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COVER STORY Colorado dreamin'

No. 22 on the Top 100 Contractors Listing, RK Mechanical began 49 years ago in Nebraska and now is one of the most innovative, forward-thinking mechanical contractors in Colorado with a global reputation for excellence and bases its success on solid, advantageous relationships among customers, suppliers and employees. **p 26**

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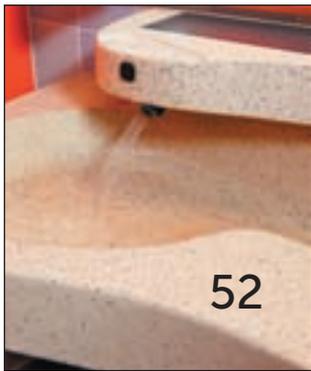
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Direct subscription inquiries to:

Cynthia Lewis, Creative Data Services
440 Quadrangle Dr Suite E
Bolingbrook, IL 60440
clewis@cds1976.com
630-739-0900 x203 Fax: 630-739-7648

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EDITORIAL OFFICES

2165 Shermer Road, Suite A
Northbrook, IL 60062
Phone: 847/564-1127
Fax: 847/564-1264,
publisher@tmbpublishing.com

OWNER

Tom M. Brown, Jr.

CHIEF EDITOR

John Mesenbrink

MANAGING EDITOR

James Schaible

COPY EDITOR

Marilyn Cunningham

CONTRIBUTING EDITORS

John Abularrage
Morris R. Beschloss
Richard DiToma
Dan Foley
Linda Jennings
Bob 'hot rod' Rohr
Ellen Rohr
Peter Schor

PRODUCTION MANAGER

Cate C. Brown

DIGITAL MEDIA MANAGER

Mark Bruno

ADMINISTRATIVE ASSISTANT

Sadie Smith

SALES OFFICES

MIDWEST, SOUTHEAST, EASTERN CANADA

David Schulte, Publisher
Phone: 847/564-1127
dave@tmbpublishing.com
2165 Shermer Road, Suite A
Northbrook, IL 60062
Fax: 847/564-1264

EAST

Brad Burnside
Phone: 847/564-1127
brad@tmbpublishing.com
2165 Shermer Road, Suite A
Northbrook, IL 60062
Fax: 847/564-1264

WEST, TEXAS

Diane Spangler
Phone: 714/839-6700
diane@tmbpublishing.com
P.O. Box 9802
Fountain Valley, CA 92728
Fax: 714/839-6777

Watts Water Technologies breaks ground at its Franklin, N.H. facility expansion project

FRANKLIN, N.H. — Chief editor John Mesenbrink was on hand to witness the Franklin, N.H. groundbreaking for its 30,000-sq.-ft. foundry expansion on March 26.

welcomed New Hampshire governor, John Lynch and Franklin Mayor, Ken Merrifield to the groundbreaking event. “This Watts facility is one of the largest factories in the state and



March 26 marked the groundbreaking for the Watts Franklin, N.H. facility expansion. This \$11 million investment will bring in more than 90 jobs and will bring back its regulator production from China.

Concentrating on its lead-free product line, the \$11 million investment will actually bring back jobs — and its regulator line — to the United States from China,



An inside look at one of the foundries in operation.

bringing more than 90 new jobs to the area.

David Coghlan, president and CEO of Watts Water Technologies,

it shows Watts’ commitment to the state of New Hampshire,” said governor Lynch.

Watts Water Technologies has been a leader in lead-free initiatives and the foundry expansion is further evidence of Watts’ commitment to providing quality and safe potable water products.

In support of its long-term growth strategy, Watts Water Technologies, Inc. announced its intent to pursue an expansion of its foundry manufacturing capabilities at what has become its largest North American manufacturing facility. Accordingly, Watts is initiating the planning and permitting process to ensure the foundry expansion project is managed to meet all local, state and federal guidelines.

By breaking ground on its 30,000 sq.-ft. expansion to its Franklin foundry, Watts is committed to the continued research, development



David Coghlan, president and CEO of Watts Water Technologies, addresses the audience at the Franklin groundbreaking.



New Hampshire governor John Lynch talks about the Watts expansion and its investment and commitment to the state of New Hampshire.

and testing of the highest quality lead free products in the industry. Franklin’s expansion will be completed by February 2013. “This is what separates the men from the boys,” said Coghlan, referring to Watts’ investment and commitment. “We could have expanded elsewhere at a lower operating cost but ultimately we wanted to eliminate any cross contamination risk involved. Here in Franklin we will have created a parallel manufacturing process — a leaded foundry and a lead-free foundry.”

NKBA names Bill Darcy as new CEO

HACKETTSTOWN, N.J. — The National Kitchen & Bath Association (NKBA) announced the promotion of Bill Darcy to CEO. Darcy will continue the leadership he began in April 2011 as executive vice president. As evidence of the positive impact his direction has provided,

the organization officially announced an increase in membership, bringing the total number of NKBA members from nearly 40,000 to more than 50,000.

Darcy began with the NKBA as the manager of marketing partnerships and has received

numerous promotions including manager of business development, a position in which he generated more than \$1 million in non-dues revenue for the association, followed by senior manager of marketing, director of marketing and most recently, as of April 2011, executive vice president.

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ACCA in action, RHC takes flight

BY BOB 'HOT ROD' ROHR

LAS VEGAS — ACCA just wrapped up its annual meeting at the Paris resort. It was encouraging to see the casino and streets of Vegas busy again. Hopefully that is a sign of the

economic recovery for which we are all waiting.

ACCA is to be commended for a nicely run event. There were plenty of ACCA staff on hand to help with check in, badge retrieval and guiding folks to the seminars. The Paris was

well suited for the size of the group. The seminar rooms were conveniently located along the main hall, across from the Expo hall. Without proper credentials I was only afforded a peek into the session rooms. Most sessions seemed well attended.

The Expo was in a room of the appropriate size. It was well lighted and provided large, easy to navigate aisles. I spoke with several dozen exhibitors, who were satisfied with the numbers and quality of the attendees. I had hoped to see more GEO products and companies exhibiting. GEO currently seems to be a hot commodity. The GEO industry is a nice bridge between the air side and the hydronic side.

As a member of the advisory committee, I also attended the Radiant & Hydronics Council (RHC) meeting. Chairman Dan Foley did a great job of keeping the meeting on topic and moving along. Emily Rogers, the ACCA director of energy policy, has been given the reins of the RHC as the first manager. Emily knows her way around the halls of Washington. By the meeting's end, she had a handful of handwritten notes and a substantial To Do list. Emily is up for the task and excited to get the RHC up to speed.

Exciting projects are cooking for the RHC. An e-newsletter, Radiant Trends, is launching. Look for a fall Hydronics Roundtable with a smaller "tabletop" trade show. A radiant-specific section of the ACCA website is also in the works, including a contractor directory. ACCA is well known for its development of standards. Look for new standards developed specifically for the RHC industry.

All in all, the hydronics industry has found a warm and welcoming home under the ACCA banner. Get involved and help shape where our industry is headed.

ACCA installs 2012-13 board of directors

ARLINGTON, VA. — Air Conditioning Contractors of America (ACCA), the nation's largest association of indoor environmental systems professionals, announced the installation of its 2012 – 13 board of directors and officers.

Last year's chairman, Joe Nichter of Comfort Systems USA Southwest in Chandler, Ariz., handed the leadership role to incoming chairman Laura DiFilippo of DiFilippo's Service Company in Paoli, Pa. DiFilippo will serve a one-year term. Nichter will serve this year as immediate past chairman.

Serving as senior vice chairman this year is Bobby Ring, Meyer & Depew Co. Inc. of Kenilworth, N.J.; secretary/treasurer is Dave Kyle, Trademasters Service Corp., Newington, Va. Other vice chairmen are Rich Imfeld, IC Refrigeration, Ceres, Calif.; Don Langston, Aire Rite Air Conditioning, Huntington Beach, Calif. and Phil London, Thermal Concepts Inc., Davie, Fla.

