring and metering standards
- Cross-connection controls

Also, determine whether the system will be required to meet NSF/ANSI 350: On-site Residential and Commercial Reuse Treatment Systems, and if it needs to be covered by the facility's insurance plan.

Green roofs

Some regulatory agencies are encouraging the installation of green vegetative roofs with incentives because of the benefits that green roofs offer municipal storm water systems. Green roofs include plants and growth media that collect the first few inches of rainfall. The plants then transform the water through evapotranspiration into the atmosphere. The growth media also can act as a filter to clean the rainwater as it passes through; as a result the stormwater flowing into the municipal system is a higher quality.

Again, you must review local regulatory agency requirements before starting the project. Following are some of the items that will affect the building's plumbing system design:

- Irrigation system — Some green roofs require constant irrigation. If so, a rainwater harvesting system can be used to provide irrigation to the plants.
- Temporary irrigation — Most green certifications such



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Sustainable Design

Continued from page 44

as LEED discourage permanent irrigation systems. However, they will allow a temporary irrigation system that will be used during the first year until the plants are established.

- Roof drain and plant system drainage interconnections
- Access for fire protection staff during a fire event
- Hose connections for periodic roof washdown

Other regulations and standards

Plumbing designers should learn about all of the industry standards that relate to their projects, not just the local regulatory agency requirements. For example, ANSI/ASHRAE/USGBC/IES 189.1: Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings includes standards for water systems. Other industry standards require the installation of water meters for the different systems in a facility that can

be connected to a data monitoring and storage system. These standards require the operations team to collect data at preset times.

Water-free waste systems

Another trend is the use of waste systems that do not require water. Most waste systems use water to transport the waste from one point to another, but is this the best way to transport and treat waste? One alternative is the way waste has been treated naturally for thousands of years: composting.

Some composting systems can collect the nutrients in waste and use them where they are needed, such as for landscaping. Like any waste system, a composting system must be installed and maintained properly. If these systems are used, they should meet a standard such as NSF 41: Non-Liquid Saturated Treatment Systems. According to NSF, "Standard 41 is for treatment systems that do not utilize a

liquid-saturated media as a primary means of storing or treating human excreta or human excreta mixed with other organic household materials. These would include composting toilets and similar treatment technologies."

While composting systems may not be a viable option in some areas today, they are an important consideration as we look to the future of net-zero water and waste systems. They are very simple when compared to our modern complex municipal systems.

Conclusion

The future is here. Rainwater harvesting, graywater systems, and green vegetative roofs are no longer niche markets. We all need to know how to design safe plumbing systems to support them. ■

Winston Huff, CPD, LEED AP BD+C, is a project manager, plumbing fire protection designer and sustainable coordinator with Smith Seckman Reed Consulting Engineers in Nashville, Tenn. He serves as an ASPE representative on the ICC Green Construction, Energy and Water Code Development Committee and is on the U.S. Green Building Council's Water Efficiency Technical Advisory Group. He was the founding editor of Life Support and Biosphere Science and has served as its editor-in-chief. He also is editor of Me Green You Green (megreenyougreen.com), a LEED credit database.

Correction: Last month's article referred to the next edition of LEED as "LEED 2012," which was scheduled for release after USGBC members voted later this year. The term "LEED 2012" was a working title used during development, but the USGBC has since changed the title to "LEED V4.0" and delayed issue until 2013. The intent of last month's column was to update readers on the new credits under development; the final issue may be different.

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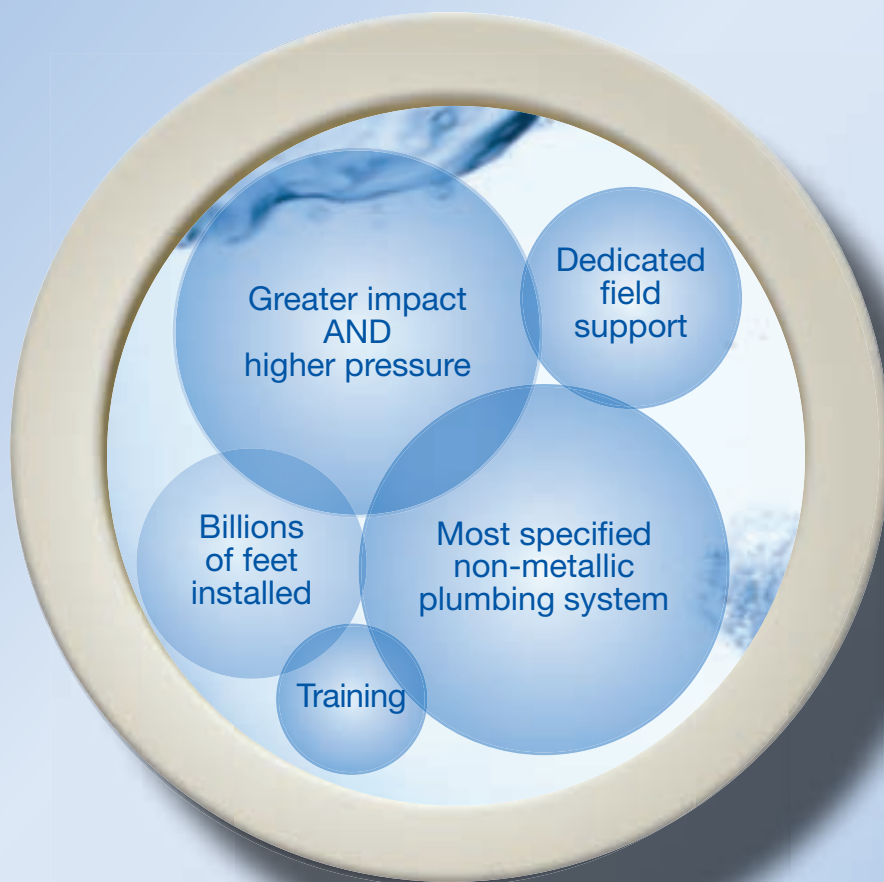
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Bristol's Six Principles for Good Solar Hydronic Design

#48: Six things you should know about NSRC cooling

Night Sky Radiant Cooling (NSRC) has been something of a lost art, even though it has been documented and discussed by HVAC and solar heating professionals for many decades. For example, the 1993 ASHRAE handbook of fundamentals mentions it ("nocturnal radiative cooling") and provides a map of the U.S. showing cooling potential around the country under typical comfort-cooling conditions.

Like a ball player sitting on the sidelines, this technology has just been waiting to be called into the game. The hydronic solar combisystems we have been discussing in this column provide an ideal playing field for this technology to "plug in" and perform. Using this cooling resource is as simple as turning a pump on in the evening and off in the morning. Because it is so easy, I have been including NSRC cooling capability into virtually every flat plate solar heating system I have designed for the past five years, and it is built into every home heating control system that we make here at SolarLogic. Its seasonal operation can be turned on or off by the user and is part of the standard room thermostat function.

Because this technology has been largely overlooked in the past, it has not been widely deployed, and its advantages and limitations are not always well understood. So, here is a list of six things that you should know about NSRC before you decide to include it in your next solar combisystem installation.

1. Flat plate solar panels can be used for cooling.

This fact has been widely known by solar heating designers dating back at least to the 1950s. In fact, this is probably the reason that the solar differential thermostat (dT) was invented in the first place. The most basic function of a dT thermostat is to prevent the solar circulator from running when the heat storage (tank) is warmer than the solar collector. If the water tank is warm and the collector is cool, heat can be rapidly removed from the tank and lost to the great outdoors (mostly by thermal radiation from the face of the collector to the sky) simply by running the solar pump. The more intelligent dT controllers today use this condition as a cooling function to automatically cool the tank when the system is in danger of overheating.

Generally, any flat plate solar panel used as a heat collector, glazed or unglazed, may be used to dissipate heat at night by thermal radiation. This is not true for vacuum tube collectors that use heat pipe technology inside the glass tubes. These cannot be used for cooling, since they are unable to transfer heat "in reverse."

Glazed solar collectors, seen in Figure 48-1, tend to produce twice as much heat as unglazed panels of the same size and can produce higher temperatures in colder climates. Unglazed panels, seen in Figure 48-2, tend to produce twice as much cooling as glazed panels but do not produce high temperatures and may not produce any use-



ful heat in very cold weather when used as heat collectors. In the installation seen in Figure 48-2, we have used one bank of glazed panels for heat (not shown) and another bank of unglazed horizontal panels for cooling only in summer.

2. NSRC is not complicated or high tech.

People often assume that NSRC is some other kind of "solar cooling" that requires PV panels, compressors, heat engines, high temperature concentrators or refrigeration fluids such as Freon or ammonia. Nothing could be further from the truth. The process is deceptively simple.

Warm hydronic fluid from the building is pumped through flat plate solar panels at night and is cooled by radiant heat loss to the night sky. This cool fluid is circulated through the building to absorb heat and then back to the panels to be cooled. It is a very subtle means of cooling, but over the ten hours or so overnight hours a large amount of cooling can be accomplished.

3. It makes better use of components you may already have.

In our solar combisystems we typically already have flat plate solar panels and masonry warm floors installed for space heating. But the solar panels are also capable of rejecting heat by thermal radiation to the night sky, and the masonry floors have a significant thermal storage capacity that can be chilled as well as heated. For only the cost of running the solar circulator pumps at night, we can use the components we already have to provide supplemental cooling.

NSRC provides an intermittent cooling source in the same way that solar heat is an intermittent heating source. So, the objective is similar; store it when it is available to use it later when you need it. It makes sense to use what you already have any time there are real benefits to be gained. This has proven to be an added selling point when someone is considering the pros and cons of installing a solar combisystem.

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4. It's less like an air conditioner, more like an economizer cycle.

An "economizer cycle" is often built into the controls of conventional air conditioning systems. This allows cool outdoor air to be circulated directly through the air ducts at night or whenever the outdoor air is cool enough to allow the conventional air conditioner equipment to be shut off. Also, some building control systems allow cool night ventilation to "pre-cool" the mass of the building to prevent, or at least delay, the need for the conventional air conditioner during the following day.

Using NSRC, you can do with hydronics what is commonly done with cool night air as described above. Radiantly cooled hydronic fluid is circulated through the concrete masonry radiant floors at night, absorbing heat



from the mass of the floor and storing "coolth" for the next day. Using the natural time delay inherent in a mass floor, NSRC offsets the need for conventional cooling, even though it may not always eliminate it.

Cooling the concrete mass causes the surface of the floor to become cooler than the other surfaces in the room. This causes the mean radiant temperature (MRT) of the room to drop. So, even though we are not chilling the room air directly, the occupant senses a cooling effect caused by the lower MRT. Controls must be provided to keep the temperatures in each room within the human comfort range, prevent conflict between heating and cooling jobs and also, in some locations, to prevent dew-point condensation from occurring.

5. Radiant cooling can be utilized in non-desert locations.

It is often (wrongly) assumed that NSRC is similar to evaporative cooling and will work only in a desert climate with clear skies. It is true that humidity and clouds tend to reduce the radiant cooling capability, but will not stop it completely in many U.S. climates. NSRC comfort cooling does not work when night conditions are both very hot and have very high humidity (like Miami in summer) but does provide comfort cooling under a surprisingly wide range of climate conditions. For example, estimates done in a previous column (#24 Summer 2010) show that during the hottest time of the year, the NSRC cooling available in Los Angeles is about twice that of New York City and about 20 percent less than that of Denver. So, to gain the same amount of cooling in each climate you would need to double the size of the panel in New York and use a

slightly smaller panel in Denver. This is not so different from the way that solar panels are sized in those climates for heating.

Keep in mind that we have been talking so far only about comfort cooling. NSRC panels can also be used to cool process fluid, electronic equipment and other non-human applications. When the need for cooling is at a higher temperature or can allow higher temperature swings, NSRC becomes even more effective and useful throughout more of the year.

6. There are real efficiency advantages.

The electric efficiency of a NSRC system is very high. The coefficient of performance (COP) of these systems is at least twice that of a conventional air conditioner. The COP in cooling mode for the system seen in Figure 48-1, for example, was estimated at 5.56 on a hot day in June and can be twice as high on hot days in the spring or fall. In arid climates, there is a much needed water savings when compared to evaporative coolers and also water savings at the electric power plant. As an added bonus, when NSRC cooling prevents any conventional electrical or combustion fuel equipment from running, there is real savings in carbon emissions.

Final notes

These articles are targeted toward residential and 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 and 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.

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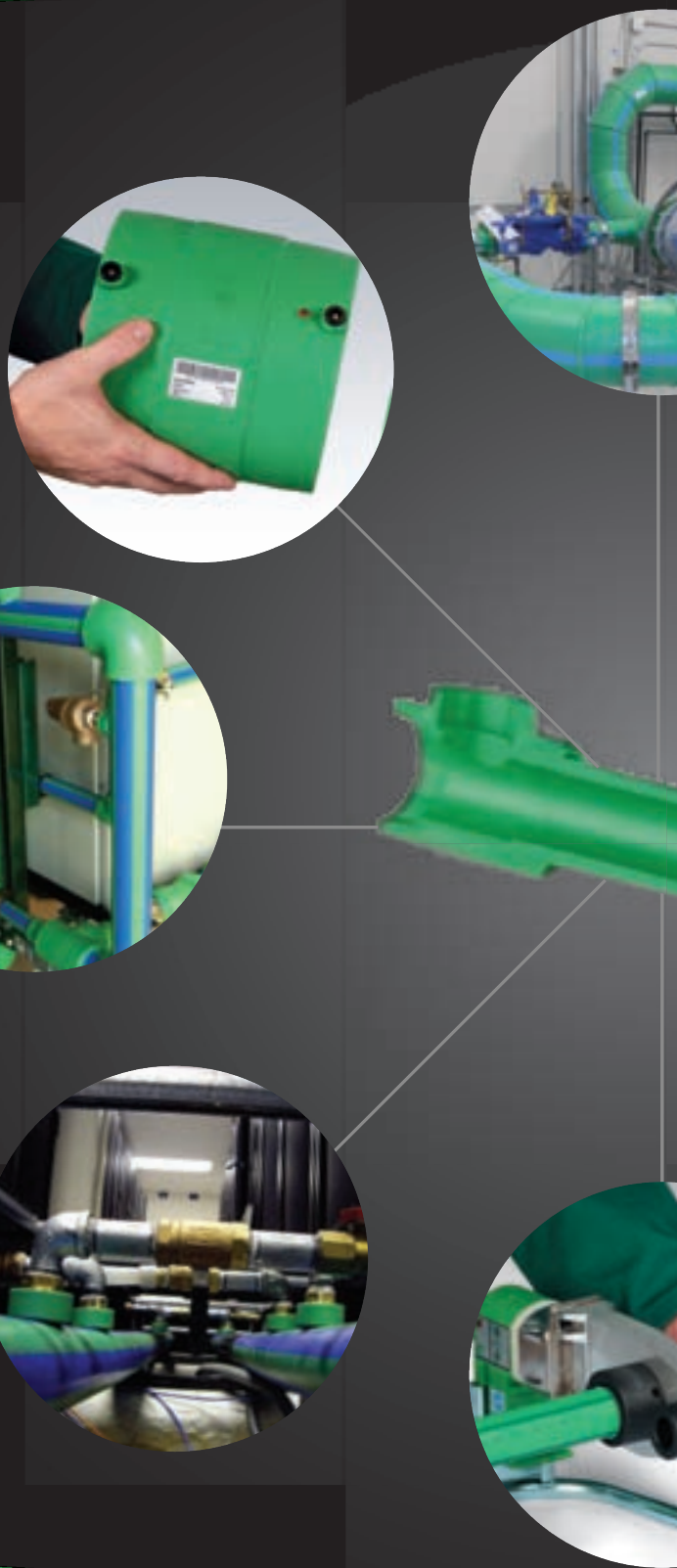
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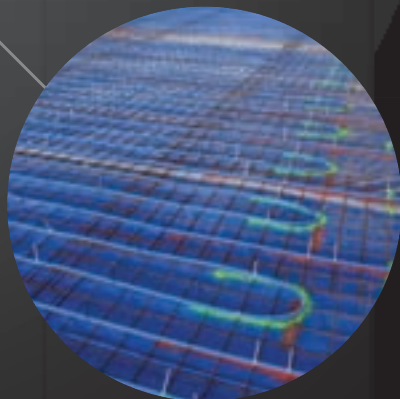
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STUDIO 804

Futuristically Green

University of Kansas professor Dan Rockhill and his students design KU's Center for Design Research building.