Directors not serving on the executive committee are Jerry Bosworth, Bosworth Air Conditioning, Galveston, Texas; Tommy Castellano, Castellano Air Conditioning Service, Tampa, Fla.; Ellis Guiles, TAG Mechanical Systems Inc., Syracuse, N.Y.; Paul Hobaica, Hobaica Services Inc., Phoenix, Ariz.; Steve Lauten, Total Air and Heat Co., Plano, Texas; Gary Marowski, Flame Furnace, Warren, Mich.; Narrissa Rampey, Air Assurance Co., Broken Arrow, Okla.; Steve Schmidt, Frederick Air Inc., Frederick, Md.; Mike Schumacher, Reliable Heating & Cooling Inc., St. Louis; Matt Todd, Entek Corporation, Longview, Wash. and Michael Weber, Thomas & Galbraith Heating and Cooling Inc., Cincinnati.

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Taco offers full-line BIM and CAD content

CRANSTON, R.I. — Taco continues to invest in BIM technology and digital modeling. Buyers and specifiers will soon have digital access to information they require for all Taco products



when designing or assembling HVAC and hydronic systems.

Work on Taco's new Innovation and Development Center is continuing at a fast pace. When complete, the building will offer a high-tech, hands-on learning environment for the most advanced HVAC equipment available today.

The Taco Innovation & Development Center will be a state-of-the-art learning and training

facility, complete with new classroom spaces, conference rooms, a business center, and functional labs for testing and teaching. The HVAC products and systems will be visible throughout the entire facility forming "Living Laboratories" that allow for close-up viewing, hands-on learning and teaching.

Taco Expands FloPro Factory Training for 2012

Taco's FloPro Factory Training offers a broad range of professional development opportunities for plumbing and heating contractors in 2012. Participants learn to grow their hydronic expertise and boost profitability. All hands-on classes offer useful information and experience. Their popular webinar series will be held once a month, free of charge. The company will focus its efforts on its most popular, John Barba-driven course: the 'Compleat' Boiler Room (CBR). These 2-day factory classes are NATE-Recognized

and NORA Approved. This two-day program is designed for and will benefit any experienced hydronics installer or designer. Class information and online registration is available at www.floproteam.com.

Course Schedule:

"Field Factory" Training

- April 12-13 — BJ Terroni — Bensalem, Pa. — Compleat Boiler Room

- May 10-11 — Wales-Darby — Warren, N.J. — Hydronic Control Strategies

- June 28-29 — Wales-Darby — Islandia, N.Y. — Hydronic Control Strategies

- July 23-27 — JTG Muir — Berkley, Calif. — Compleat Boiler Room

- Aug 2-3 — McCoy Sales — Denver — Compleat Boiler Room Factory Training at Taco

- July 19-20 CBR - Cranston, R.I.

- Aug. 23-24 CBR - Cranston, R.I.

- Sept. 27-28 CBR - Cranston, R.I.

- Oct. 11-12 CBR - Cranston, RI.

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Centrotherm system approved by A.O. Smith and Bradford White

ALBANY, N.Y. — Centrotherm Eco Systems® InnoFlue® can now be utilized on all A.O. Smith residential power direct vented (PDV) tanked water heaters that accept PVC or CPVC. This includes units under the A.O. Smith, GSW, State and John Wood brands.

“A.O. Smith’s approval of InnoFlue will provide a significant competitive edge for the company’s product lines. This will provide owners of A.O. Smith power direct vented residential tanked water heaters with a flue gas delivery system that will eliminate restrictions associated with flue gas

temperatures. Our flexible venting options allow for the reuse of an existing B-vent to be used as a chase,” notes Joel Dzekorius, vice president of operations.

Bradford White has approved InnoFlue for their high efficiency condensing commercial, power direct vent commercial, residential power direct vent and residential power vent model series.

“The addition of Bradford-White’s commercial and residential lines to the InnoFlue family accentuates the equipment manufacturer’s confidence in InnoFlue as the undisputed leader in polymeric

venting options. We are confident that Bradford-White customers will be excited, knowing they can now be provided with a safe, economically feasible and environmentally friendly venting option that has been certified to the UL-1738 & ULC-S636 safety standards,” states James Molloy, vice president of business development.

Eemax Inc. plans expansion

OXFORD, CONN. — For nearly a quarter century, Eemax Inc. has grown both physically and in terms of sales. With further expansion anticipated, the company has outgrown its Oxford, Conn. headquarters and is searching locally for larger facilities, with hopes of moving by this September.

U.S. Rep. Jim Himes (D-Conn., 4th District) recently paid a visit to the Eemax headquarters. Himes aggressively works to connect small businesses with government resources and strives to ensure that local businesses have access to the capital they need to invest in their operations.



(Left to right) Eemax’s Jeff Hankins, vice president of operations and technology, and Kevin Ruppelt, president and CEO explain to U.S. Rep Jim Himes how their company has managed to grow even during challenging economic times. Eemax has outgrown its Oxford headquarters and is currently searching for larger facilities in the local area.

“Small businesses are the heart of our economy,” said Himes. “They create almost all of our new jobs and provide a daily demonstration of the entrepreneurial spirit.”

Eemax is a positive example of a successful and growing U.S.-based manufacturing facility. “Eemax exhibits true American spirit by manufacturing innovative ‘green’ products that save energy, water, time, space, and money,” said Congressman Himes. “Their high quality products create jobs, because they are manufactured right here in our own backyard.”

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PHCC celebrates 130 years of professionalism

FALLS CHURCH, VA. — This year marks the 130th anniversary of the Plumbing-Heating-Cooling Contractors—National Association (PHCC). PHCC has several special observances planned to recognize the vital role its members have served in safeguarding the health, safety and comfort of society and protecting the environment.

“Since its founding in 1883, PHCC has continued to build on its unique heritage and bring members together to advance the industry,” said PHCC President Keith Bienvenu, Bienvenu Brothers Plumbing, Metairie, La. “We are both proud of our past accomplishments and very much focused on the future. As the industry evolves with new services, technologies, standards and regulations, PHCC continues to provide the high level of education, training and advocacy that plumbing

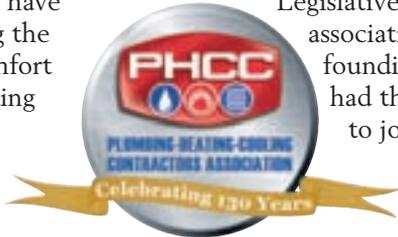
and HVACR contractors need in an evolved business environment. That has been the hallmark of our association throughout its 130-year history, and it continues today.”

During PHCC’s April 25-26 Legislative Conference, the association will honor the 125 founding contractors that had the vision and courage to join together to address industry issues. The centerpiece of this event will be a reception on Capitol Hill named in recognition of Col. George D. Scott, the first president of PHCC. National legislators have been invited to join PHCC members in the celebration.

The anniversary observance will continue during CONNECT 2012 (www.phccweb.org/connect) Oct. 3-5 in Philadelphia. There, PHCC members can not only join in the anniversary celebrations, but also

participate in a variety of seminars and networking opportunities that can help discover modern-day ways to continue the strong tradition of protecting the health and safety of the nation today.

Look for updates on the 130th anniversary celebration at www.phccweb.org.



Cannistraro counts down to 50 with new blog

WATERTOWN, MASS. — The year 2012 marks J.C. Cannistraro’s 49th year in the mechanical construction industry. During that time the company has been nationally recognized for its BIM and prefabrication capabilities, its quality work on complex projects, its corporate responsibility and its reputation for “building with intelligence.”

Cannistraro is launching an all-new blog titled “Building with Intelligence 365.” Visit online at www.cannistraro.com.