When a group of energetic graduate students is led by an architectural mastermind and backed by the efforts of 100 manufacturers, a recipe for building green is perfected. Recently, education, art, architecture, engineering, energy efficiency and an eclectic collection of building materials came together under one roof at the University of Kansas (KU).

Distinguished professor Dan Rockhill and the 23 students in the 2010 – 2011 graduate design/build program, Studio 804, began designing the University of Kansas's new Center for Design Research (CDR) only nine months before it was finished in July of 2011. The 1,820-square-foot building is pending not only LEED Platinum certification, but also recognition as the nation's second passive-certified commercial building.

The project strays from what Studio 804 usually accomplishes. Single family homes have, for the most part, been the focus of the program. "I do whatever comes through the door," Rockhill said. "But it needs to be a holistic experience, from idea to completion." The



The 1,820-square-foot building is pending not only LEED Platinum certification, but also recognition as the nation's second passive-certified commercial building.

low impact theme for the CDR fits in nicely with Studio 804's commitment to sustainability.

"The design brief was pretty simple," says Gregory Thomas, CDR director and a design professor at KU. "It had to serve a dual purpose, as a meeting and presentation venue and as a working laboratory. It also had to be a place that's shared with the public as a source of information about sustainability."

Stone, glass and mass

Inside and out, two materials appear continuously. Various uses of stone and glass are accented by steel and concrete. Outside, dry-stacked limestone from quarries across Kansas makes up the first layer of the tight building envelope. Inside, sophisticated monitoring equipment displays the building's real-time energy performance.

In the conference area, a living "green wall" accents one side of the room. Covered in fern and irrigated by the building's BRAE® rainwater harvesting system, the wall improves indoor air quality and organically offsets the stark, elemental architecture. "We often get comments about how fresh the air in the room is," said Rockhill.

Although indoor foliage cover is unusual, the opposite wall also takes more than a second glance to appreciate. A 10-inch-thick trombe wall sits 2 1/2 feet behind an electrochromic glass curtain-wall, which makes up nearly the entire southern facade. Six inches of sand-filled block, sandwiched between two inches of limestone on either side, make up the wall. Thick sheets of laminated glass are laid horizontally between every other course of concrete block. Light from the glass wall penetrates the trombe wall, naturally illuminating the conference area. The solar-thermal mass stored in the wall provides much of the building's heat during the winter months.

"We couldn't do this based on the university's shoe-string budget," said Rockhill. More than 100 companies sponsored or donated to the project. Much of what wasn't donated was made from scratch, including the plate

Continued on page 58

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steel floor and the limestone exterior.”

Rainwater collection

One facet of the project that scored many LEED points was a BRAE rainwater harvesting system. The donated Brae system supplies water to flush toilets and keeps the

green wall lush. The system collects rainwater from the building's flat roof. From there, it's filtered and stored in an underground, 1,200-gallon storage tank.

“The storage tank is equipped with a pressure transducer,” said Eddie Van Giesen, policy coordinator at BRAE. “The device senses the

level of water in the tank and gives a digital readout inside the building. If they're experiencing a dry spell and the rainwater system can't produce enough water for the green wall and toilets, the transducer will communicate this to a solenoid valve, allowing it to open and draw makeup water from the local water utility.

Four times a day, a high efficiency, one-horsepower pump moves water from the rainwater cistern to the green wall. Ten different species of fern cover the 12 x 34-foot wall, which has more than 10,000 plants. The amount of water that the wall consumes depends on lighting and temperature in the room; in an average month it uses 250 gallons.

In addition to the tank and transducer, BRAE supplied four separate leaf/debris filters, and a rainwater pump with pump controller. The students installed the entire system, calling Van Giesen whenever a question came up.

High performance HVAC

“This isn't the first time we've worked with Rockhill and Studio 804,” said Roger Scott, owner of Scott Temperature in Lawrence, Kansas. The 10-technician heating and cooling firm has assisted student efforts many times over the past decade. This time, their focus was ventilation and ductwork.

An ERV was installed to provide energy efficient ventilation. Frequent air changes are needed for the best indoor air quality, and it's guilt-free at the CDR. Stale air moves, but Btus remain where they are. The ERV also controls humidity. To help temper exchange air, the ERV has a small heat exchanger connected to a ground loop. A 120-foot loop of ¾-inch PEX serves as the exchange medium. Scott Temperature completed the sheet metal work for the ERV and installed the ductless split system.

“It's always an adventure working with Studio 804,” said Scott. “You never know what kind of equipment they'll have on hand.”

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Green

Continued from page 58

lated structure. The trombe wall serves as the main source of Btus during much of the winter.

Extra credit

To achieve Passive status, it took more than lots of insulation and a living wall. The rainwater harvesting system was a gigantic leap in the right direction, but even more was needed. Southwest Wind Power provided a 35-foot high, Skystream wind turbine to provide up to 400 kW per month. Electronic controls provide performance data inside the building.

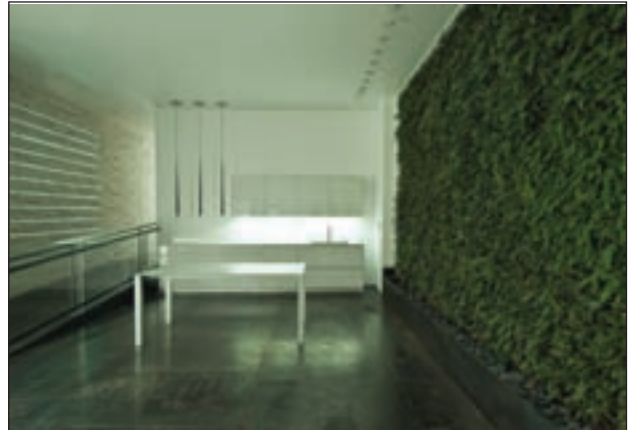
"The white, EPDM synthetic rubber roof is shared by the rainwater collection system, 33 Yingli photovoltaic panels and sedum plants," said Melissa Schoch, architecture graduate student and the official hostess of the CDR. Behind the building is a charging station for two electric cars, capitalizing on the 7.4 kWh output of the impressive solar array. A tankless water heater located near the bathrooms meets the small domestic demand.

Joist and stud cavities are filled with blown cellulose insulation. "We kept the envelope clean and taut," Rockhill says. "In order to maximize insulation and prevent thermal leaks, there's not any wiring in the walls."

The project has garnered national and international recognition. Rockhill and Studio 804 received the 2011 Acknowledgement Prize by the Holcim Foundation for

Sustainable Construction.

Projects like the CDR challenge the way building materials are applied to modern structures. Pushing the (building) envelope fosters the development of new products and methods, while instilling a sense of responsibility and environmental awareness in the next generation of architects, engineers and contractors. ■



The project has garnered national and international recognition. Rockhill and Studio 804 received the 2011 Acknowledgement Prize by the Holcim Foundation for Sustainable Construction.



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MP-500



MP-500-12V

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MPB-500



MPB-500-12V

This electronic floor drain trap priming device is available in two models: The MP-500 provides the plumber with an air-gap and a timer that may be installed up to six feet away. The MPB-500 provides the same equipment assembled in a NEMA #1 box ready to install. Also available is the MPB-500 12V battery operated system.



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Rev 01/09



EPA to Revise Underground Storage Tank Regulations

By Chuck Walker

The EPA is proposing revisions to the Code of Federal Regulations (CFR) to bring the operation of Underground Storage Tanks (UST) into accordance with provisions of the Energy Policy Act of 2005, and the Solid Waste Disposal Act. The EPA regulates some 600,000 Underground Storage Tanks (UST) in this country. The release of hazardous liquids from underground tanks is less common these days, but releases from piping, spills and overfills from delivery operations are more common.

Spills at the dispenser are one of the most common sources of releases. Recent studies across 27 states have found approximately 7,000 releases or spills occur each year, due to lack of proper maintenance and improper operation.

Previously some existing installations were granted variances from compliance, but the new regulations will bring all facilities up to the new standards:

1. Install secondary containment and interstitial monitoring for all (including petroleum) new and replaced tanks and piping (except safe suction piping and piping associated with field-constructed tanks and airport hydrant systems).

2. Under-dispenser containment for all new dispenser systems. Walkthrough inspections — owners and operators conduct.

3. Walkthrough inspections — owners and operators conduct monthly walk through inspections, which look at spill prevention equipment, sumps and dispenser cabinets, monitoring/observation wells, cathodic protection equipment and release detection equipment.

4. Spill prevention equipment — owners and operators test annually for liquid tightness or use a double-walled spill bucket with continuous interstitial monitoring.

5. Overfill prevention equipment — owners and opera-

Continued on page 66

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tors test every three years to ensure equipment is set to activate at the appropriate level in the tank and will activate when regulated substances reach that height.

6. Secondary containment areas — owners and operators test every three years to ensure the interstitial area has integrity or use specific continuous monitoring methods.

7. Release detection equipment (including LLDs) — owners and operators test annually to ensure equipment is operating properly.

8. Originally, UST systems storing fuel for use by emergency power generators were deferred from providing release detection [§ 280.10(d)]. The new EPA requirements removes deferrals and requires owners and operators to perform release detection. (The 1988 UST regulations deferred emergency generator tanks because at that time technology was not available to monitor remote sites. The technology is now available to monitor and detect releases. These systems have releases similar to other regulated UST systems and need to have release detection monitoring.)

Those interested in owner/operator training requirements are referred to the EPA guidelines at set forth on the EPA notice of proposed rule making published in the Federal Register. 40 CFR parts 280 and 281.

9. Field-constructed tanks (FCT), airport hydrant systems (AHS) and wastewater treatment tank systems deferred from subparts B, C, D, E, G and H [280.10(c)(1), (4), and (5)] : EPA removes deferral and regulates FCT, AHS, and wastewater treatment tank systems. Owners and operators may use alternative release detection options for FCT and AHS systems. EPA continues to defer above-ground tanks associated with FCT and AHS.

10. EPA defines airport hydrant fuel distribution system. Implementation: three years for subparts B (except notification), C and D (except periodic bulk piping pressure testing which has a phase in over seven years) and immediate for sub parts E, G, H and notification [Sections IV.C.2, 3, and 4].

11. EPA eliminates flow restrictors in vent lines as an option for owners and operators to meet the overfill prevention equipment requirement for newly installed UST systems and when flow restrictors in vent lines are replaced. This technology has several inherent weaknesses and can result in tanks being over pressurized. This proposed change no longer allows flow restrictors in vent lines for new and replaced systems. Owners and operators must use one of the other overfill prevention methods listed in 40 CFR part 280.

12. Permanently close tanks using internal lining as the sole method of corrosion protection, if the internal lining fails the periodic inspection and cannot be repaired according to a code of practice. Implementation: immediately.

13. Various reporting and notification requirements.

The EPA will also begin enforcing the existing Energy Policy Act of 2005, SEC 1527 Delivery Prohibition which states:

“...all installations deemed in violation of the proposed UST regulations, will be prohibited from delivery to, deposit into, or accept a regulated substance into an underground storage tank at a facility which has been identified by the Administration or a State implementing agency to be ineligible for such delivery, deposit, or acceptance.”

The EPA is proposing these new regulations under the authority of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1970.

These revised regulations will affect the following industries: Retail Motor Fuel; Commercial (wholesale trade, retail trade, accommodation, and food services); Institutional (hospitals only); Manufacturing; Transportation (air, water, truck, transit, pipeline, and airport operations); Communications and Utilities (wired telecommunications carriers, electric power generation, transmission, 5171, 2211, and distribution), and Agriculture(crop and animal production).

The changes will improve environmental protection and have been designed to minimize required retrofit costs to owners, with an emphasis on properly operating and maintaining equipment. The 1988 UST regulation provided spill, overfill and release detection equipment. Required spill prevention equipment was to capture drips and spills when the delivery hose was disconnected, but did not require periodic testing of that equipment.

New regulations will require that UST equipment is operated and maintained properly. The changes will also reflect advances in technology to detect releases from deferred UST systems.

The new proposed regulations will not change the Owner/Operator's responsibilities and liabilities as set forth in the original 1988 UST, but shall add three new classes of Operators: A, B and C, which will require training and certification to ensure that the system is properly maintained and operated. The training program will be developed by each state and will be performed by an independent testing service. Owner/Operator Testing shall be phased in over a 3 year period with the oldest UST systems required to be in compliance first.

Those interested in owner/operator training requirements are referred to the EPA guidelines at set forth on the EPA notice of proposed rule making published in the Federal Register. 40 CFR parts 280 and 281.

For more information, read “EPA Proposal Revises Underground Storage Tank Regulations” online at www.epa.gov/oust/fedlaws/proposedregs.html. ■

Chuck Walker has worked in Southern California as a project manager and project engineer for more than 20 years. He has a Certificate In Plumbing Engineering and a Certificate in Fire Protection In Building Construction, both from UCLA Extension University. He is presently studying business communication at Cal State University in Southern California.



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THE MIXING VALVE :: THE HEART OF TEMPERED WATER

By Casey Hayes
Director of Haws Integrated™
Haws Corporation



Concern for worker safety has driven many companies to include tempered water as a core requirement for their emergency eye/face wash and shower equipment. The use of "tepid" water easily allows for the full 15 minutes of eye/face wash or shower exposure required, without risking hypothermia.