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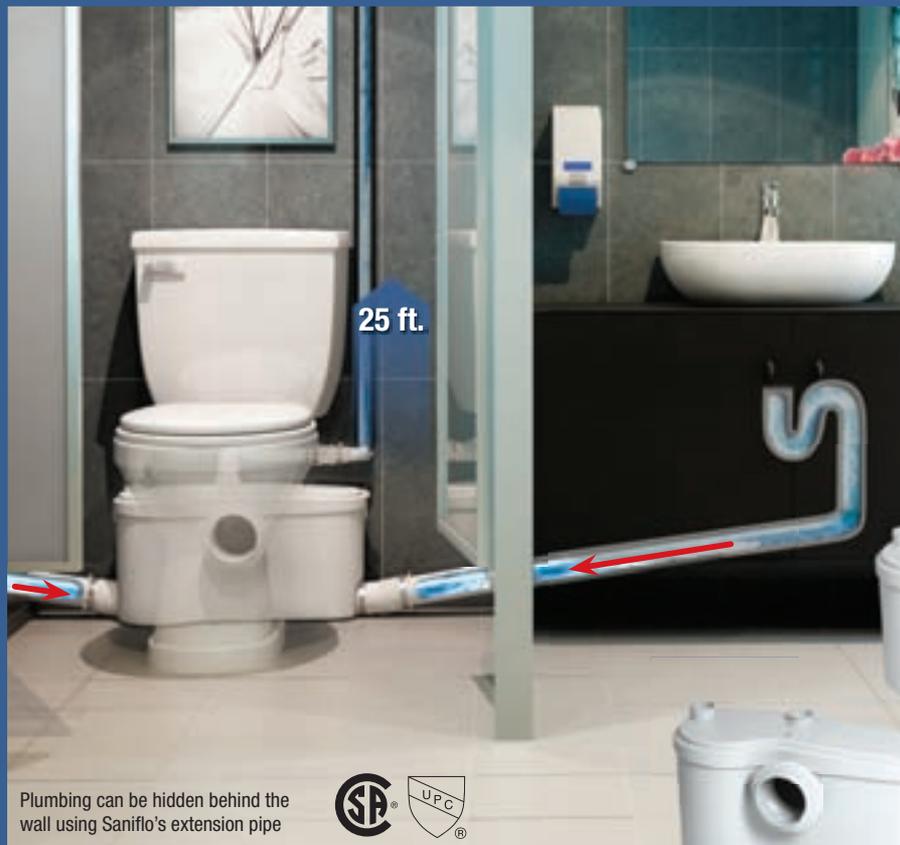
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Dahl makes changes to sales team

MISSISSAUGA, ONTARIO — Dahl recently announced several enhancements to the company's sales team that will position the company for growth. Gaylen Anderson will transition to his new role as an independent sales representative for Dahl and Thomas Husebye will take on the role of vice president of sales. Dahl also recently welcomed Mark Trenbeth as OEM sales manager.

Watts expands Kinnaird's role

NORTH ANDOVER, MASS. — Watts announced that **Malcolm Kinnaird**, vice president, channel management & marketing for North America, has moved into an expanded role as vice president, sales,



marketing and business development — Americas. Kinnaird will take on new responsibility for the U.S, Canadian, Mexican and Latin American market development and new business and channel partnerships for the company. He will take a broader leadership role in defining the company's vertical market and acquisition strategies across the Americas.

Component Hardware expands sales/marketing team

LAKESWOOD, N.J. — Component Hardware Group has appointed Lois Schneck as director of marketing and promoted Kevin Tumpey to business development and sales operations manager.

PMI welcomes new committee co-chairs

ROLLING MEADOWS, ILL. — Plumbing Manufacturers International's

(PMI's) president, Stewart Yang of Kohler Co., has made his selections for two chairs to serve on PMI's Focus and Standing Committees. The three-year terms for these positions officially begin with the 2012 PMI Spring Conference. His decision was based upon PMI meeting attendance, leadership, expertise and an overall commitment to PMI.

The Marketing Council will again be co-chaired by Rick Reles, vice president of kitchens, cast iron and corporate accounts worldwide for Kohler Co., who is back for a second term. Reles will serve alongside current co-chair Tim Doyle of Amerikam.

The Government Affairs Standing Committee will be co-chaired by Daniel Gleiberman, manager of product compliance and government affairs for Sloan Valve Company. Gleiberman will co-chair the committee with David MacNair of InSinkErator.

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In Memoriam: Donald F. Dickerson, P.E., CPD

CHICAGO — The American Society of Plumbing Engineers (ASPE)



regrets to inform the plumbing industry that Donald F. Dickerson, PE, CPD, FASPE, one of the founders of ASPE, died on Saturday, March 24, at Tarzana Memorial

Hospital. Don was the loving husband of Maria Dickerson and Marion Randall Dickerson, father to Christine, April, and Richard Dickerson, and grandfather to Eric Trafton and Heather Dickerson.

Don was instrumental in founding ASPE in 1964. He served as the Society's first President during its

beginnings in Los Angeles and later as its first National President. Don frequently spoke of ASPE as his fourth child. "Don loved the Society, and all he wanted was for ASPE to succeed and become a major force within the plumbing industry," says current ASPE President William F. Hughes Jr., CPD, LEED AP, FASPE.

Don was also very involved with the International Association of Plumbing and Mechanical Officials (IAPMO). He served as the chair of the ANSI A40 Safety Requirements for Plumbing Committee (the original American National Standard), accredited by the American National Standards Institute, and was a voting member on the IAPMO Uniform Plumbing Code Technical Committee for more than four decades. IAPMO CEO and World Plumbing Council Chair GP

Russ Chaney says, "Don created a lasting legacy to which all of us can aspire. Individuals like Don only come around once in a century. His vision and dedication to our industry have never been replicated, and his desire to see ASPE as a leading organization in our industry is now being fulfilled. I will miss Don's perspective and his unstinting desire to ensure that our industry is the very best it can be."

Don served as a California State Building Commissioner for the State of California Plumbing Code. He founded Donald F. Dickerson Associates in 1961, and his company is now celebrating its 50th year of existence.

"Don and his expertise, critique, and wit will be missed by his family, the Society, and the plumbing industry at large," says Hughes.

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PVF

Independent U.S. businesses providing economic leadership

BY MORRIE BESCHLOSS CONTRIBUTING WRITER

The recent rebound of American employment, economic expansion and a quickened pulse of gross domestic product growth is a direct result of the "exceptionalism" of tens of thousands of America's independent businesses.

Although Big Government, Big Businesses and "Big" politicians are quick to lay claim to this unexpected, if still fragile, turn of events, my contacts with several hundred of these astute "small" business magnates have convinced me that this backbone of America's long-term economic durability is primarily

happenings to redirect the status quo at an ever-quickening pace.

These factors have resulted in energy, export, agricultural and technological breakthroughs that have created additional job opportunities. Such payroll additions are matched by the increased revenues generated by such outstanding, independently owned and managed companies. With over two-thirds of the 140 million potential U.S. workforce encompassed within the "independent business" environment, consumer confidence, the psychological drumbeat of popular optimism, is beginning to improve as the first signs of spring start to beckon.

All Americans owe a debt of gratitude to the continued courage of these business titans, who never gave up, but have always looked ahead.

Apartment demand strength accelerates building momentum

The surging demand for rental apartments that surprised even most optimistic observers in 2011 is due for continued strength throughout this year and possibly through 2013 and 2014.

The swing toward rentals is tangible; it is supplemented by those unable to get mortgages and those who feel that rock bottom has not yet been reached. The apartment vacancy rate, which had dropped to 5.2% in 2011, is expected to drop even further in the upcoming months. This trend has been accompanied by rental increases, especially in New York, Chicago and San Francisco, where rents have skyrocketed 8 to 10%.