In 2009, the International Safety Equipment Association (ISEA) revised the Z358.1 standard to include a delivered water temperature range of 60° - 100°F. Adhering to this temperature range protects accident victims from hypothermia on the lower end and from eye tissue damage to scalding on the higher end.



Tempered water blending systems generally consist of three major components: a hot water storage tank, a heater, and a blending valve. While emergency wash systems often require all of these components in order to meet tempered water requirements, the simple presence of these

components does not ensure safety compliance. The system must be assessed in its entirety to determine if overall performance requirements have been satisfied. ANSI compliance is sought and granted based on specific pressure and flow ranges at the water usage point: an ANSI-compliant shower may deliver non-compliant performance if the upstream tempering subsystem utilizes improperly sized components.

An industrial high-volume mixing valve is the heart of tempered water delivery systems; the mixing valve ensures that the safety shower and eye/face wash units receive water at the required temperature under a range of operating conditions. Safety equipment manufacturers that deliver complete

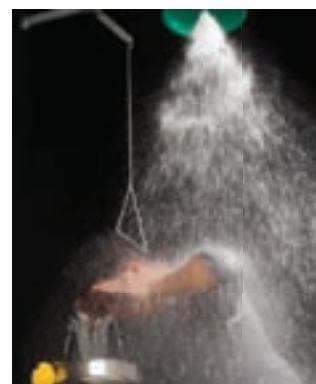


safety systems are in the best position to design appropriate mixing valves. Experience specifying, designing, engineering, and implementing full-scale safety systems provides deep and realistic understanding of our equipment attributes and specific flow requirements. Knowing applied flow requirements for each individual unit and potential peak-flow demand for the overall system is essential for designing an efficient and reliable mixing valve.

Tempering water for emergency equipment requires more functionality than is built into most mixing valves. Most mixing valves are single-function valves rather than purpose-built valve systems. Deep emergency equipment knowledge combined with system operating experience enables Haws to assess if a tempered water system under consideration meets all of the necessary requirements. Simply stated, there are two things to look for in a mixing valve system:

1. The mixing valve system must have a full-flow bypass to compensate for hot water loss or thermostat failure.
2. The mixing valve system must provide for 100% hot water shutoff, in the event of cold water supply failure.

Combined usage requirements of each safety shower and eye/face wash unit throughout the system must be measured when sizing and selecting tempered water subsystem components.



In designing emergency equipment systems, we sincerely hope they are never needed. However, in the event that their use becomes necessary, we must make certain that the system will deliver the required volume of tempered water safely and adequately.

Casey Hayes is the Director of Haws Integrated, located in Sparks, Nevada. He can be reached at 775.353.8320 or casey@hawsco.com.

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Circle 41 on Reader Reply Form on page 117

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Valve tempers water to shower & eyewashes up to 78 GPM



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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

Corporate Profile

The ATS Story

Tools requested by, and built for, the specification community.

If you ask a plumbing designer or specification writer what is it like to prepare a plumbing specification at the 11th hour, they will likely say, “If I don’t have time, I copy and paste from an old job and deal with the mistakes later or on addendum.”

Early in his career as a plumbing designer, specification writer and project manager, Lou Petro, founder of Allied Technical Services (ATS), discovered that the process of packaging specifications can be dreadfully time consuming and tedious. Putting a complete and accurate plumbing specification together has always posed many challenges. From making changes on addendum to using out-of-date office masters, many designers who build specifications “the old way” run into numerous setbacks. These insights and experiences inspired Lou to develop plumbing specification tools that have since helped thousands of engineers and plumbing designers streamline the plumbing specification process.

In 1969, with the blessing of Ted Crossey, Lou Petro left Crossey Engineering and launched ATS with one overriding goal in mind: to provide the Metro Toronto design community with the most comprehensive plumbing specification service on the market. Through the sponsorship of the leading industry manufacturers, Lou was able to focus his efforts on providing plumbing specification support to other commercial plumbing design professionals via face-to-face meetings and over the telephone.

Pioneering change with the ATS Manual, a comprehensive tool that provided a code compliant and standardized Master Plumbing specification to the industry, Lou was able to help other engineers overcome many of the difficulties encountered in building their plumbing specification packages. Armed with a mechanical engineering background, Lou truly understood the hurdles that engineers experienced on their projects and committed himself to solving them by making the specification process easier.

Following the success of the Manual and ATS’s exceptional customer service, ATS expanded its coverage area over the next 15 years to span all of the greater Toronto area, with further expansion naturally occurring as engineers and designers using ATS’s spec services moved to other areas. The ATS Manual was physically limiting, however, as it was becoming difficult to organize and serve clients from around the country with varying needs and building codes.

The evolution of the ATS Manual

Realizing the potential of taking ATS online, President Bill Petro leveraged the power of the Internet through engineering, software development and marketing to develop ATS as the community knows it today. Pioneering the transformation of the ATS Manual into an online plumbing specification system, ATS’s Spec System and Services focus on connecting the mechanical design community’s commercial



building requirements with leading manufacturers’ product information.

The ATS Spec system now allows engineers and designers to conveniently review manufacturers’ product details in order to build a complete and accurate plumbing specification package in a fraction of the time. Packages can now be further customized to include drawings, written specs, fixture schedules, design details (including 2D, 3D BIM and combined 3D BIM families), budget pricing and much more. Depending on the design firm’s requirements, designers can access a variety of downloadable formats that can be shared, saved and printed directly from ATS Spec.

The move from a traditionally local service to an online platform has not only addressed the setbacks many designers faced at the 11th hour, but has also evolved to address the concerns of interoperability between the various stakeholders involved with a building’s specific plumbing package.

With the recent growth of construction technology and the green movement, specifications and available product selections are now required to be more diverse. Engineers are expected to provide innovative solutions to reduce environmental impact and encourage sustainable practices. Rainwater harvesting, BIM and LEED certification are all relevant topics that ATS has continued to address through the implementation of tools such as a LEED contribution calculator, system schematics and algorithms for sizing and packaging various plumbing equipment. By doing so, ATS provides tools and solutions requested by and built for the specification community.

Continued on page 72

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Profile

Continued from page 70

In conjunction with these advancements, ATS has recently introduced a new “rule-based” system and specification building selection process. With over five million spec combinations and data packages populating the first version of their systems, functionality was impacted. More than 1,000 engineers per day would query all of this data, which slowed down response time. The rule-based system was developed to deliver an improved user experience and provide the freedom to specify all possible and compatible product combinations most suited to their application.

The ATS Spec System now also accounts for major building code nuances and enables users to further understand the “whys” of specifying certain products. For example, “What is a MaP test rating?” and “Why is a stainless steel toilet recommended for a bariatric application?”

Why designers use ATS

There are many reasons why design professionals use ATS. Some of the major benefits include:

Time-saving tools: ATS Spec tools such as copy, edit, direct e-mail, design details, LEED contribution calculators, budget pricing and various system schematic designs are available to assist with the specification process.

Complete and customized plumbing specifications packages: Upon building a plumbing specification with ATS, users can conveniently download their specifications

in multiple formats, including plumbing fixture schedules, long spec with drawings, CSI, Division 22 and many more. The advantage with these packages is that no additional text editing is required, and they can be further customized to include items such as a firm’s logo and contact information.

BIM spec services: To help engineers save even more time, ATS has expanded their service offerings to include all available BIM models for products specified in projects. With an extensive library of over 10,000 combined 3D BIM families and new combinations added daily, there is a BIM file for every application and project. By creating combined 3D BIM families, ATS’s BIM files are nested with all the components and connections required to be conveniently downloaded and dropped right into a BIM project (i.e.: toilet fixture nested with the appropriate carrier, toilet seat and flush valve).

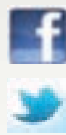
ATS is also pioneering the new standard for quality BIM content, by creating all files from scratch in Revit in order to minimize lines and unnecessary detail while maintaining



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manufacturer family integrity. The result is greater usability and smaller file sizes. Detailed BIM models can also be created on demand for any ATS sponsor's products that are currently unavailable on their systems, through the "ATS BIM On-Demand Specification Service." This longstanding commitment to service in the design industry ensures that any BIM designer can receive the product content support they need. In addition, all ATS BIM files are available free of charge.

Complete and accurate master or project specifications: As soon as a product manufacturer makes a product change, designers using ATS Spec are notified of the specification update to their project. This means that there are no more out-of-date plumbing spec masters or office standard specifications, and that specifiers no longer have to deal with mistakes, discontinuances and out-of-date product specifications on addendum.

Management and administration capabilities: To provide greater control and security, ATS has also introduced firm and user management features with permissions settings to handle intercompany users and projects, including the ability to view design details, copy and edit specs or share specs directly via email.

ATS today and into the future

With a free-to-use model sponsored by the leading manu-

facturers of the plumbing industry, the ATS Spec online specification system is an invaluable tool to save time and money. ATS has continued to expand its service offerings and include new product categories to allow greater flexibility and a wider selection of equipment during the specification process. This gives users more options and flexibility.

Moving forward, ATS is currently developing the next evolution of its specification platform, the Visual Spec Builder (VSB). Set to launch in the third quarter of 2012, VSB seeks to revolutionize the specification process by allowing users to visually create complete, fully customized and accurate specifications in real time. VSB gives designers the ability to see their color palettes, fixtures, fittings and product selection decisions instantly come to life. All products specified are building code compliant and are complete with budget pricing, written specifications and available BIM models ready for download free of charge.

By simplifying the specification process of code compliant and compatible products and providing the user with the ability to build a complete, customized and accurate specification visually, ATS hopes their VSB platform will continue to increase communication and simplify the workflow between architects, designers and engineers, streamlining the process from design to specification.

To find out more about ATS and their services, visit them online at dev.atsspec.net/index/features. ■

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Plumbing Engineer's 2012 Manufacturer Spotlight

Once again, *Plumbing Engineer* presents its popular section of Manufacturer Spotlights, wherein the manufacturers whose products you specify present interesting facts about themselves and the products they offer. The following pages are filled with information you are sure to find informative and useful.

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2012 Manufacturer Spotlight



High-Efficiency Heating System Helps Concordia College Achieve Conservation Goals

AERCO Modulex 1060 Boilers Help College Reduce Emissions, Increase Fuel Savings

Concordia College, an undergraduate liberal arts institution in Bronxville, NY, recently completed the first phase of an energy conservation project that included the installation of high-efficiency heating, lighting, ventilation, and air conditioning systems. To assist with purchasing the equipment that would provide the most savings, Concordia College turned to Johnson Controls, Inc., a leading global provider of equipment, controls and services for heating, ventilating, air-conditioning, refrigeration and security systems. The team from Johnson Controls had vast experience in designing environmentally friendly systems that deliver fuel savings and reduce operating expenses.

Choosing the Best Solution

Johnson Controls found an ideal answer to Concordia College's challenge with two AERCO Modulex 1060 (MLX-1060) condensing, fully modulating boilers that were installed in the school's Scheele Memorial Library. The boilers' unmatched turndown, up to 99% efficiency, and strict emissions control helped meet the school's goal of utilizing a "green" system.

The MLX-1060 combines the power of seven thermal modules that each operate with greater than 3:1 turndown to deliver a 23:1 range of operations. The boiler precisely matches load without cycling or temperature overshoot by always employing as many modules as possible – each firing at its lowest possible rate. Less energy is required for the group of thermal modules firing at part load to heat a building than if only some modules, each operating at full fire, carried the load.

This unique controls approach results in greater fuel savings compared to a module requiring each thermal to

reach full 151,500 BTU per hour capacity before the next module goes online. In addition to the independent operation of two or more thermal modules increasing each boiler's turndown, it also increases its overall reliability, offering Concordia College peace-of-mind. Since thermal efficiency increases as firing rates drop, the simultaneous low-fire operation of multiple modules ensures the heating system at Concordia College is continuously operating at maximum efficiency.

The MLX-1060 boiler offers a compact footprint, and flexible piping and ventilation, making it ideal for a retrofit project such as Concordia College, which requires multiple units to be installed. The boilers also deliver whisper quiet operation.



Enhanced Efficiency, Reliability and Cost Savings

The installation of the two AERCO Modulex 1060 boilers into the Scheele Memorial Library's heating system at Concordia College, coupled with the new lighting, ventilation, and air conditioning systems, resulted in an annual savings of nearly \$100,000. The new systems will also help the

college avoid more than 388 metric tons of carbon emissions each year; the equivalent of taking more than 76 cars off the road.

"Since the first phase of the energy savings program at Concordia was completed, our campus has become more green and energy efficient," said Dr. Viji George, president of Concordia College. "We plan on continuing these conservation efforts in the future."

Concordia College received support on the project from Con Edison, a regulated utility that provides electric service in New York City and Westchester County, NY. Con Edison's Commercial and Industrial (C&I) Energy Efficiency Program provided the school with approximately \$213,000 in incentives. Con Edison's C&I program has given out over \$7 million in incentive checks to over 800 customers for similar projects. ■

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2012 Manufacturer Spotlight

**CHICAGO
FAUCETS** 

a Geberit company

Chicago Faucets 3500 Series Brings Modern Styling to Metering Faucets

Chicago Faucets recently introduced the 3500 Series to their line of water conserving metering faucets. The 3500 Series brings a whole new level of style, convenience and affordability to this type of product.

"The 3500 Series combines Chicago Faucets quality with a very sleek new look, making it a great addition to our line of water conserving metering faucets", said John Fitzgerald, vice president of marketing at Chicago Faucets. "Besides being easy on the eyes, they're easy to operate, easy on the budget, and can help dramatically reduce water use compared to older, conventional faucets."

The 3500 Series self-closing mechanism provides precise water flow and shuts off automatically to conserve water. The 0.5 GPM outlet and easily adjustable cartridge provide even greater savings, while the durable handle and non-aerating outlet of this ADA compliant faucet withstand tampering.

Flexible stainless steel hoses are pre-installed and connect to standard water supplies, and an internal temperature control features above-deck access for easy installation. In addition, the 3500's time-tested MVP™ cartridge

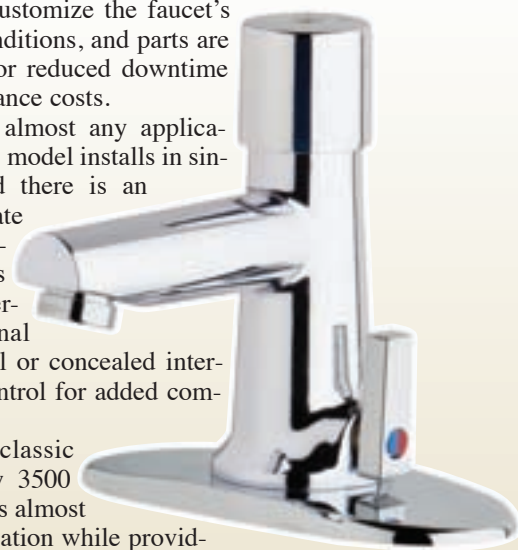
makes it easy to customize the faucet's run time to site conditions, and parts are always available for reduced downtime and lower maintenance costs.