With demand heating up, builders are increasingly attracted to this post-recession phenomenon. After hitting a 78% apartment unit expansion in 2011, another 25% is expected to fatten up multi-family unit statistics this year. This could cause concern with an overbuilding bubble, depending on whether the rental mania is a passing fancy or a more permanent feature in the U.S. housing sector development.

As the federal government attempts to facilitate a more orderly foreclosure approach by requiring banks to arbitrarily reduce outstanding mortgages, and as an improving economy attracts low interest, low price buyers, more potential home buyers may be coming back into the marketplace. This may cause the ingredients of an overbuilding bubble of new apartments to develop.

How these discordant factors come into play will determine whether the current rental fascination is a temporary expedient or represents a temporary detour in long-term home buying.

U.S. creative, technological, ideological genius unmatched

While recent job improvements, especially in the manufacturing arena, are grabbing most media headlines,

As the federal government attempts to facilitate a more orderly foreclosure approach by requiring banks to arbitrarily reduce outstanding mortgages, and as an improving economy attracts low interest, low price buyers, more potential home buyers may be coming back into the marketplace.



the result of privately-owned manufacturers, distributors, contractors, retailers and service organizations taking the "bull by the horns" in an iffy economic climate.

While the Beltway benevolence bubble attempts to right all wrongs by inflating all-time high debt and deficits, the courageous independent men and women heading up organizations ranging from minuscule to those with \$1 billion annual revenues, have taken it upon themselves to move the great U.S. value-added machine forward, despite the increasing impediment of cascading governmental financial and business-hostile regulations.

While multi-national, multi-billion dollar conglomerates have become a meaningful fact of life in projecting the U.S. into world leadership, it's the privately-owned businesses that have made their stand within the borders of the 50 states and that know their specific business sectors far better than super corporate giants that need international businesses and are primarily focused on the bottom line.

With the lightning-fast changes necessary in this nano-second age of staying ahead of the game, it takes a "The buck stops here." attitude to make the crucial hands-on decisions as world events coincide with domestic



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| PVF | CONTINUED FROM PAGE 20

the unsurpassed creative geniuses nurtured within America's 50 states is becoming the "breakthrough" aspect of America's exceptionalism within the current turmoil, typifying an economy barely able to get off its haunches.

In reflecting on the 300-year history from "agricultural subsistence" through the evolution of the industrial age, into the era of post-mechanization technology, the current proliferation of previously unknown ideas breakthrough is practically an American monopoly.

The Newtons, Galileos, DaVincis, Einsteins and Watts may have emanated from Europe's bosom, but the Bill Gates, Steve Jobs, Mark Zuckers, Eric Schmidts and many others are as all-American as Monday Night Football, apple pie and the Stars and Stripes.

In contemplating the particular climate, genesis and characteristics that have nurtured such a historical leap forward, the following outstanding aspects come to mind:

1. No particular nationality, cultural heritage, religious faith or economic philosophy can lay claim to the seedbed that has produced such a disproportionately successful cultivating flourish. Within this diversity, and the admixture of the co-mingling of its best and brightest, has emerged technological, artistic and ideological intensity unmatched anywhere in the world, separately or cumulatively.

2) Despite the current U.S. domestic mountain of disputation, monetary restraints and anti-intellectual confrontation, America's leading universities are the most sought after by the world's academicians and students alike. Even with the obviously transparent clash of confrontational ideologies, the outburst of accelerating innovations, not even dreamed of a generation ago, are blooming forth with breathless rapidity. Compared to all the world's competing nations, this has provided the admixture from which unbridled genius is born.

3) Most important are the openness of discussion and the lack of prejudice against youthful endeavors that has made it possible for a sub-40s generation to climb to the top of the heap and be lauded for its practicality of ideas, rather than subdued by the traditional devotion to decades of experience. These may have provided age-old wisdom, but hardly the uninhibited passion of explosive new ideas. These are unfettered by the strictures of innovative limitations, often a visible restraint to the emergence of a "brave new world" beset by increasing political correctness.

New home buying no longer fashionable

When the late President Herbert Hoover — long the demon of the 1930s Great Depression — uttered his defining slogan, "A chicken in every pot, a car in every garage." it sounded on increasingly deaf ears as the turgid Depression years wore on.

A repetition of this ironic mandate seems increasingly applicable to the home-owning mania that transcended the post-World War II period for the next 60 years. Million-a-year new home sales had become a target before the turn of the millennium and the number was only expected to grow higher as the new century wore on.

As the annualized "bump" over the 250,000 low seems to have been exceeded in the last quarter 2011, optimistic observers believe this slump is strictly attributable to the economic collapse and will come back as long-term

recovery hits its stride.

But don't bet on it. Like other long-term fashions (such as, everyone must have a college education), home owning is becoming increasingly unfashionable.

Personal surveys, as well as more reputable national ones, indicate that home owning is overwhelmingly becoming regarded as a liability rather than an asset. This is partially due to the shock of seeing hundreds of thousands, if not millions, of people seeing their resale values slip below the cost of outstanding mortgages. This has engendered an attitude that such mortgages themselves are a dangerous liability, leading to short sales and foreclosures.

With national employment hovering near an all-time high rate and personal incomes appearing stuck in the mud for most job holders, the shift to rentals seems to have become a permanent style change that's not expected to reverse in the foreseeable future. Even the possibility that hallowed mortgage interest deductions may be reduced or eliminated increasingly hovers over the shrinking number of potential home buyers.

The trend toward rentals is having an increasingly salutary effect on multi-family apartment buildings in the major cities, as well as on the maintenance of existing homes in the suburbs and rural areas. Even more important is a surge toward energy-saving home improvements as well as toward expansion and maintenance of existing homes.

Although this will never replace the jobs of thousands of construction workers and building developers who lost positions in the wake of the 2008 mid-year crash, mechanical contractors and expert craftsmen are finding new opportunities in the residential building arena, even if the pace is still frustratingly anemic.

Federal Reserve's six-year interest rate freeze carries dangerous pitfalls

The Fed Fund's 0 to 0.25% unprecedented interest rate freeze, begun in December 2008 and due to extend throughout 2014, was initiated to create lending bases to facilitate more vigorous U.S. economic growth and faster recovery.

But, as has been proven by actual performance since this low-ball Fed Funds approach was manifested three years ago, attractive monetary availability has had previous little impact on meaningful growth. Single family homes, start-up businesses and personal credit access have been almost negligible in stimulating a generally moribund economy or in rescuing millions of Americans mired in the miasma of poverty.

Furthermore, such "interest-free money" has created the following unintended consequences:

* It has greatly restricted lending policies by most commercial banks, which continue to be rewarded by the Federal Reserve Board for any financial reserves that they maintain above those that are required by Fed mandate.

* The continuation of practically no return on money saved by individuals, especially those verging on or into retirement. It literally forces those needing return on investments to take risks well beyond the conservative approach recommended to prudent retirees.

* With trillions of dollars reposing on corporate, as well as banks' balance sheets, and even per capita savings rates returning to a positive posture, the resultant surplus of



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cheap money has hardly not become a factor dragging a moribund economy out of the hole in which it seems to be dug.

Like all institutions, the Federal Reserve Board relies on historical repetition as a guide to future improvement. As a celebrated student of the Great Depression, Fed chairman Ben Bernanke dwells on how the first phase of that economic disaster came to an end in 1937. This was met immediately by higher taxes and government budget cutbacks to bring into balance the excessive government spending programs that had helped to lead the U.S. out of the worst aspects of the post 1920s deflation era. This policy resulted in a new depressing phase, with only the onset of the Second World War and America's role as "arsenal of democracy" reversing the tide.

It's everyone's hope that the Federal Reserve Board's creditable leadership will prove up to the task of not repeating past mistakes. The wisdom of the Fed's action will go a long way toward establishing the right path for America's long-term recovery.

U.S. manufacturing faces increasing skills crisis

The good news brightening the outlook for U.S. manufacturing is that, after 12 years of declines, 109,000

workers were added to America's payrolls in 2010, and an even larger number, 237,000, in 2011. To top that off, 50,000 more joined manufacturing payrolls in January of this year alone.

But the bad news is a schism has developed between skilled job requirements and availability. This growing 50% vacancy rate has now reached 600,000, stultifying the nation's effort to reach parity between job openings and potential employee availability.

The simple answer lies in the accelerated changes in the type of manufacturing efforts prevalent in today's United States and its worthy efforts to broaden the scope of its industrial base ever wider in the times ahead.

According to professional analyses of those manufacturers with the widest vacancy rates, these bemoan skills deficiencies in such specialties as machinists, specific crafts training and technological knowhow, matching the changing priorities demanded by residual U.S. manufacturers and those anxious to bring production or servicing "back into house" within the 50 United States.

Much of this distortion is due to both increased productivity and the changing nature of manufacturing activity now taking place in America's once-dominant industrial sector. Gone are such major assembly line type jobs as existed until the mid-1950s, covering steel and

textile mills, automotive, various types of metal fabrication, electronics and an even greater number of workers in mining and utilities.

This dislocation of job openings, as well as the major leap forward orchestrated by the technological evolution taking place in America's overall industrial stratosphere, has elicited a desperate need for a government-subsidized private sector effort. This is necessary to massively train candidates for the multi-million offerings that are due to be created, in addition to those already in existence, in the years ahead.

This frustration may be totally unrequited under a federal government that neither understands nor feels obligated to put such an obvious job-filling and industrial expansion system in motion. While pundits like me may recite the obvious, it will take a national leadership both qualified and motivated to make "skills training" befitting today's manufacturing needs a critical priority. ●

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| TOP 100 CONTRACTORS |

RK Mechanical: diversification and flexibility keys to success

BY JOHN MESENBRINK

With jobs slowly coming back and the recession's stranglehold loosening its grip, some industry experts are cautiously optimistic that the economy is moving in the right direction. The general consensus of the respondents from the 2012 Top 100 was that 2011 was a rough road but things are moving forward, albeit at a slow pace. Last year's reports of decreased margins, reduced backlogs and increased competition for bids are hopefully just that, in the rear view. It's going to take some time, and realistically, the economy may not return to what it was in years past.

Every year *Phc News* conducts its Top 100 Contractors listing. And, every year dozens of stories are generated based on the results of those responding. In what can be described as a tough past couple of years, economically speaking, it is nice to hear success stories from the field.

Phc News recently caught up with one success story in particular, RK Mechanical, Denver, which actually reported a double-digit percentage change increase in total revenue from the previous year. RK Mechanical (No. 22 on the 2012 Top 100 Listing, page 28) has positioned itself for success by diversification and an increased investment within the industry and its business relationships.

Rocky Mountain high

Formed in 1963 as a small plumbing contractor in northeast Nebraska, RK Mechanical has grown into a true industry leader through innovation, flexibility and diversification. The company was incorporated in Colorado in 1985 and provides contracting, service, steel, fabrication and oil and gas to commercial, industrial and multi-family residential markets. With a business foundation rooted in contracting, building services and steel, it provides customers with integrated, end-to-end solutions on projects varying size, type, complexity and location.

RK Mechanical has used the down economy as a unique opportunity to re-invest in its corporate infrastructure, review its long-term plans and goals, and more clearly

define its targeted path. By investing in personnel development, equipment and real estate (RK recently opened a second fabrication facility in Henderson, Colo.) RK Mechanical solidly positioned itself for future growth through diversification.

"Diversify," says Barbara Jacobs, marketing manager, RK Mechanical, when giving advice on dealing with this particularly rough economy. "Think innovatively about all of the options out there. What you've always done, how you always have done it may no longer work in this new economy. Explore other options — new markets, new customers, new services, new technologies, new accreditations (federal qualifications) or even a new approach/way of thinking. It's easy to get comfortable with what's familiar but it's important to remain nimble enough to adapt to the evolving market and customer requirements."

Employees — the face of the company

RK Mechanical recognizes that its people are its No. 1 asset. "We are a relationship-based business and understand that our success is a direct derivative of the success and satisfaction of our employees. Our corporate culture is one of hard work and endless opportunity — we don't believe in a 'status-quo,'" says Jacobs. Instead, by investing in ongoing training, personal and professional development, RK cultivates an environment rooted in advancement, competitiveness, balance and overall well being.

As a national and international contractor, RK Mechanical is capable of successfully meeting the challenges of any project regardless of any location. RK Mechanical uses



RK Mechanical was responsible for the major mechanical equipment, including air handling units, primary and secondary pumping systems for heating and cooling, high efficiency condensing hot water boilers, and an air cooled chiller at the Fort Carson Physical Fitness Facility project, Fort Carson, Colo. RK Mechanical also incorporated a solar heating water system based on 30% of the domestic water heating load to further improve efficiency.

its two centrally located fabrication facilities — Denver and Henderson — and wholly-owned transportation fleet to prefabricate and deliver 80%+ of the mechanical systems it installs. Prefabrication not only mitigates the on-site challenges posed by geography and weather, the controlled environment also allows for heightened safety and quality oversight. In addition, prefabrication means fewer personnel and hours expended on site constructing various assemblies which ultimately translates to savings for the customer.

Giving back

Active in its communities for decades through involvement with a number of different organizations and charities, RK Mechanical recently established the RK Foundation to more effectively manage corporate philanthropic participation. Overseen by the Kinning family, the RK Foundation allocates both funds and volunteer hours to various deserving local and national organizations. ●