Designed to fit almost any application, the basic 3500 model installs in single-hole sinks and there is an optional cover plate to fit 4" or 8" centers. The faucet is available with user-adjustable external temperature control or concealed internal temperature control for added comfort and safety.

"The clean, classic design of the new 3500 Series complements almost any lavatory application while providing the water conservation and savings so vital to today's facilities. And since it's from Chicago Faucets, you can count on long lasting operation and simple maintenance", added Fitzgerald.

The new 3500 Series is just one more way Chicago Faucets provides single-source solutions for every room and application in a building. Metering faucets, electronic faucets, flush valves, pre-rinse sprays, bubblers, antimicrobial products, stops, risers, thermostatic mixing valves, flexible connectors, stops and supplies... Chicago Faucets offers the broadest product selection in the industry, backed by the strongest warranties and unparalleled customer support.

Chicago Faucets, a member of the Geberit Group, is the leading brand of commercial faucets and fittings in the United States. Since 1901, Chicago Faucets has offered commercial and residential products built to stand the test of time. A combination of the best engineering, finest materials and quality workmanship has made Chicago Faucets the specified choice in many of the finest building projects throughout North America. For additional information contact The Chicago Faucet Company at 2100 Clearwater Drive, Des Plaines, IL 60018, or call 800-566-2100. You can also visit Chicago Faucets at chicagofaucets.com. ■



The 3500 faucet shown here features a user adjustable temperature control mixer and a 4" coverplate.



The new 3500 Series from Chicago Faucets brings a whole new level of style, convenience and affordability to water conserving metering faucets.

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The **most** reliable electronic faucets you can buy.



100 people.
6 times a day.
18 years.
Just **one** faucet.

And we have the numbers to prove it.

The HyTronic® and E-Tronic® 40

A little over five years ago, we set out to design an electronic faucet with a singular objective – to make the most dependable product available. In ongoing laboratory testing, our electronic faucets consistently reach over **4 million** faultless activations. That's the equivalent of **100 people washing their hands 6 times a day for 18 years.**

Outside the lab, results are just as impressive. We're delivering dependable, trouble-free performance in thousands of installations across the country. For a brochure on our electronic faucets, visit our website or call us at 800/323-5060.



**CHICAGO
FAUCETS**

a Geberit company

www.chicagofaucets.com
800/323-5060

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2012 Manufacturer Spotlight

Noritz Boosts Tankless Water Heater Service Quality with New Technical Support Web Site and In-House Call Center

Noritz America recently unveiled two customer-service initiatives – a Technical Support Web Site and an In-House Call Center – with the goal of delivering information more quickly and efficiently to customers, whether their preferred method is the telephone or online.

The origins of both initiatives can be found in the product application and installation questions that contractors and homeowners routinely ask Noritz sales and service personnel on a daily basis, according to Scott Isaksen, manager of Application Engineering.

Technical Support Web Site

A collaborative effort involving the Noritz engineering, information technology, marketing and service departments, the new Technical Support Web Site is accessible at support.noritz.com. Once on the Technical Support home page, a visitor will find a variety of links, including access to Noritz's new "Warranty Calculator" tool, as well as information on federal tax credits and gas-company rebates.

Most site visitors will be seeking technical information on specific Noritz products where it provides a host of user-friendly prompts to minimize missteps:

- DOWNLOADABLE TECHNICAL LITERATURE
- FREQUENTLY ASKED TECHNICAL QUESTIONS
- SUBSCRIPTION SERVICE

• "TROUBLESHOOTING" SECTION: Containing even more in-depth technical information than the rest of the site, this area is specifically reserved for members of the Noritz PROCard customer-loyalty program.

In-House Call Center

The new In-House Call Center, reachable toll-free at 1-866-766-7489, is staffed by a full-time supervisor and customer service agents who are available from 8:00 a.m. until 5:00 p.m. Pacific, Monday through Friday.

The call-center agents will also be able to further educate themselves by tapping the new Technical Support Web Site for product and application information. "The two innovations will feed off one another over time," says Isaksen, "helping us to reach our primary objective, which is to service the customer with increasing speed and precision." ■



Home page of the new Technical Support website offers links to a wealth of information on Noritz product, including thumbnail images depicting various tankless water heaters and boilers.



The Technical Literature section offers five different, downloadable items for each product: spec sheet, owner's guide, installation manual, parts list and certification listings. To help a visitor drill down to the correct product, three different filters can be employed: Model Category, Technology and Generation.

NORITZ **COMMERCIAL**

Intelligent,

Meet intelligence.

Introducing *the most intelligent commercial water heating system in the engineering community.*

- 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

(866) 986 - 6748

www.noritz.com/commercial

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2012 Manufacturer Spotlight



WADE DRAINS FOR 147 YEARS - YESTERDAY, TODAY, TOMORROW

Wade started in 1865 when James J. Wade completed his apprenticeship and became a master plumber in Chicago, Illinois. Many buildings were destroyed in the fire of 1871 and Wade became a designer and producer of drainage products during the years of rebuilding.

The J.J. Wade and Sons Company soon became one of the largest contracting firms in the Chicago area, helping to write the first plumbing code. Wade went on to become the



president of the Chicago Plumber Contractors Association and served during the 1890's. For three generations Wade Management was active in the development of plumbing standards, designing and marketing new products and working with trade associations to improve the industry.

Plumbing products during this time period left much room for improvement. Wade was not satisfied with what was available and turned his talents more to product design. Patent after patent was issued and soon Wade found himself more of a manufacturer than a contractor.

By 1890 J.J. Wade's son, Thomas became manager of the production section and J.C. Wade his grandson became head of the engineering and design department. Within a few years the contracting end of the business was absorbed by the manufacturing and production part and factory salesmen were employed to increase the flow of Wade specification drains.

Wade and sons were among the first advertisers in national trade magazines and the first catalog was published in 1890. Business was good and Wade entered the 20th century as a leader in specification products and special castings.

In the 1930's, as the company struggled out from the Great Depression, the name was changed to Wade Manufacturing Company. It was later relocated to Elgin, Ill. and then to Franklin Park, Ill. until Tyler Pipe acquired it in 1962. By 1966, all engineering, production and shipping of Wade products was done from Tyler, Texas.

Since 1865, Wade has been a leader in quality and innovation with many firsts in the drain industry

- Wade was first to introduce a NH connection on a closet carrier.
- Wade was first to introduce a 36" long barrel closet carrier.
- Wade was first to introduce a lug on the rear of a closet carrier for an adjustable anchor foot.
- Wade was first to introduce one faceplate to accommodate both siphon jet and blowout water closets
- Wade was first to introduce a true push on connection with integral pipe stop for cleanouts and floor drains
- Wade was first to introduce an adjustable roof drain that adjust the entire body eliminating the need for an additional clamp ring.



Wade Specification Drainage Products is now one of the McWane families of companies which consist of 13 iron foundries, one of which Wade domestic product is produced. McWane is headquartered in Birmingham, Alabama.

Since 1865 until today Wade continues to be the first in

innovative ideas and designs and will continue to do so as we go forward 147 years later. ■

Yesterday

Today

Tomorrow



WADE

SINCE 1865

TRUSTED By Plumbers

We offer a complete line of **COMPETITIVELY PRICED** drainage products

Also offer a line of products that meet "BUY **AMERICA ACT**" requirements manufactured in our foundry

Made by the **LARGEST U.S. MANUFACTURER** of drains, waste and vent products

Packaged to meet Contractor's or Distributor's **PERSONAL NEEDS**

Numerous inventories across the U.S. with **EASY ACCESS** to Wade Products

AVAILABILITY with delivery in 24 hours

TECHNICAL SUPPORT to help on any design

DRAINS Designed By Plumbers

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WADE

2012 Manufacturer Spotlight



Highland Tank Blends Form and Function into Aesthetically Pleasing Water System

Located on 2,740 acres in Hillsborough, N.J., the mission of Duke Farms is to be a model of environmental stewardship in the 21st century and to inspire visitors to become informed stewards of the land. Through the beauty of its natural setting, the diversity of its wildlife, and the scope and quality of its educational programs, demonstrations and research, Duke Farms inspires people to transform their approach to conservation and to start building a more sustainable future.

Recently, Duke Farms completed the renovation of a 22,000-square-foot former horse and dairy barn, known as the Farm Barn, to LEED Platinum standards of the U.S. Green Building Council. The building houses an orientation center, classroom and café on the first floor and staff



offices on the second floor. A ground-mounted solar array provides 100 percent of the power for the building, and more than 50 geothermal wells help to heat and cool the interior.

During the design process, the need for increased water supply for the Farm Barn and additional parking to support the increase in visitors was realized. The LEED engineering consultant for the project proposed utilizing a rainwater harvesting system that would provide clean non-potable water for flushing toilets and irrigation, as well as storm water protection for both roof and pavement runoff. The consulting engineer enlisted the services of

Highland Tank & Mfg. to provide an engineered system to meet the needs of the specific site requirements as well as the strict adherence to sustainable and innovative design critical to the visitors of Duke Farms.

Highland Tank's design team would be challenged to maintain the ecological preservation of the property and meld storm water management with rainwater harvesting. Highland's HighDRO®-Pure Rainwater Harvesting system is designed to address issues of reduction to flood occurrence and erosion control, storm water management, and lessen the reliance on the municipal water supply.

The HighDRO®-Pure system would be the basis of design for this project with a little engineering twist. Duke Farms asked that no tanks, filtration systems, pumps or other equipment be installed above ground. There was also no room in the existing structures to house the typical equipment required in a rainwater harvesting system.

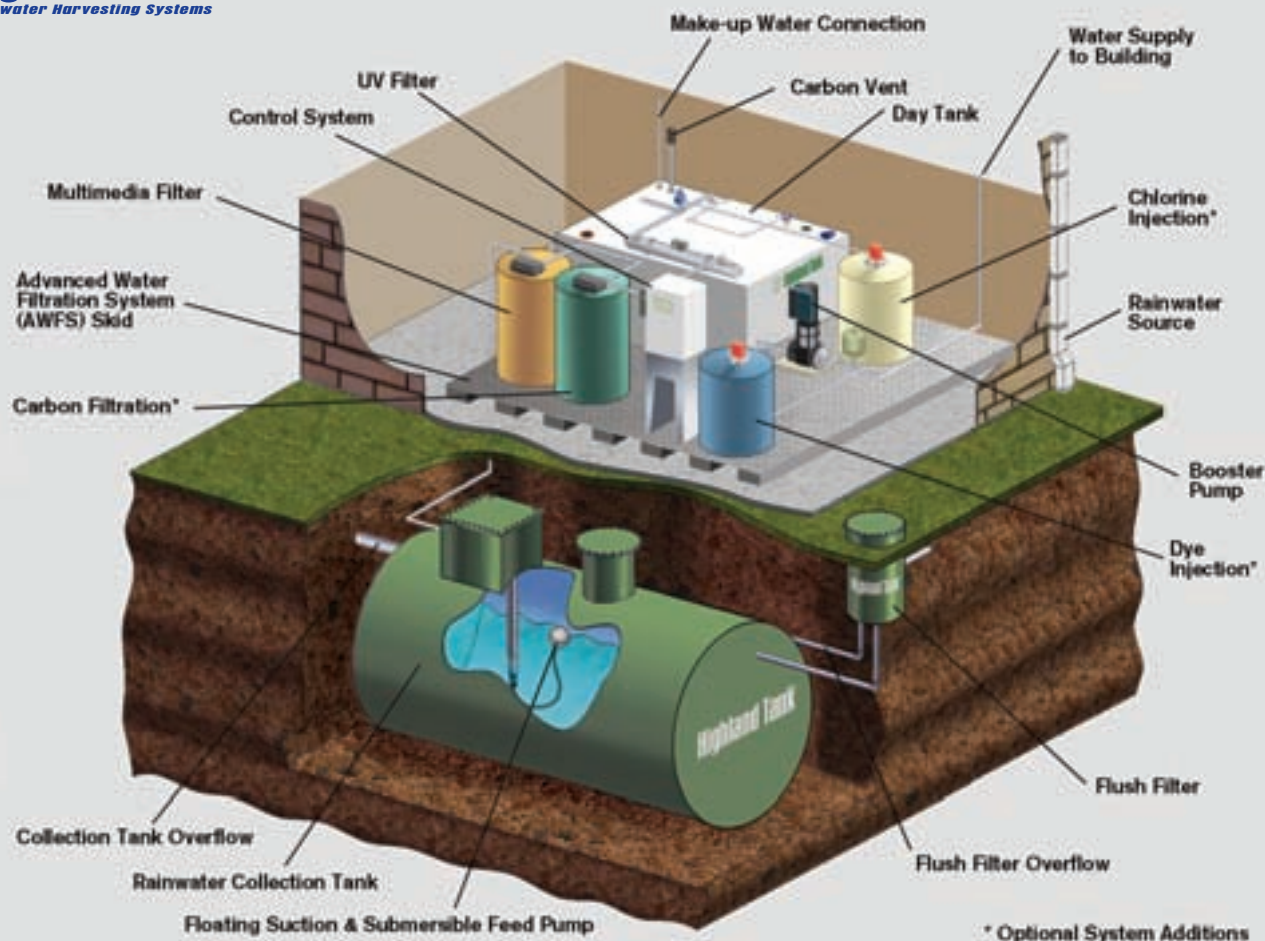
The talented design team manufactured an underground storage vessel with a dry chamber to house mechanical equipment like pumps, valves, filtration and controls. The scope of work would need to include a first flush device, cistern to store captured rainwater, pumps to transfer rainwater, filtration/disinfection to treat the water, a day tank for treated water and a booster pump to send water to the fixtures within the building. All of these components needed to be fit into a single underground vessel. The vessel would need to be split to house the cistern, dry chamber and day tank.

Highland's Stoystown factory fabricated the tank shell, bulkheads and manways, while the company's nearby Friedens factory installed the components. All welding of fittings, brackets, stands and shelves needed to be fabricated prior to coating the tanks. The exterior coating was specified HighGuard and the interior coating HighDRO® Liner Plus, which is an NSF compliant lining. After the coatings were applied, all ancillary equipment was installed. This tank is just one example of Highland Tank's engineering ingenuity and ability to customize products to meet a client's specifications. ■

To learn more about Highland's HighDRO® Rainwater & Greywater Systems, visit www.highlandtank.com.

Highland Tank . . . Manufacturing Complete Turnkey Solutions for your Rainwater Harvesting & Greywater Recycling Needs

HighDRO®-Pure Rainwater Harvesting Systems



HighDRO®-Clear Greywater Recycling Systems



Highland HighDRO® systems produce a sustainable and reliable alternative water source - harvesting, storing, treating and reusing rainwater or greywater.

Benefits

- Reduces fresh/tap water consumption costs
- Efficient designs qualify for valuable LEED credits
- Recharges ground water supplies
- Protects waterway integrity by reducing pollution
- Multitude of potable and non-potable applications
- Reduces flooding and erosion

Features

- Unlimited storage capabilities
- Low energy consumption per gallon treated
- Influent flow rates to 6,000 Gal/Min
- Distribution flow rates from 5 to 300 Gal/Min



Highland Tank®

Unmatched Quality and Service

www.highlandtank.com

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Stoystown, PA 15563
Phone 814-893-5701
highdro@highlandtank.com

2012 Manufacturer Spotlight



Pumps with a Mission

All over the world, Grundfos pumps are on a mission to improve quality of life for people and care for the planet. From the ALPHA and MAGNA circulators to the BoosterpaQ systems, Grundfos products lead the pump industry in energy efficiency.

Because of advancements in the electronics and building industries, which have standards such as Energy Star and LEED, respectively, water remains one of the last frontiers of energy efficiency. The pumps and pipes that supply water are essential components of almost every aspect of modern life – from residential and commercial buildings, to agriculture, industry and wastewater management. In fact, the Hydraulic Institute estimates that pumps and pumps systems account for 20 percent of global electricity demand. Thanks to modern technology, we can cut that figure in half.



Grundfos' AUTOADAPT technology, for example, can reduce energy consumption by up to 60 percent. While standard pumps run at maximum power all the time, AUTOADAPT varies circulator speed to match system demand, ensuring that the pumps only use as much energy as is needed. Grundfos has also developed pumps for demand driven distribution. The World Bank estimates that almost 12,000 gallons of pure drinking water are lost daily through water leakage – that's enough to serve nearly 200 million people. Grundfos' demand driven distribution uses technology to moderate pressure when demand is low, breaking the vicious cycle of leaks.

The added benefit of reducing leakage rates is reduced stress on our increasingly scarce water resources. Water conservation is essential in arid areas in the Southwest, but freshwater aquifers are stressed even in some urban

areas in the Great Lakes region such as Chicago and Milwaukee. Lack of water can seriously hamper the economy, halting permits for new residential, commercial and industrial developments and even the construction of new power plants.

Power plants require a lot of water. The Department of Energy estimates that by 2030, the electricity sector alone could consume as much water as the entire country's domestic consumption in 1995. By improving water efficiency we can reduce the amount of electricity needed to move water, but we can also make more water available for electricity production. In other words, water efficiency has the potential to reduce the demand and increase the supply of electricity at the same time.

But individuals cannot simply leave it to government and industry to contribute to sustainability. Individuals, too, have a duty to reduce personal consumption. Indeed, the UN estimates that the average American uses more water in a five-minute shower than the average person in a developing country's slum uses all day. Water is a precious resource and should be treated as such.

Worldwide, nearly 1 billion people lack access to safe water. Because of this, a child dies every 15 seconds from preventable waterborne diseases. Grundfos carries out its mission to improve quality of life for people through LIFELINK, a new model for sustainable water supply in the developing world. The LIFELINK system includes modern pump technology driven by solar energy, as well as an innovative payment system based on mobile banking, which automatically collects revenue and uses it to finance the ongoing service and maintenance of the system.

In the United States, Grundfos recently launched a partnership with Water Missions International, a non-profit that uses Grundfos' technology to bring safe, sustainable water systems to the developing world. In the summer of 2012, Grundfos companies throughout the U.S. are hosting charity walks to raise money to fund these water systems. The inaugural Kansas City Walk for Water raised more than \$30,000, enough funds to provide an entire community with safe water for generations to come.

In their quest to lead the industry through innovation, Grundfos pumps touch the lives of people all over the world. Their multi-faceted mission includes improving human comfort, contributing to environmental care and – above all – bringing consumers tomorrow's technological solutions today. ■

BE > THINK > INNOVATE >

I provide Modern Comfort
and batting practice.

**MODERN
COMFORT**
BY GRUNDFOS



With Grundfos in, you get more time out.

Quality components that require fewer callbacks. AUTOADAPT™ technology for easy installation and set up. These aren't just features of our energy efficient circulators. They're ways we can help you spend less time in the field and more time on the mound. Demand the pumps that always go to bat for you. Demand Modern Comfort.

To learn more, visit: moderncomfort.grundfos.us

GRUNDFOS 

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2012 Manufacturer Spotlight



IMC/TEDDY
FOOD SERVICE EQUIPMENT

IMC/TEDDY FLOOR DRAINS AND SPECIALTY PLUMBING PRODUCTS

IMC/Teddy is a manufacturer located in Long Island, NY, in the business of producing and distributing Stainless Steel Washing, Cleaning and Draining products for Commercial, Institutional, Industrial and Correctional buildings, typically used in the kitchen and other areas where washing, cleaning and draining activities are conducted. The facility is equipped with the latest Laser Cutting Technology, CAD/CAM bending, CAD design and current technology Tig/Mig welding and polishing.

Skilled Engineers and technicians ensure the best possible quality and product performance, reliable functionality and top-notch appearance. Knowledgeable Sales Representatives and factory service personnel ensure immediate response to customer needs.

The company was founded on the principles of best in class design, appearance and performance. These principles have endured over forty years and are the cornerstone of high reputation awarded by its customers and the design community. Present management have

continued those principles, thus creating a company culture that provides a sense of satisfaction and pride for employees, associates and industry contacts in all areas.

The product design team scouts for new ideas and technology, consults regularly with the Consulting

Design field, customers and the national grid of Sales personnel for new and innovative products that fill the needs of an ever changing landscape of building design and regulatory aspects of its products to comply with the latest regional, national and international requirements affecting its product applications.

Stainless Steel Floor Drains & Troughs

IMC/Teddy has continuously manufactured the finest quality Stainless Steel floor drain and grating products in the USA for its entire history. These are NSF listed and used primarily in interior locations within buildings, such as Kitchens and Laboratories, or wherever floor "wash-down" operations are conducted regularly. IMC is the brand of choice of the majority of Consultants and Designers.

From standard 4" deep drain troughs to specialty

designs, such as shallow depth, Anti Splash design, Narrow design for Ice Machines and Security for correctional application, IMC has it all. Matching grating with "subway" style design, grid-style design, SS louver and fiberglass designs, the variety of grating options cover all possible applications.

Where multiple equipments are located together in a cluster and discharge high volumes of waste, a custom designed combination floor pan and integral drain trough with grating is available. Multiple waste connections can be integrated into these and other large custom designed drain troughs for high volume drainage situations.

Stainless steel Sinks and Can Washers/Pot Fillers

Hand Wash Sinks and Pot and Pan cleaning sinks are available in different designs and suitable for a variety of applications. Can Washers for Waste cans and Pot Filler sinks are offered as are Mop Cabinets with integrated sinks, storage shelves and mop holders. A large selection of faucets, towel dispensers, soap dispensers and eye wash equipment can be found here, with choice of electronic and manual. The equipment is NSF listed. Multiple bowl or single bowl sinks are available as needed.

One popular product is a Combination Hand and Pot Filler Sink, all in one unit creating a compact and pleasing appearance as well as a great space saving addition to any facility.

Stainless Steel is produced from 95% renewable materials and is environment friendly. The 300 series stainless steel used throughout the product line is also highly resistant to corrosive chemicals and surpasses most other materials in the properties, durability and cleanability of its products. ■



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*Manufacturing quality Floor Drains, Hand Sinks,
Utility Sinks, & Utility Sink Cabinets
for over 40 years*



MADE IN THE U.S.A.



Floor Drains

IMC is known for supplying the Building Industry the best quality. Choose from standard sizes or customized to project needs. All 300 series stainless steel suitable for all installations.



Hand Sinks

The first choice among Designers and Consultants.

Unique and user specific.



Utility Sinks



Utility Cabinet

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Plumbing Engineer's 2012 Manufacturer Spotlight



Moen Incorporated: The Number One Faucet Brand in North America

Moen Incorporated offers a diverse selection of thoughtfully designed, on-trend kitchen and bath products for residential and commercial applications. As the number one faucet brand in North America, customers have come to rely on Moen to deliver dependable products and service.

Moen has offices and manufacturing facilities in the U.S., Latin America, Canada and the Asia/Pacific region. In the U.S., the company is organized into separate and unique segments, to maintain flexibility and speed in meeting customer needs, including a Retail Unit; a Wholesale Unit, which encompasses Cleveland Faucet Group (CFG), Moen's multifamily brand; Creative Specialties International, a bath accessories and home safety division; and Moen's Commercial Division.

What Makes Moen Commercial Unique? Products That Are Built to Last

Moen Commercial products – including faucets, electronic flush valves and showering systems – are built for the most demanding environments. These products can withstand the wear and tear of heavy daily usage found in most commercial buildings, with key features including, durability, vandal-resistance, accessibility, hygiene and energy savings.

Moen Commercial products boast sturdy, solid brass construction and durable finishes that stand up to harsh industrial cleaners. With a five-year limited warranty, customers can be confident that they are buying thoughtfully designed, on-trend products that are backed by the superior reliability for which Moen is known.

A sampling of Moen's innovations for the commercial sector includes:

- **M•Press™** – a complete line of metering faucets providing excellent reliability, durability and water and energy cost savings. M•Press metering faucets contain Moen's new, proprietary Durameter™ cartridge, a pressure-independent, durable brass shell cartridge. It features a sealed silicon timing mechanism that is completely isolated from the water source, which protects it from impurities and clogs, ensuring consistent timing.

- **M•Bition™** – a collection of medium-duty lavatory faucets, featuring Moen's Duralast™ ceramic disc cartridge, a proprietary cartridge design that offers the smooth feel and reliable operation of a new faucet from the first time you use

it to the last. M•Bition faucets also offer adjustable temperature limit stops with durable brass construction, for safe operation and temperature control.

- **M•Power™** – this complete line of hands-free products offers the ultimate in sanitary protection and reliable operation. Advanced electronics in all Moen M•Power faucets and flush valves limit false sensing and over-flushing; ensuring the right amount of water is used every time. The flush valves operate using piston technology, which reduces maintenance and guards against damage and leaks.

- **M•Dura™** – this line offers a full array of heavy-duty single- and two-handle faucets made from cast-brass construction and built to withstand the constant use of commercial applications. The entire line features durable, ceramic disc cartridges that help prevent handle wobble while ensuring a positive closed position.

- **Eco-Performance commercial shower systems** – these WaterSense®-labeled showerheads offer a 40 percent savings from the industry standard, without sacrificing performance. They combine Moen's Eco-Performance showerheads with a brass Posi-Temp® valve to eliminate shower shock due to water temperature and pressure fluctuations. Trim-only kits are available to pair with the new brass Posi-Temp valves which offer a choice of inlet options for increased installation flexibility.



Commitment to Sustainability

Moen has worked diligently to support, promote and advance sustainability within the organization and the plumbing industry. The company has been recognized with the 2011 EPA WaterSense® Excellence Award, as well as the 2010 EPA WaterSense Manufacturer Partner of the Year Award, for its work to protect the future of our nation's water supply through the introduction and ongoing support of water-efficient products, programs and practices.

To demonstrate the company's commitment to water conservation, Moen Commercial has a number of Eco-Performance shower systems that are certified to meet WaterSense criteria. Moen Commercial also offers a number of WaterSense-certified lavatory faucets, including models in the M•Bition and M•Dura lines, which flow between 0.35 and 1.5 gallons per minute, contributing to a facility's water conservation and energy efficiency.

For more information on Moen and its Commercial Division, visit moen.com or moencommercial.com. ■

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Our pressure-independent design
even takes pressure off your
maintenance crew.



With the introduction of the all-new brass Durameter™ cartridge, Moen® Commercial eliminated the use of water pressure to control the timing mechanism in our M•PRESS™ faucets. You get consistent performance with less need for maintenance. That's truly a relief. For an interactive demo, visit www.moencommercial.com/mpress.



Scan here for detailed M•PRESS
product specs. Download reader
at getscanlife.com.

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COMMERCIAL
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Plumbing Engineer's 2012 Manufacturer Spotlight

Liberty Pumps®

...Leaders in pre-designed sewage pump systems.

Liberty Pumps has been innovating pump designs for over 45 years. As a domestic manufacturer of sump, effluent and sewage pumps located in rural upstate New York – Liberty has grown to become a leading producer of factory assembled pump systems.



From its popular 370 and 380-series residential sewage systems to larger commercial Engineered Pump Systems (EPS), Liberty puts quality and ease of installation at the forefront of product development. “Before our product engineers begin a new project, a lot of time and effort goes into surveying actual users and installers – finding out how we can make a product better and easier to install,” states Randall Waldron, Vice President of Sales and Marketing. “Our customers know the value of products that not only perform well, but offer easier installation with fewer problems at the job site.”

This extensive field research has lead Liberty to offer one of the broadest arrays of pre-designed grinder systems available from any manufacturer. Centered around the popular Omnivore® grinder pump, Liberty offers over 80 standard pre-designed grinder packages. These packages are available in 24" and 36" diameter basins and tank heights that range from 48" to 96" tall. Variations to the base packages include different pump voltages, discharge heights and internal or external capacitors on the pump. Controls for the pump can be standard float operated or customers can order the new intelligent panel series which features float-less technology and the ability to program the pumping differential right from the control panel.

For the engineer, specifying a Liberty EPS system

means that all pieces are matched and fitted at the factory. The entire system ships together and arrives with minimal field work required. No more waiting for components to arrive from different suppliers or having incompatible parts. Guide rails, float brackets, switches, wiring boxes and other hardware are all rendered in our 3-D modeling software assuring proper settings and clearances of all components prior to assembly. These drawings are included as part of the submittal package showing the entire factory-set system. Once approved, it then goes to a specialized production area for system assembly and shipment to the jobsite. With Liberty, what you specify is what shows up on the job – one shipment and complete.

With a proud heritage of being an independent, family owned business, Liberty takes its service levels seriously. A live voice answers the phone instead of an automated system, pre-designed pump systems are shipped in 24 to 48 hours and system quotes are provided the same day by a team of trained sales technicians.

With several models of pumps to choose from, Liberty has the right pump for your application.

Got questions? Liberty's technical customer service department is fully trained and ready to help you size and specify the correct pump system. For more information contact Liberty Pumps at 1-800-543-2550 or visit their comprehensive website at www.libertypumps.com. ■



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Complete Systems. **ONE** Source.

EPS

Engineered Pump Systems

Now with QuickTree® Technology!

Grinder Systems

Solids-Handling Systems

Effluent Systems

Simplex

Duplex

Order a Liberty EPS and you'll get the assurance of the complete system arriving to the job-site with factory matched components – pump, panel, basin, internal piping, guide rails, floats - all from one source.