➔ See Top 100 Listing on p 28



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TOP 100 CONTRACTORS

	COMPANY	City, State	COMPANY	City, State
>\$1B+	1. EMCOR Group, Inc.	Norwalk, CT	51. Colonial/Webb Contractors*	Richmond, VA
	2. Comfort Systems, USA	Houston, TX	52. Warwick Plbg & Htg. Corp.*	Newport News, VA
\$301M+	3. ARS/Rescue Rooter.....	Memphis, TN	53. Pioneer Pipe*	Marietta, OH
	4. ACCO Engineered Systems*	Glendale, CA	54. Baker Group	Des Moines, IA
	5. McKinstry	Seattle, WA	55. Ivey Mechanical*	Kosciusko, MS
	6. Southland Industries	Dulles, VA	56. Charles E. Jarrell Contracting	Earth City, MO
	7. TDIndustries	Dallas, TX	57. Corrigan Co.*	St. Louis, MO
	8. Kinetic Systems, Inc.*	Union City, CA	58. Dorvin D. Leis Co.Inc.....	Kahului, HI
	9. Roto Rooter*	Cincinnati, OH	59. Pierce Associates Inc.	Alexandria, VA
	10. John E. Green Co.	Highland Park, MI	60. Nashville Machine Co. Inc.	Nashville, TN
\$200 million to \$300M	11. Limbach Facility Services	Pittsburgh, PA	61. CCI Mechanical Inc.	Salt Lake City, UT
	12. BMW Constructors Inc.	Indianapolis, IN	62. Great Lakes Plumbing & Heating.....	Chicago, IL
	13. J.H. Kelly LLC.....	Longview, WA	63. BCH Mechanical Inc.	Largo, FL
	14. Mr. Rooter LLC.....	Waco, TX	64. Dominion Mechanical Contractors Inc.	Fairfax, VA
	15. The Brandt Companies, LLC.....	Carrollton, TX	65. A.O. Reed & Co.*.....	San Diego, CA
	16. The Hill Group	Franklin Park, IL	66. W.G. Tomko Inc.*	Finleyville, PA
	17. U.S. Engineering Co.....	Kansas City, MO	67. Martin Petersen Co. Inc.*	Kenosha, WI
	18. Harris Companies	Saint Paul, MN	68. Monterey Mechanical Co.	Oakland, CA
	19. J.F. Ahern Co.	Fond Du Lac, WI	69. Western Allied Corp.....	Santa Fe Springs, CA
	20. John W. Danforth Co.	Tonawanda, NY	70. Upchurch Plumbing Inc.	Greenwood, MS
\$100 million to \$199.9 million	21. Environmental Air Systems	Greensboro, NC	71. Wayne Automatic Fire Sprinklers Inc.....	Ocoee, FL
	22. RK Mechanical Inc.	Denver, CO	72. The DiGesare Group	Schenectady, NY
	23. Durr Mechanical Construction, Inc.	New York, NY	73. Goyette Mechanical Co.....	Flint, MI
	24. Mechanical Inc.	Freeport, IL	74. Gem Plumbing & Heating	Lincoln, RI
	25. Murphy Company	St. Louis, MO	75. Hill York Corp.*	Fort Lauderdale, FL
	26. Egan Company	Brooklyn Park, MN	76. Rock Hill Mechanical Corp.*	St. Louis, MO
	27. W.E. Bowers*.....	Beltsville, MD	77. Nash Inc.	Coleman, FL
	28. Coastal Mechanical Group	Melbourne, FL	78. DECCO, Inc.*	Brookline, NH
	29. Harder Mechanical Contractors*	Portland, OR	79. Sagamore Plumbing & Heating, Inc. ...	Weymouth, MA
	30. P1 Group*.....	Lenexa, KS	80. Johnson & Jordan	Scarborough, ME
\$60 million to \$99.9 million	31. Joule' Industrial Contractors.....	Gibbstown, NJ	81. H & H Industries Inc.	Madison, WI
	32. MMC Contractors, Inc.	Overland Park, KS	82. AZCO Inc.*	Appleton, WI
	33. Metropolitan Mechanical*	Eden Prairie, MN	83. Robert Gibb & Sons Inc.	Fargo, ND
	34. Sauer Holdings*	Pittsburgh, PA	84. R. T. Moore Company Inc.	Indianapolis, IN
	35. Fire & Life Safety America*	Richmond, VA	85. CJ Erickson Plumbing Co.	Alsip, IL
	36. Murray Company	Rancho Dominguez, CA	86. Cullum Constructors Inc.	North Charleston, SC
	37. J.C. Cannistraro, LLC	Watertown, MA	87. Comfort Engineers Inc.	Durham, NC
	38. VSC Fire & Security, Inc.....	Ashland, VA	88. My Plumber Heating & Cooling	Manassas, VA
	39. Benjamin Franklin Franchises*	Sarasota, FL	89. Ewing-Doherty Mechanical Inc.....	Bensenville, IL
	40. Lee Company.....	Franklin, TN	90. Peed Plumbing Inc.	Manassas, VA
\$4 million to \$19.9 million	41. Grunau Co.*	Oak Creek, WI	91. Nagelbush Mechanical*	Fort Lauderdale, FL
	42. Letsos Company.....	Houston, TX	92. Campito Plumbing & Heating Inc.	Latham, NY
	43. Corval Group, Inc.	St. Paul, MN	93. McDaniel Fire Systems LLC	Valparaiso, IN
	44. Dinamek Industries/Mexico	Austin, TX	94. Van Sant Plumbing	Mount Airy, MD
	45. Critchfield Mechanical Inc.*	San Jose, CA	95. Gulf States Plumbing & Mech. Inc.	Houston, TX
	46. Pacific Rim Mechanical Contractors, Inc..	San Diego, CA	96. Bears Plumbing	Naples, FL
	47. Hermanson Co., LLP*	Kent, WA	97. Caguas Mechanical Contractor, Inc	Caguas, PR
	48. WJ O'Neil Company	Livonia, MI	98. Village Plumbing and Home Services.....	Houston, TX
	49. Herman Goldner Co. Inc.	Philadelphia, PA	99. Senninger Plumbing Company.....	Louisville, KY
	50. University Mechanical Contractors Inc*	Mukilteo, WA	100. Lawrence Plumbing LLC.....	Vandergrift, PA

* Editor's Estimate

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TOP CONTRACTORS BY REGION

West

COMPANY **CITY/STATE**

1. ACCO Engineered Systems.....Glendale, CA (4)
2. McKinstry.....Seattle, WA (5)
3. Kinetic Systems, Inc.....Union City, CA (8)
4. J.H. Kelly.....Longview, WA (13)
5. RK Mechanical.....Denver, CO (22)
6. Harder Mechanical Contractors.....Portland, OR (29)
7. Murray Company.....Rancho Dominguez, CA (36)
8. Critchfield Mechanical Inc.....San Jose, CA (45)
9. Pacific Rim Mechanical.....San Diego (46)
10. Hermanson Co., LLP.....Kent, WA (47)

Biggest Gainers

Company **%change**

1. Environmental Air 88%
2. Dinamek Ind. 49%
3. WJ O'Neil 42%
4. Peed Plbg. 41%
5. Pacific Rim 38%
6. Egan Co. 36%
7. John W. Danforth 34%
8. Dominion Mech. 30%
9. BMW Const. 28%
10. Ewing-Doherty 25%
11. John E. Green 25%
12. RK Mechanical 24%
13. U.S. Engineering 21%
14. Johnson & Jordan 21%
15. McKinstry 20%
16. Herman Goldner 20%
17. Gulf States 20%
18. DiGesare Group 18%
19. Robert Gibb & Son 18%
20. Western Allied 18%
21. H&H Industries 17%
22. Upchurch Plbg. 16%
23. Bears Plbg. 15%
24. My Plumber 13%
25. The Hill Group 13%

South

COMPANY **CITY/STATE**

1. Comfort Systems USA.....Houston, TX (2)
2. ARS/Rescue Rooter.....Memphis, TN (3)
3. TDIndustries.....Dallas, TX (7)
4. Mr. Rooter LLC.....Waco, TX (14)
5. The Brandt Companies, LLC.....Carrollton, TX (15)
6. Environmental Air Systems.....Greensboro, NC (21)
7. Coastal Mechanical Group.....Melbourne, FL (28)
8. Benjamin Franklin Franchises.....Sarasota, FL (39)
9. Lee Company.....Franklin, TN (40)
10. Letsos Company.....Houston, TX (42)

Midwest

COMPANY **CITY/STATE**

1. Roto Rooter.....Cincinnati, Ohio (9)
2. John E. Green Co.....Highland Park, MI (10)
3. BMW Constructors Inc.....Indianapolis, IN (12)
4. The Hill Group.....Franklin Park, IL (16)
5. U.S. Engineering Co.....Kansas City, MO (17)
6. Harris Companies.....Saint Paul, MN (18)
7. J.F. Ahern Co.....Fond Du Lac, WI (19)
8. Mechanical Inc.....Freeport, IL (24)
9. Murphy Company.....St. Louis, MO (25)
10. Egan Company.....Brooklyn Park, MN (26)

East

COMPANY **CITY/STATE**

1. EMCOR Group Inc.....Norwalk, CT (1)
2. Southland Industries.....Dulles, VA (6)
3. Limabach Facility Services.....Pittsburgh, PA (11)
4. John W. Danforth Co.....Tonawanda, NY (20)
5. Durr Mechanical Construction, Inc.....New York, NY (23)
6. W.E. Bowers.....Beltsville, MD (27)
7. Joule Industrial Contractors.....Gibbstown, NJ (31)
8. Sauer Holdings.....Pittsburgh, PA (34)
9. Fire & Life Safety America.....Richmond, VA (35)
10. J.C. Cannistraro, LLC.....Watertown, MA (37)