All liberty EPS systems now feature QuickTree® technology for quick and easy access to the float switches!

Need it fast?

Specify a pre-designed system from Liberty! Pre-designed simplex and duplex systems are available and ready to ship in 24 hours. Consult factory for more information on our pre-designed packages.

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www.libertypumps.com

Liberty Pumps®

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**Inc.
5000**

One of America's fastest growing,
privately owned companies.

2012 Manufacturer Spotlight



Bradford White Corporation Invests in American Jobs to Prepare for Continued Growth

“I believe ‘American-made’ is more important than many people realize. And when you look at the root cause behind the upswing in patriotic consumer attitudes, you realize you can’t overdo it. Bradford White is going to continue to put special emphasis on being an American-owned and American-made company.” That was a quote from A. Robert Carnevale, then president and CEO, way back in January of 1993. At that time, the “new” Bradford White Corporation was only six



months old, and many said that a company that sold only through wholesale distribution, with products designed only for the professional installer, could never survive.

While competitors have been bought, sold and merged, Bradford White has remained true to its founding principles:

- Supporting the American worker by manufacturing its products in the United States.
- Employee ownership to encourage greater pride and loyalty.

- Dedication to the trade through wholesale-only distribution.

As a featured speaker at a recent industry event, current President and CEO Nicholas J. Giuffre was quoted as saying:

“We still hold true to those three core values, which continue to resonate with our customers today,” he said. “Every time we go to a meeting like this, or visit with customers out in the field, we are reminded how important these principles are to them. It’s what defines us, and it’s a very comfortable fit for us.”

While others have moved manufacturing facilities south of the border, Bradford White has invested in American jobs. As demand for its products has grown, Bradford White has continued to expand its manufacturing facility in Middleville, Michigan and hire American workers. Still built in America’s heartland and still proudly headquartered in Ambler, Pennsylvania, Bradford White has also grown through the acquisition of other companies with manufacturing facilities in the United States: Laars Heating Systems in Rochester, New Hampshire; and Niles Steel Tank in Niles, Michigan.

Bradford White’s philosophy, coupled with a passionate determination to build the best quality and most reliable product in the industry, has proved to be a winning formula. As Bradford White celebrates its 20th anniversary as an independent manufacturer dedicated to the professional contractor and wholesale distributor, its business is stronger than ever.

Thanks to the support of the professional contractor and wholesale distributor, Bradford White continues to grow. The company has recently completed numerous capacity improvement projects, and is embarking on its largest plant expansion to date...all in America!

So, while other companies may talk about the importance of American manufacturing, at least one company is actually doing something about it...Bradford White Corporation. ■

Bradford White Contractors!
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Now, whenever the situation calls for it, you can rely on Bradford White for expert support, 24 hours a day, 7 days a week. The Technical Service and Warranty Support personnel are U.S.-based, right inside our Technical Support facilities in Middleville, Michigan. Each technician goes through a rigorous and extensive training program before they take your call, preparing them with the know-how to diagnose and solve any challenge an expert like you might face in the field.

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Built to be the Best™

To Find A Wholesaler Call 800.523.2931

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Circle 62 on Reader Reply Form on page 117

Plumbing Engineer's 2012 Manufacturer Spotlight



see what Delta can doSM

Proximity[®] Sensing Technology. For very responsive faucets.

The next generation in responsive hands-free functionality has arrived. Proximity Sensing Technology from Delta[®]. This revolutionary technology transforms the entire faucet into a sensor, automatically responding when approached. There's no other hands-free faucet like it.

Thanks to a 4" sensing field around the body of the faucet, the entire spout acts as a sensor, responding when activated. Simply placing a hand near the faucet spout turns the water on. When hands are removed from the water stream, the faucet turns off within two seconds.

Faucets featuring Proximity Sensing Technology add a highly stylized, contemporary offering to the commercial, hands-free market making them appropriate for installation in many applications. Proximity Sensing Technology also contributes to water efficiency, and is backed by the industry's best 5-year limited warranty.

Stylish, contemporary designs enhance experience.

Proximity Sensing Technology is available on two of the most popular Delta faucet styles: Arzo[®] and Grail[®]. Both faucet bodies are constructed of solid brass and have smart, modern designs that are highly sought after for public facilities.

With sleek, clean lines, Arzo and Grail with Proximity Sensing Technology are also free of optics and infrared technologies, so they're easy to maintain and fit beautifully into a variety of designed spaces. And since you don't have to touch the faucet to activate it, Proximity Sensing Technology also helps reduce the spread of germs.



Smart features make installation and maintenance easy.

Faucets with Proximity Sensing Technology require no grounding, and include all of these smart features:

- **Water-efficient performance:** With a flow rate of 1.5

gallons per minute—32% less than the industry standard—faucets with Proximity Sensing Technology can contribute to LEED[®] certification.*

- **Battery or hardwire operation:** For battery-operated models, the faucet emits an audible beep when 1500 cycles remain, indicating the batteries need to be replaced. Four C batteries last typically up to three years based on 150 uses per day. The 6-volt hardwire option eliminates the need for battery maintenance, which is especially critical when numerous models are installed.



- **Self-calibration:** Faucets with Proximity Sensing Technology are designed to self-calibrate once they've been installed, making installation more user-friendly.

- **Auto shutoff:** The faucet automatically shuts off in two seconds when hands are removed from the sensing field. In cases where a new item (e.g., a soap dispenser or wet towel) is introduced into the environment, the faucet will only run for 45 seconds before recalibrating and including the item as part of its area.

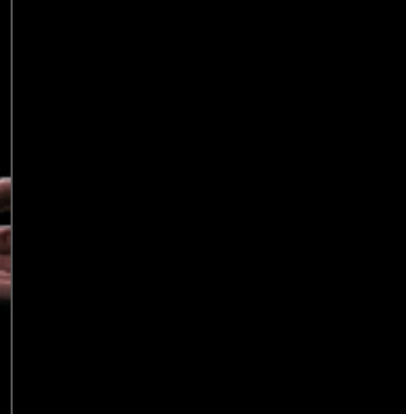
- **Tempered water supply:** Proximity Sensing Technology uses a tempered water supply or requires the use of a mixing valve, eliminating the need for temperature adjustment and making it ideal for new or retrofit situations where tempered water is available.

- **Surface-mount control box:** Easy access to the controls makes installation and routine facility maintenance simpler.

For more information on Proximity Sensing Technology from Delta, visit deltafaucet.com/commercial/proximity. ■

*Water savings calculated versus Industry Standard ASME A112.18.1/CSA B125.1 of 2.2 gpm.

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THIS IS ONE VERY **RESPONSIVE** FAUCET.



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



Circle 64 on Reader Reply Form
on page 117

Scan the QR code to
see our Proximity
Sensing video.



2012 Manufacturer Spotlight



Waterless Trap Seal Protection – An ECO-nomic Alternative to Trap Primers

Today in nearly every building across North America — whether commercial (offices, warehouses, stores, etc.) or residential (homes, apartments, & condos) — there are floor drains. Because drains connect to the sewer system, some method of sealing must be used to protect against the backflow of dangerous and noxious sewer gases into work or living areas. In North America the standard is a water based seal in a p-trap.

Water seals in p-traps work so long as there is water in the traps. In situations where there are infrequent uses of the drain; the water can evaporate (an effect exacerbated by the recent adoption of dry mop techniques), venting problems may cause the seal to be siphoned off when toilets or other fixtures are used, and old traps may leak or one may never have been installed. No seal = no protection from the known public health threat of noxious sewer gas.

SureSeal Manufacturing has developed an alternative to the traditional water based trap primer methods — the SureSeal Inline Floor Drain Trap Sealer. The SureSeal is a one way valve that fits watertight inside the drain — not in the plumbing system. Its elegant and functional design utilizes a custom elastomeric material with permanent memory for its valve system. The SureSeal opens when fluids are flowing but closes when they stop with zero impact on normal drain flow. When closed, the valve remains sealed protecting the water from evaporating in the trap while preventing the emission of sewer gas, even if that gas is under nominal pressure. Additionally, SureSeal's physical barrier also blocks insects from enter-ing work and living areas through protected drains.

SureSeal MFG has worked to gain awareness and approvals for the application of its concepts and methods — culminating with the development of the ASSE 1072-2007 standard for Barrier Type Floor Drain Trap Seal Protection Devices. ASSE 1072 approved products must meet the following performance tests:

- Physical Membrane Material
- Dirt and Debris
- Evaporation
- Trap Seal Interference
- Opening
- Flow
- Floor Wax
- Grease
- Life Cycle

These rigorous requirements establish the threshold which products must meet in order to be considered as an alternative to the traditional trap priming solutions.

SureSeal is the only product that has been designed to meet — and successfully tested to pass — all tests in this Standard, earning the ASSE Seal of Approval. ASSE,



A product line launch is being rolled out with a national advertising campaign and a wide assortment of marketing and merchandising support materials.

ICCES, & IAMPO listings are available for download at www.TheSureSeal.com/design.

The SureSeal solution is unique in that it solves a problem and creates significant value without using/wasting potable water. At 10 % - 25% of the cost of installing, repairing, or replacing traditional water based solutions, SureSeal is truly a great value. Making it friendly to both your wallet and the environment — a true ECO-nomic solution.

SureSeal MFG is supporting the product line launch with a national advertising campaign and a wide assortment of marketing and merchandising support materials. SureSeal products are available through representatives nationwide. For further information about SureSeal please visit www.TheSureSeal.com/pe or call 877-201-2663. ■



The SureSeal Inline Floor Drain Trap Sealer is a one-way valve that fits watertight inside the drain, not in the plumbing system, and utilizes an elastomeric material which opens when fluids are flowing but closes when they stop with no impact on normal drain flow.



Certified Fully ASSE 1072
Compliant

ASSE Listed: 1409
ICC-ES Listed: PMG-1070
IAPMO Listed: C-4165

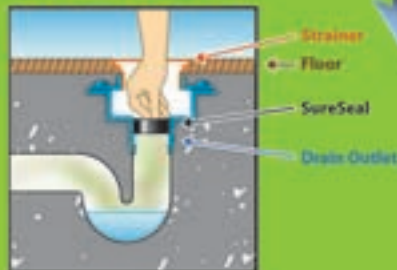


NO PROBLEMS!



Before SureSeal

After SureSeal



STOP floor drain odors before they start with waterless trap protection.

✓ New Construction ✓ Repair & Retrofit

100% SAFE & EFFECTIVE!

SureSeal eliminates the need for expensive and failure prone trap primers, yet blocks the emission of noxious sewer gases from backing-up into living or work areas. SureSeal is cost effective, simple to install, and easy to maintain; eliminating complex, time consuming, and expensive repairs when trap primers fail.

Visit www.TheSureSeal.com/pe for a video demo
and to download test results, specifications, and
detailed product information.

Available in 4 sizes: 2", 3", 3.5" & 4"

- Stops floor drain odors
- Resistant to lime scale and microbiological growth
- Effective alternative to trap primer replacement
- Fast & simple to install
- No special tools or silicon needed
- Prevents insects from escaping the drain
- No Effective Flow Restriction
- Suitable for both new & retrofit applications
- Eliminate Callbacks
- 10 year Limited Warranty

**Ideal for use in the
following applications:**

- Washroom Drains
- Shower Drains
- Basement Drains
- HVAC & Maintenance Areas
- Outdoor Drains
- Condensation Drains



SureSeal
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877-201-2663

2012 Manufacturer Spotlight

American Standard
Style That Works Better

American Standard Helps Massachusetts Town Slash Energy and Water Use by 20%

Northampton is a picturesque college town in western Massachusetts that may appear quaint, but it is one of several cutting edge communities seeking significant energy and water savings.

Last year, the city completed a \$6.5 million municipal improvement project that didn't cost Northampton taxpayers a dime, but will slash energy and water use by 20 percent over 15 years.

Water conservation, achieved by high-efficiency American Standard plumbing fixtures, was a focus in the upgrade. All told, the improvements are expected to save the city two million gallons of water annually.

In keeping with its progressive inclination, Northampton opted to use an alternative procurement process to make the needed improvements, negotiating an energy performance contract to undertake 180 individual conservation measures.

With this method, the city will leverage future energy and water consumption savings to finance the costs to upgrade a majority of the city's municipal buildings and schools. The project will effectively cut energy, lower greenhouse gas emissions and dramatically reduce water usage.

"Northampton is known for really thinking outside the envelope and really pushing sustainable energy and environmental initiatives," says director of Central Services David Pomerantz, who oversees the city's energy plan as well as the performance contract.

"We contracted with an energy services company, who must ensure we obtain the level of savings projected, or they have to pay the city. It's their technology, implementation and models and they have to prove it's going to work or write us a check."



The high-efficiency Cadet 3 uses 20% less water than standard toilets.

American Standard Provides High Efficiency Solutions

Northampton's performance contract covered 28 buildings, a majority of those that the city maintains. American Standard high-efficiency toilets and other plumbing products were selected for installation in City Hall, Memorial

Hall, four elementary schools and three vocational facilities.

"The change out included more than 220 commercial toilets that use 20 percent less water than a standard 1.6 gallons per flush (gpf) product," says Richard Kealty with American Standard Brands in West Acton, MA. Selected for the project were the American Standard Aftall, Madera and Cadet 3 1.28 gpf high-efficiency toilets.



Northampton City Hall is among the municipal buildings upgraded with American Standard high-efficiency products.

Water conservation is vital to a municipality like Northampton, but without commensurate performance, the savings is defeated. That's why American Standard offers a range of high-performance, high-efficiency toilets that not only improve water conservation, style and function; they do it without sacrificing performance.

"We use American Standard as one of our proprietary packages of fixtures and equipment," Pomerantz says. "Standardization is a real strong goal on our part. They're available locally and we're dealing with well-built components."

Energy Performance, Guaranteed

Northampton's energy performance contract provider guarantees a 20 percent reduction in costs over the 15 years of the contract, according to Pomerantz. The project is expected to return \$7.5 million in energy and water savings to the city over that time period.

For more information on high-efficiency, high performance products from American Standard, visit www.americanstandard.com or call (800) 442-1902. ■

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POWERFUL
THINGS HAPPEN



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American Standard is the only company with 1.1 gpf flushometer toilet systems that save 31% water over the standard 1.6 gpf toilets. All part of our 68 unique flush valve, toilet and urinal combinations to meet your installation and performance criteria. Water-efficient, labor-saving, reliable operation.

All powerful reasons to choose American Standard

Register for a chance to win a \$100 gift card

Scan this code on your mobile device or
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NO PURCHASE NECESSARY TO ENTER OR WIN. Must be U.S. resident, 21 or older. Begins 12:00:01 a.m. ET 7/1/12.
Ends 11:59:59 p.m. ET 8/31/12. Odds depend on number of entries. Void where prohibited. See Official Rules at entry website.

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2012 Manufacturer Spotlight



LOCHINVAR® LEADERSHIP REIGNS ON WITH NEW INNOVATIONS AND ENHANCEMENTS

Reinforcing its commitment to advanced technology, Lochinvar continues to introduce new additions and enhancements to its ever-expanding product offering. From the recently introduced ARMOR X2™ Commercial Condensing Water Heater to the new Strato-Therm+ Solar Thermal Storage Tank, a wide array of new innovations have hit the market in 2012. In addition, Lochinvar continues to invest in its



existing products, such as the recently enhanced Copper-Fin II® line and the addition of a new, even larger CREST® Condensing Boiler model.

ARMOR X2 Commercial Water Heater

The new ARMOR X2 Commercial Condensing Water Heater combines stainless steel heat exchanger technology with modulating/condensing combustion to deliver thermal efficiencies as high as 96 percent. Designed to eliminate concerns about meeting hot water demand, ARMOR X2 is equipped with two independent combustion systems. Boasting a turndown ratio of 10:1 and available in models with 1.0, 1.3 and 1.5 million Btu/hr inputs, ARMOR X2 offers an efficient, advanced solution for a wide range of commercial applications.

Strato-Therm+ Solar Thermal Storage Tank

Designed to provide a simple, cost-effective means of integrating solar energy into any application, Strato-Therm+ offers the functionality of a solar thermal storage tank, indirect water heater and hydronic buffer tank in a single, space-saving unit. Equipped with a solar heat exchanger connected to the storage vessel and a corrugated stainless steel coil within the tank, the advanced new Strato-Therm+ maximizes heat transfer in a solar thermal system and increases collector performance. The Strato-Therm+ is available in nine models ranging from 125 to 900 gallon capacities.

Copper-Fin II Water Heaters, Boilers and Pool Heaters

In 1993, Lochinvar introduced the Copper-Fin II, the first line of horizontal chassis, copper-finned tube water heaters, boilers and pool heaters to operate with fan-assisted combustion. 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 the exclusive SMART SYSTEM™ control and a more service-friendly design, taking Copper-Fin II to a new level of innovation.

CREST Condensing Boiler

Building upon the success of the CREST® Condensing Boiler, which continues to captivate the industry with its fire-tube technology, Lochinvar is now offering CREST models with inputs up to five million Btu/hr. The fully modulating CREST Condensing Boiler features a low-NOx combustion system with a stainless steel heat exchanger and a highly unique, patent pending dual-system burner design with up to 25:1 turndown. With thermal efficiencies as high as 99 percent, CREST brings Lochinvar's leading-edge technology and exceptional energy-efficiency to the largest commercial applications. ■

For more information about Lochinvar Leadership, visit www.Lochinvar.com.

LOCHINVAR LEADERSHIP

We're on the leading edge
and moving it forward.

Lochinvar® has a long history of pushing the technology envelope and setting higher standards for the industry. We've raised the bar with unique commercial water heating solutions like **POWER-FIN**®, **SHIELD**™ and **ARMOR X2**™. Each delivers money-saving performance, venting flexibility, ease of installation and advanced control systems.

Finding new directions to improve performance, reliability, efficiency and versatility. That's Lochinvar Leadership.

POWER-FIN

Up to 87% thermal efficiency
Up to 2 million Btu/hr

SHIELD

Up to 96% thermal efficiency
Up to 500,000 Btu/hr

ARMOR X2

Up to 96% thermal efficiency
Up to 1.5 million Btu/hr



Scan this QR Code now to see all of our
Hot Water Solutions! Need the app?
Go to getscanlife.com from your mobile device.



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2012 Manufacturer Spotlight



ClimateMaster®-LoadMatch® System Offers Cincinnati Loft Residents Superior Comfort



Development prospects for Cincinnati's eclectic Northside neighborhood, which is close to Cincinnati State, the University of Cincinnati, and U.C.'s medical complex, have been given a big boost by the opening of the former American Can factory as a new mixed use complex, attracting young tenants and relocated empty nesters alike to its spacious apartment settings.

The former American Can building, which at one time had been the site of the largest aluminum can manufacturer in the U.S., had been abandoned since the 1990s. It took Ohio developer Bloomfield/Schon + Partners over six years to redevelop the property in light of the serious difficulties posed by environmental contamination at the site and the economic downturn. Today the American Can Lofts' 110 apartment units are at full occupancy, and residents enjoy efficient indoor comfort provided by an HVAC delivery system comprised of ClimateMaster® heat pumps in combination with Taco LoadMatch® circulators in a single pipe system.

In 2005 Bloomfield/Schon + Partners, with the city and neighborhood's encouragement, purchased the building with the objective of redeveloping it as a New York style rental lofts property. Despite the financial crisis, which severely limited access to capital, the firm remained committed to the project and gradually assembled a complex mix of public and private financing, including stimulus money provided through the American Recovery Act, to get the project under way.

Turnbull-Wahlert hired Cincinnati Air Conditioning to handle the HVAC installation. Cincinnati Air's Bob Stiens is very familiar with the Taco LoadMatch system, having first encountered it in the conversion of a Northern Kentucky warehouse into the Dolwick Business Center, which was also a heat pump job. He has installed LoadMatch in other projects since then and

affirms that the LoadMatch system is very cost-effective in terms of materials needed, the installation savings it affords, and its energy efficiency in operation. The single pipe system utilizes small, low kW circulators in a self-balancing system that assures the required flow to all heating and cooling units at all times while requiring less pipe and fittings, fewer control valves, and no balancing valves, thereby reducing first-costs. Lower pump head and operation of pumps to match the load reduces operating and maintenance costs.

Stiens recommended the system to Ray Fischer, the design engineer on the American Can Lofts project, telling him that LoadMatch would be a good fit. Bloomfield/Schon are also knowledgeable of the LoadMatch system from their use of it in the Cayuga Greens project, so selecting it in tandem with ClimateMaster heat pumps was a harmonious solution. Because of the way the construction schedule developed Fischer had to work fast – he had five weeks to design and size the system instead of a typical timeframe of 2-3 months, so use of Taco's Hydronic System Solutions® (HSS) software design tool proved to be of great assistance to him.

ClimateMaster assembled its Tranquility Series heat pump units with on-board



LoadMatch circulators at its factory in Oklahoma City, pre-wiring and pre-controlling all of the 122 units to be installed throughout the building - in the circulation corridors on each floor and within individual apartment units. That made Cincinnati Air and Bob Stiens' job that much easier, as did the single wall penetration that LoadMatch's single pipe configuration afforded his crew.

2012 saw a mild winter, hardly testing the heating system's capacities, but Adam Bloomfield has every confidence in the performance and efficiency of the ClimateMaster. "This is the second project we've used LoadMatch on," he relates, "and we've been quite pleased with its efficiency, cost savings and benefits." ■

"Very impressed."

– Ray Fischer, Design Engineer



Bob Stiens of Cincinnati Air Conditioning with Ray Fischer, the project's Design Engineer

Developer Bloomfield/Schon + Partners recently converted the abandoned 180,000 sq. ft. American Can factory in Cincinnati's Northside into a 110-unit apartment complex. Residents enjoy efficient indoor comfort from an HVAC delivery system comprised of ClimateMaster® heat pumps and a Taco LoadMatch® system.

No strangers to LoadMatch

The developer chose Turnbull-Wahlert as its GC; the firms had worked together previously on a 98,000 sq. ft. LoadMatch project in Ithaca, NY. Bob Stiens of Cincinnati Air Conditioning was brought

on board, too, bringing his wealth of LoadMatch experience to the job.

HS2 and LoadMatch save time

A very tight construction schedule gave design engineer Ray Fischer just five weeks to design and size the system. Ray was introduced to LoadMatch and to Taco's Hydronic System Solutions® software. "That HSS tool saved me a lot of time," says Ray, "I was very impressed. As for LoadMatch, I'd use it again!"

Taco through and through

The rooftop mechanical room was small, requiring close coordination

of mechanical equipment and Taco products. Twin gas-fired condensing boilers were supported by four Taco KV and KS Vertical In-line Pumps, a Taco Plate & Frame Heat Exchanger and a 4900 Series Air Separator. Despite the space limitations, Bob Stiens says it was a "turn-key install."

Learn more

For sustainable, efficient Green Building HVAC systems, nothing beats Taco LoadMatch and Taco LOFlo® technology. Visit our web site or contact us before your next project!



www.taco-hvac.com

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Plumbing Engineer's 2012 Manufacturer Spotlight



Bradley Drives Commercial Plumbing Innovation

Bradley Corp., designs and manufactures commercial plumbing fixtures, washroom accessories, partitions, emergency fixtures and solid plastic lockers. An industry leader for 90 years, Bradley's history began with the invention of the washfountain — a revolutionary group handwashing fixture designed to save water and time. Since then, Bradley has developed a number of innovative restroom products and technologies to help engineers, specifiers and end-users meet their building goals.



Through the years, the company has changed the way people wash their hands in public. Understanding that consumers have an aversion to public restrooms, Bradley has developed a number of revolutionary handwashing solutions to make restrooms cleaner and more attractive for users, as well as easier for facility managers to install and maintain.

One of Bradley's newest lavatories, the Verge™ Lavatory System, is characterized by its durability and low-maintenance features, in addition to a sleek and modern design, as it incorporates a beautifully sculpted elongated basin with a hidden drain. Made with Evero™ Natural Quartz Material, a resilient natural composite material — Verge stands up well to high-traffic and everyday usage while creating a distinctive restroom space in high-end establishments.

Bradley's innovative Aerix™ hand dryer is the only adjustable speed hand dryer available in the U.S. Multiple speeds allow facility managers to turn up for fast

drying or turn down for quiet operations. The dryer is a green solution since it uses 80 percent less electricity than other dryers, and does not contribute to pollution or deformation.

Bradley's new Diplomat™ Washroom Accessories Series offers an innovative curved stainless steel design complemented by the use of renewable energy in its manufacturing process. Diplomat's fifty-plus product models offer unmatched sustainable design flexibility.

Bradley also offers a full line of emergency eye/face washes and drench showers. Most recently, Bradley introduced its new HALO™ eye/face wash, which provides the most effective emergency relief available. Designed with the latest technology in fluid dynamics, HALO covers 85 percent of the user's face, which is more than 20 percent better protection than any other eye/face wash available.

Bradley's newest drench shower with the SpinTec™ showerhead delivers a more even distribution of water in less time than competitive models. Its unique spray pattern rinses with a higher velocity for faster removal of contaminants from the affected user, while a built-in flow control makes SpinTec highly water-efficient.

In addition, Bradley's Enclosed Safety Shower, which is armed with an insulated fiberglass structure, fire ratings, and reliable chemical and corrosion resistance, provides superior washdown capability in harsh conditions. ■

For more information on Bradley, visit them online at www.bradleycorp.com or call 1-800-BRADLEY.



Don't settle for less.

85%

coverage of the face

that's 20% better than
any other unit available



We've got you covered.

In an emergency, you want an eye/facewash unit that provides the most coverage. With HALOTM, you get the best coverage on the market — 85% of the average user's face. That's more than 20% better than any other unit available. HALO eye/facewash features **Aquaduct**TM the only self-draining plumbing design on the market. With more coverage and a superior wash pattern, HALO users experience the most effective contaminant relief available.



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Plumbing Engineer's 2012 Manufacturer Spotlight

**ROCKFORD
SEPARATORS**

**Faster, more dependable performance
from your sole separator source**

For 40 years, we've focused solely on separation. Our team is experienced in building custom, engineered-specific designs for customers that expect the best, whether it's for a Las Vegas casino, new 5-star restaurant, mall food court, or your neighborhood quick lube shop.

Rockford Separators are used in separating and retaining numerous wastes: grease, oil, fuel, fats, lint, hair, soap residue, food solids, chemicals, sediment, solid waste, sand, gravel, sludge, plaster, precious metals, glass chips and grindings, fibrous materials, metal chips, and waxes.

The principle behind a Rockford Separator follows nature's own law of gravity in separating lighter-than-water waste matter from heavier-than-water waste, retaining both in the separator. Clogged drain lines are



Your single source for quality separation systems.

virtually eliminated due to the unique, yet simple design incorporated into Rockford Separators: there is no straight in-and-out travel of waste water from the inlet to the outlet; instead, separator screens and a removable filter screen prevent grease, oil, and other wastes from

NO ONE DELIVERS LIKE ROCKFORD SEPARATORS



*Call today – you'll like
our customer service.*



*Tap into 40 years of
engineering experience.*



*Select from our extensive
inventories...*



*Put highly productive capabilities and
people to work on your custom project...*



Tap into 40 years of engineering experience.

entering the sewage system.

You'll like our '100% accessibility' design too. All our units' covers are easily removable, giving you fast and easy access – and helping you meet OSHA compliance for confined spaces without the need for breathing apparatus.

We move faster than our competition, with better, more reliable products, service and support.

Architects, engineers, building officials, health agencies, plumbing contractors, and other specifiers have come to rely on Rockford Separators for the utmost in quality, precision engineering and, most importantly,



Select from our extensive inventories... Or get a custom engineered product – from 1 gallon to 50,000 gallon, including double-wall construction!

quick turnaround time. Our extensive inventories, national presence and hands-on sales and support team combine to give you the right product for the job, faster and more efficiently than from any other source.

Call us today. We're ready to deliver.

Rockford Sanitary Systems

5159 28th Avenue, Rockford, IL 61109

Phone: (815) 229-5077 • (800) 747-5077

www.rkfdseparators.com



Need faster, more dependable performance from your separator source?

For 40 years, we've focused solely on separation. Our team is experienced in building custom, engineered-specific designs for customers that expect the best, whether it's for a Las Vegas casino, new 5-star restaurant, mall food court, or your neighborhood quick lube shop.

We move faster than our competition, with better, more reliable products, service and support.

Call us today. We're ready to deliver.



Meet our people.
Visit www.rkfdseparators.com



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Any size – from 1 gallon to 50,000 gallon, including double-wall construction!

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Plumbing Engineer's 2012 Manufacturer Spotlight



A True One-Stop Certification Shop

By Jin Luo, Senior Director IAPMO R&T

When we talk about IAPMO and IAPMO R&T's 76 years as a certification body, we are certainly emphasizing our three-quarter century's experience, knowledge and expertise in becoming North America's premier provider of certification services to manufacturers of plumbing products.

But something we also seek to convey is how much IAPMO R&T has adapted over the years and added more and more services to what has become one of the most comprehensive menus of certification services in the industry — all accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC).

Don't get me wrong, we are extremely proud of our top standing among providers of plumbing product certification services. But we are just as proud of the long list of complimentary and additional services we are able to provide. Check out all we do in addition to certifying plumbing products:

LOW LEAD CERTIFICATION — IAPMO R&T was one of the first third-party certification bodies in North America to offer listings to the various recently passed "low-lead" standards and laws.