INFORMATION PROVIDED BELOW IS BASED UPON RESPONSES PROVIDED BY TOP 100 CONTRACTORS

REVENUE SPENT BY CATEGORY

Plumbing

Rank **Revenue**

1. Mr. Rooter LLC.....\$220,000,000
2. Comfort Systems, USA.....\$199,370,000
3. Corval Group, Inc.....\$158,000,000
4. Southland Industries.....\$95,000,000
5. The Brandt Companies, LLC.....\$56,000,000
6. RK Mechanical Inc.....\$51,982,055
7. John E. Green Co.....\$50,000,000
8. U.S. Engineering Co.....\$43,000,000
9. Murray Company.....\$38,290,000
10. John W. Danforth Co.....\$37,000,000

Piping

Rank **Revenue**

1. BMW Constructors Inc.....\$145,260,000
2. John E. Green Co.....\$140,000,000
3. Southland Industries.....\$128,000,000
4. Joule Industrial Contractors.....\$105,000,000
5. J.H. Kelly LLC.....\$97,604,000
6. U.S. Engineering Co.....\$95,000,000
7. Murphy Company.....\$83,347,550
8. Durr Mechanical Construction Inc.....\$80,644,320
9. The Brandt Companies, LLC.....\$79,000,000
10. J.C. Cannistraro, LLC.....\$75,600,000

Hydronics

Rank **Revenue**

1. Mechanical Inc.....\$61,256,000
2. MMC Contractors, Inc.....\$45,000,000
3. The Hill Group.....\$41,000,000
4. Harris Companies.....\$40,000,000
5. Herman Goldner Co. Inc.....\$36,100,000
6. John W. Danforth Co.....\$33,000,000
7. J.F. Ahern Co.....\$31,830,180
8. Durr Mechanical Construction Inc.....\$27,773,000
9. Murray Company.....\$27,350,000
10. BMW Constructors Inc.....\$26,900,000

Waste/Wastewater Treatment

Rank **Revenue**

1. The Hill Group.....\$55,000,000
2. J.F. Ahern Co.....\$53,489,433
3. Durr Mechanical Construction Inc.....\$41,508,000
4. John W. Danforth Co.....\$40,000,000
5. Monterey Mechanical Co.....\$34,400,000
6. Dinamek Industries/Mexico.....\$20,000,000
7. Corval Group, Inc.....\$12,000,000
8. Mechanical Inc.....\$10,944,000
9. Murray Company.....\$10,940,000
10. J.H. Kelly LLC.....\$10,849,000

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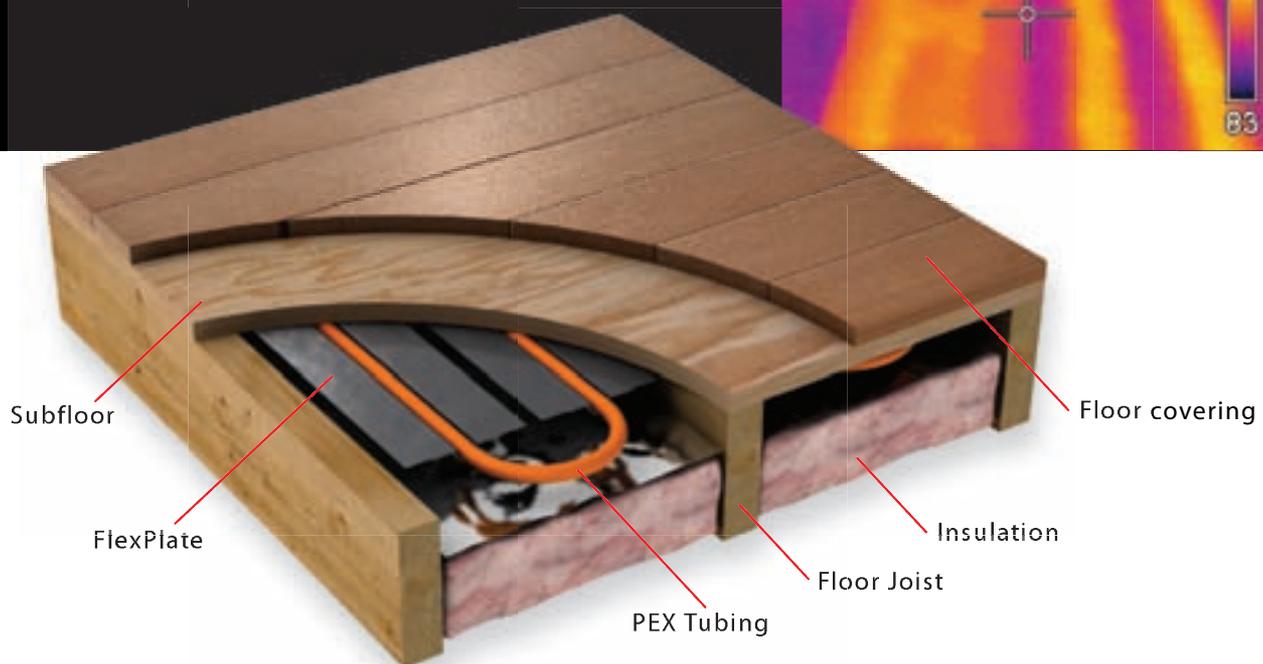
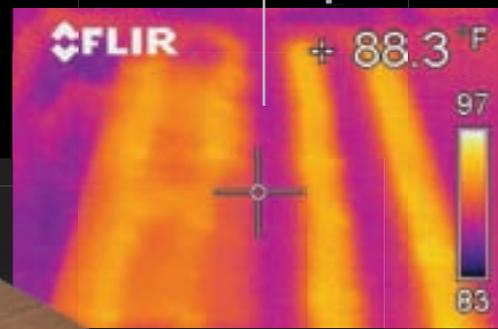
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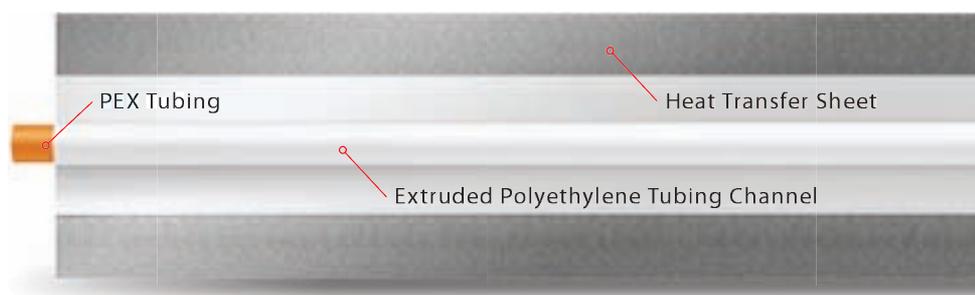
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Piping Needs Met on Federal Modernization Project



The Edith Green – Wendell Wyatt Federal Building in downtown Portland, Ore., is currently undergoing a massive modernization that will make it an operationally and economically efficient high-performance green building. The 439,000-square-foot high rise is operated by the U.S. General Services Administration (GSA) and houses offices of the Federal Bureau of Investigation, the Drug Enforcement Agency and the Internal Revenue Service, among others.

The building was commissioned in 1974. Many of its systems were at the end of their useful life and needed to be replaced. The \$139 million modernization project, part of the 2009 American Recovery and Reinvestment Act, will make necessary upgrades to the aging building infrastructure, while achieving a 50% reduction in energy use from the existing building. The newly renovated building will include a number of efficient, sustainable and innovative technologies that are expected to achieve a LEED Platinum rating.

Pipe priorities

Interface Engineering, headquartered in Portland, with several offices worldwide, is serving as the project's plumbing engineer.

Based on its reputation for idealism, ecological sensitivity, technical expertise and cost-efficient design over its 40-year history, the firm was an obvious fit for the project. According to the firm's Portland-based senior plumbing designer, Dennis Kangas, CPD, the original systems were old and were using more energy than updated systems would. He said that energy saving and sustainability measures were top priorities from the earliest stages of design. The typically overlooked aspect of green building, the plumbing, HVAC and rain harvesting pipe systems, play a large role in achieving those measures.