EPA WATERSENSE® CERTIFICATION — To date, IAPMO R&T has certified thousands of products to all published WaterSense® specifications. A majority of products listed by WaterSense® are certified through IAPMO R&T.

GREEN CODES AND STANDARDS — IAPMO R&T certifies Green products in relation to their water-saving features in order to better meet today's global environmental needs.

DRINKING WATER ADDITIVES/TREATMENT UNITS/TOXICITY — Our Drinking Water Additives / Drinking Water Treatment Units / Toxicity certification offers the convenience of adding drinking water standard certification to your UPC certification with the same third-party certification body rather than dealing with multiple organizations.

EPA ENERGY STAR® — IAPMO R&T is recognized by the U.S. EPA to certify appliances, HVAC equipment, commercial food equipment, battery charging systems and roof products for the ENERGY STAR® product labeling system.

ELECTRICAL CERTIFICATION — ANSI and SCC electrical scope accreditation enables IAPMO R&T to expand its menu of certification services in order to

ease the burden placed on many clients who previously have had to certify the plumbing aspects of their products through IAPMO R&T and the electrical aspects through other third-party certification bodies.

SOLAR HEATING AND COOLING — IAPMO R&T's certification to the requirements of the Uniform Solar Energy Code® (USEC) is unique to the industry it serves; no other accredited certification body offers such certification that includes compliance to both the USEC and national/international standards.

MECHANICAL — IAPMO and IAPMO R&T have been certifying mechanical products to the requirements of the Uniform Mechanical Code® (UMC) since its first publication in 1967. We bring decades-strong expertise to the certification of such products as central AC and air-source heat pumps, ventilating fans, and range hoods.

FUEL GAS CERTIFICATION — We provide certification to those manufacturers wishing to add value and recognition to their fuel gas products, including noodle boilers, rice cookers, pressure cookers, ovens, barbecues and griddles, by having them certified.

RADIANT PRODUCTS CERTIFICATION — With the Radiant Professionals Alliance (RPA) joining The IAPMO Group, IAPMO R&T is uniquely qualified to provide certification for such radiant products as in-floor heating systems and general room heaters.

MATERIALS/COMPONENTS — IAPMO R&T provides consumer value and manufacturer peace of mind that the materials and components used in and on a particular product do not undermine the overall quality of the finished product.

SWIMMING POOLS — IAPMO R&T can handle both the plumbing and electrical aspects of certifying your swimming pool parts and components to ensure their safe operation.

MANUFACTURED HOMES / RVS — IAPMO R&T is the author of numerous standards governing the water-conveying products used in manufactured homes / recreational vehicles (RV).

FOOD EQUIPMENT / SANITATION — We also provide certification to products associated with the preparation, cooking and storage of food.

As you can see, IAPMO R&T is truly a one-stop shop for all of your product certification needs. Give us a call and discover how we can help your company secure market share with a mark of conformity that opens doors and eliminates doubt. ■

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Product News

Plumbing Engineer's Product of the Month



High efficiency urinals

Dura-Ware High Efficiency Urinals are engineered to combine attractiveness with versatility. Units feature a contoured interior to facilitate cleaning and are intended for mounting onto a finished wall from the front. Urinals mounted at 17" rim height comply with ANSI, ADA, UFAS accessibility requirements. **Acorn Engineering.**

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Upflush macerating unit

The new SANIACCESS 3 upflush macerating plumbing system from SFA Saniflo U.S.A. comes equipped with two easy-to-open panels atop the unit, providing ready access to the internal components for servicing. The product can accommodate a full bath, features powerful cutting action, operates quietly and discharges effluent through a 3/4-inch-diameter pipe that connects to the main plumbing system. **Saniflo.**

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on page 117

Grinder package system

The new 915 Shark Series Grinder Package System is a preassembled grinder system – complete with alarm and check valve – designed for new construction, retrofits and replacements. Utilizing our new and unique Tri-Slice™ cutter, this small yet extremely powerful 1/2 HP, 115 V grinder system provides over 250,000 cuts per minute and significantly eliminates the maintenance and clogging worries associated with other grinder and sewage ejector systems. **Zoeller.**



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on page 117



Redesigned ball valve

The Press System® PC585-70 cast bronze ball valve allows a leak to occur during testing if the press connection is not properly crimped. Designed for connection to rigid copper tubing in applications that include domestic hot and cold water, HVAC and process water. Two-piece body is manufactured from dezincification-resistant bronze, with a blowout-proof stem. Full-port design has chrome/nickel plated brass ball. Quarter-turn operation and bubble-tight shutoff at 250 psi. Sizes range from 1/2" – 2". **NIBCO Inc.**

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Speedrooter

The Speedrooter 92 features the Flexitube™ spring distributor tube which enhances the machine's durability. It allows the cable to feed and retract more smoothly, even if the frame has been damaged and abused. A cord wrap on the handle makes it easier to store the power cord and foot pedal. With the pulling power for long, tough jobs, General's Power Cable Feed drives and retracts 3/4", 5/8", and 1/2" cables easily at up to 20 ft./minute. To adjust to different cable sizes, simply adjust the knob on top of the feed. No screwdriver is required. **General Wire.**

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Form on page 117

Condensing boilers

With Harsco Industrial Patterson-Kelley's P-K MACH® dual fuel condensing boilers, switching from natural gas to propane is fast and easy. All it requires is flipping a simple toggle switch. No additional adjustments are required. Down time is minimized keeping you running in critical situations. P-K MACH® dual fuel boilers incorporate all of the advantages of single fuel P-K MACH® condensing boilers. The footprint is the same, the dual fuel boilers can move through a standard 36" doorway. Ultra high efficiency and full modulation saves energy and money. The unique ENVI® control allows cascade sequencing of up to 16 boilers. **Harsco Industrial, Patterson-Kelley.**



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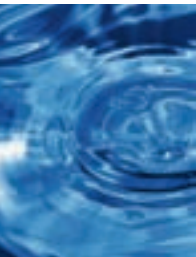
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- 5230 Series valves are ASSE 1017 listed for high flow point-of-distribution applications such as water heaters.
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Product News

Plumbing Engineer's Product of the Month



Grinnell G-PRESS fittings

The new G-PRESS Copper Fittings provide a complete line of mechanically joined press-fittings for sizes 1/2" through 2" copper tube, and include an innovative feature that helps to ensure a leak-tight seal. Designed to work with hard (drawn tempered), half-hard, and soft (annealed) copper tubes. This system uses a G-press profile, which has the advantage of a 3-point press, which includes two mechanical presses on either side of the bead that securely hold the tube in place and one hydraulic press that crimps the O-ring. GRINNELL Copper G-PRESS Fittings are quick to install and provide an economical, user friendly, flame-free installation. The fittings have a Leak-Before-Press feature molded into the O-ring in two positions which allows the installer to easily identify fittings that have not been pressed properly during the system test. Available in red brass and copper and use EPDM O-ring seals.

GRINNELL Mechanical Products

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Electric tankless water heaters

The Tronic 3000 and 5000 electric tankless series from Bosch eliminate the need for costly piping and gas line installation, freeing up valuable square footage inside a home. Unlike traditional tank units, Tronic products are tankless, in which the lack of stored hot water inside the unit eliminates standby heat losses, minimizes mineral and sediment build-up and significantly increases efficiency. These point-of-use products also eliminate wait time for hot water as well as piping heat losses. **Bosch.**

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Angle stop adapter valves

A 1/2" x 3/8" x 1/4" angle stop adapter valve is now available. Low-lead valves comply with all current lead-free laws, meaning they contain less than .25% weighted average lead content on wetted surfaces in plumbing systems and water quality/beverage dispensing applications. Comes in white polypropylene and brass with a white polypropylene collet and features an EPDM O-ring. Also available in 3/8" x 3/8" x 1/4" and 3/8" x 3/8" x 3/8" sizes. **John Guest USA.**

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Products for irrigation applications

Complete line of valves, fittings and flanges for use in residential and commercial irrigation, turf irrigation and agricultural water distribution includes the following: cast and ductile iron gate valves; wafer & lug butterfly valves with disc variations including nickel plated ductile iron, aluminum-bronze and stainless steel; lever operated valves; gear operated valves; and PVC products. Brass products include ball valves, gate valves, hose bibbs and threaded fittings and nipples. Sizes of various products range from 2" to 36".



Matco-Norca.

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Sprinkler system

The new "Corridor Sprinkler" uses Viking's patented flow-shaper technology to provide larger coverage areas at lower flow and pressure requirements. The VK638 is cULus Listed for 28 x 12 ft (8,5 x 3,7 m) and 28 x 14 ft (8,5 x 4,3 m) coverage areas, with the deflector installed up to 12 in (305 mm) below the ceiling. The 28 x 12 ft (8,5 x 3,7 m) coverage area is unique in the industry, providing a significant flow and pressure advantage for fire sprinkler systems where this area of coverage can be applied. **Viking.**

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Tyco acquires Shurjoint Piping Products

LANSDALE, PA. — Tyco has acquired Shurjoint Piping Products (Shurjoint), a leading OEM manufacturer for grooved and threaded piping components. Shurjoint will be integrated into Tyco's Fire Protection Products business unit. Financial terms were not announced.

Founded in 1974, Shurjoint introduced the SHURJOINT brand in the mid-1990s. Based in Taiwan and the U.S., Shurjoint currently offers over 3,000 piping components with a full line of grooved fittings, couplings, valves, ductile iron threaded pipe fittings and welding outlets in ½-inch to 96-inch sizes. SHURJOINT products are used with a variety of piping materials, including carbon steel, stainless steel, ductile iron, PVC, HDPE, CPVC and copper.

"This acquisition demonstrates Tyco's ongoing commitment to the

mechanical market. As a result, Tyco will broaden its grooved product portfolio and expertise in innovative mechanical solutions," said Colleen Repplier, president, Tyco Fire Protection Products. "Shurjoint is an excellent strategic fit to our business and allows us to improve service to the fire, HVAC, mining and industrial markets."

NYC plumbing code changes effective July 1

ONTARIO, CALIF. — A 2010 amendment to the New York City Plumbing Code requiring that a wide range of plumbing fixtures bear the WaterSense® label (or have been certified as meeting the same efficiency standards) if they are to be sold or installed within city limits went into effect on July 1.

Approved by Mayor Michael

Bloomberg in October 2010, Section PC 604 of the code was amended by adding a new subsection 604.4.1 that reads: "WaterSense program label required: Showerheads, private lavatory faucets, water closets and for urinals, the urinal flush valve or fixture/valve combination, shall meet the specifications required for the WaterSense program label and shall bear such label, or shall be approved in accordance with this code. Exception: Water closets in public restrooms."

The new requirements for each product (with the previous requirements in parentheses) are: showerheads, 2.0 gpm (2.5 gpm); private lavatory faucets, 1.5 gpm (2.2 gpm); water closets, 1.28 gpf (1.6 gpf); urinals, 0.5 gpf (1.0 gpf). The new requirements represent a 20–50 percent reduction in water usage from the previous standards.

Launched by the U.S. Environmental Protection Agency in January 2007, the WaterSense product-labeling program helps consumers identify high-performance, water-efficient fixtures. Products bearing the WaterSense label must not only save water but also perform as well or better than conventional models on the market.



IAPMO R&T, North America's premier third party certification body for plumbing and mechanical products, has been a licensed provider of WaterSense certification since 2007, certifying the first high-efficiency toilet (HET) to the standard in April of that year. To date, IAPMO R&T has certified thousands of lavatory faucet, toilet, urinal and showerhead models to the WaterSense specifications.

For more information on having products listed, contact Brenda Madonna (brenda.madonna@iapmort.org) at 877/4-UPC-MARK or visit www.iapmort.org.

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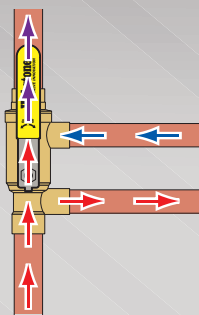
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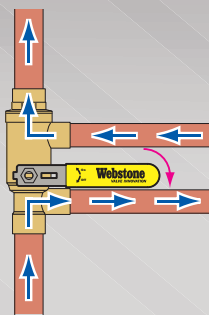
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2 I am engaged in plumbing engineering: ☐ Yes ☐ No

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☐ 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)

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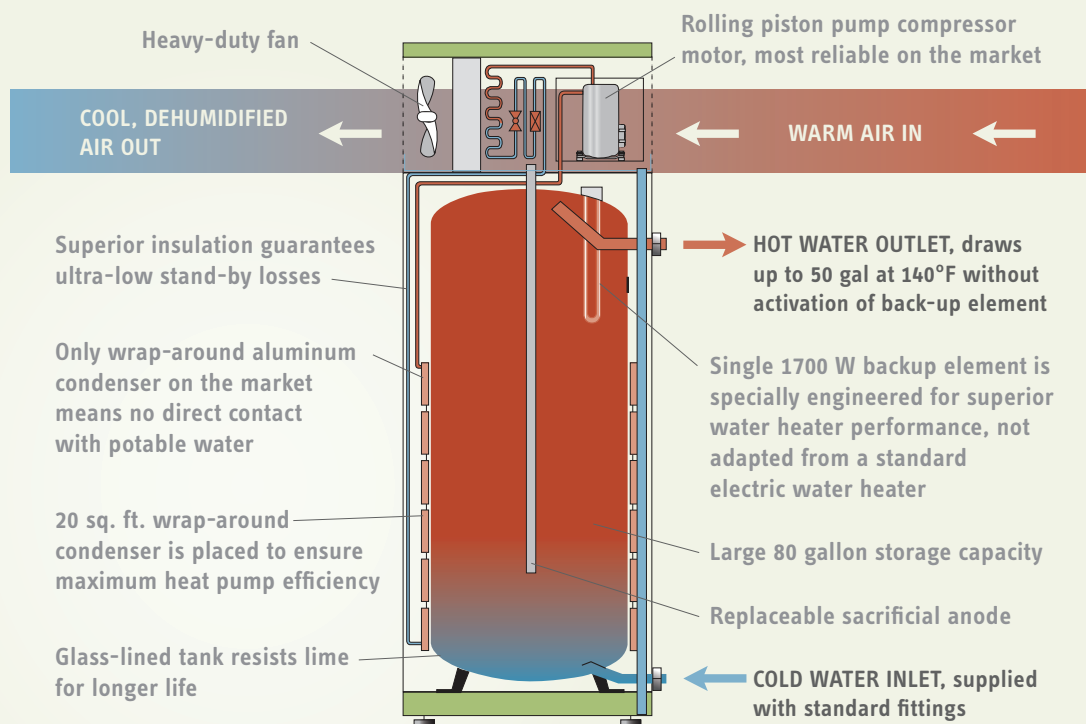


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