McKinstry, a full-service design, build, operation and maintenance firm, is serving as the project's mechanical and plumbing contractor. Project manager Eric Peterson explained that he wanted to improve the building's efficiency while keeping an eye on costs.

At the start of the project, Ridgeline Mechanical Sales presented Aquatherm to Interface. Because the project's goal was a LEED Platinum rating, Aquatherm's polypropylene-random (PP-R) piping was chosen to fulfill the structure's plumbing requirements. Interface principal, Jon Gray, was quite familiar with Aquatherm's highly engineered plastic pipe systems,

which have been used around the world for nearly 40 years in a huge range of applications.

"We have been doing work overseas for many years, and I had seen Aquatherm used on jobs throughout Europe and the Middle East. I had also visited the Aquatherm factory in Germany and seen the product made. I've been sold on the product for many years and had been waiting for the market to ripen. It seemed like the Edith Green building was a perfect fit," Gray said. He explained that PP-R was ideal for a number of reasons. "With reclaimed/re-used water, using copper is not your first choice for rainwater distribution, because the copper will get eaten up by the soft water. With Aquatherm, we were able to use the same pipe material for potable and non-potable water, so you're not mixing piping materials in the system, which can cause a lot of problems. Also, the pricing came in about the same as copper."

The project needed to follow the Facilities Standards for the Public Buildings Service (P-100), which establishes design standards and criteria for new buildings, major and minor alterations and work in historic structures for the Public Buildings Service (PBS) of the GSA. The P-100 stated that no plastic was allowed, so Interface used a variance



As of October 2011 McKinstry had installed Aquatherm pipe for the building's first eight stories or so for the domestic, radiant and harvested rainwater.

to allow for Aquatherm's use. "We explained that using this pipe instead of the other options was going to be to their advantage," Kangas added, noting that PP-R's natural insulation value (a natural R-value of 1) was also a big selling point.

Heat fusion connects pipe systems

McKinstry used 1 1/2"-diameter Aquatherm Climatherm® PP-R piping for the building's new radiant system. The Climatherm runs around the perimeter of the building; fusion outlets connect the perimeter piping into the rest of the system. The fusion outlets were huge labor savers, since they allow installers to simply drill into the supply pipe then heat fuse the fusion outlet fitting into place wherever needed.

All Aquatherm pipe is connected via heat fusion, a process often used in natural-gas piping because of its reliability. Heat fusion bonds both sides of a joint into a single, homogenous material without the use of chemicals or mechanical connections, which eliminates systemic weaknesses and fail-points in the pipe.

Because the Green-Wyatt building was the first project in which Howard S. Wright and McKinstry had used Aquatherm on a large scale, "the learning curve for installing it has been steep," said Bob Blodgette, McKinstry's plumbing supervisor. "We are getting more comfortable with it. It can be a bit time-consuming, but recently we have been seeing faster times."

For the potable water supply lines, McKinstry utilized Aquatherm's 1/2" diameter Greenpipe® pressure piping,

which is especially suited for hot and cold potable water and food-grade applications. Corrosion resistant Greenpipe is made with environmentally friendly Fusiolen PP-R material and is recyclable, energy efficient and PVC-free.

Using gray skies for good

Wright wanted to capitalize on the rain that soaks the Pacific Northwest every winter. While a graywater system was initially considered, it was determined that substantial water conservation could be achieved by harvesting the area's generous rainwater. Rainwater is gathered from the main building roof, the PV solar array and plaza level drainage. Initially, it was going to be stored in large tanks in the penthouse. That plan was switched to one incorporating a large storage tank in the basement, which had previously been the FBI's shooting range. The

entire shooting range was used as a cistern that holds 150,000 – 160,000 gallons.

The rainwater is UV sterilized and used in the reclaimed system, with Aquatherm's Lilac piping transporting it to low-flow toilets and urinals. (Lilac is the same PP-R material as the rest of Aquatherm's products but is colored to differentiate it from potable water.) Even though Aquatherm PP-R piping was relatively new to both the general contractor and installer on the job, "It has been a matter of staying with it," said Dave Lusher, sales representative for Harrington Industrial Plastics, the project's Aquatherm piping distributor. Ridgeline Mechanical Sales worked extensively with Harrington to present, train and shorten McKinstry's learning curve.

"Slowly but surely the old-school people came over and accepted that Aquatherm is a good alternative. It's one of those situations where the customers say, 'We've always used carbon steel.' It's a paradigm shift for them," explained Lusher.

McKinstry was also impressed with the piping system's warranty. When installed by Aquatherm-trained and certified technicians, the piping and fittings carry a 10-year, multimillion-dollar warranty covering product liability, personal injury, property damage and incidentals.

While the building will not likely be completed until sometime in 2013, as of October 2011 McKinstry had installed Aquatherm pipe for the building's first eight stories or so for the domestic, radiant and harvested rainwater. In all, the firm estimates that more than 130,000 linear feet of Aquatherm PP-R piping will be used on the project. ●



Aquatherm's Lilac piping is colored to differentiate potable water use. It is estimated that more than 130,000 linear feet of Aquatherm PP-R piping will be used on the project. Aquatherm's PP-R material is recyclable, energy efficient and PVC-free.

Accommodating Piping Movement Generated by Seismic Forces: Using Grooved Mechanical Pipe Joining Methods

BY DAVE HUDSON, SENIOR ENGINEER AT VICTAULIC

Piping systems in earthquake-prone areas are exposed to forces and movements beyond normal operating conditions. Seismic forces can cause extensive damage when piping systems are not designed to accommodate this movement. Unique design benefits in being able to provide both rigid and flexible pipe joints have enabled grooved piping systems to become a standard pipe joining method in HVAC, plumbing, fire protection, mining, industrial, utilities, oilfields, water and wastewater systems around the world. This joining method is also widely accepted by engineers on projects in areas with seismic activity because of its proven reliability and integrity. The following article provides a guideline for HVAC piping system design for seismic conditions.

Grooved mechanical piping components can be used to accommodate piping movement generated by seismic forces in a variety of piping conditions, however each must be considered individually during the design phase to ensure the products are properly utilized to accommodate the anticipated movement. These conditions include:

- Code-regulated systems with adequate earthquake bracing
- Unregulated systems with little or no earthquake bracing
- Seismic joint connections between independently moving sections
- Buried systems

There are a number of grooved products designed to accommodate movement generated by seismic forces. Some even include built-in stress relief within the grooved mechanical joint. The four basic components used in the grooved pipe joining method include the grooved pipe, the housing segments, the bolts/nuts and the gasket. The grooved pipe can be prepared with either a roll groove for a standard wall and lighter wall pipe, or a cut groove for standard wall and heavier wall pipe. Both roll- and cut-grooved pipe will provide the same pressure rating and mechanical strength for standard wall pipe.

The coupling housing performs several functions as an integral part



Seismic swing joints add flexibility to the piping system to help reduce pipe stress and potential system damage.

of the pipe joint. The housing segments fully enclose the elastomer gasket and secure it into position for a proper seal. They also engage the pipe around the full pipe circumference to create a unified joint. The bolts and nuts hold the housings together around the pipe, while the synthetic elastomer gasket creates a triple-seal. A tension seal is created as the gasket is stretched around the pipe, and a compression seal is created as the coupling housing presses the gasket onto the pipe. Finally, the sealing lips of the gasket are forced down onto the pipe end when the system is energized. All of these features result in a leak-tight, self-restrained joint.

Couplings can be quickly and easily assembled and disassembled. This, in combination with a union at every joint, reduces labor costs and permits easy system access for maintenance, repair, component replacement and retrofits. Fittings can also be loosely assembled and rotated to line up with mating components before the couplings are tightened. This eases work in tight places and around existing pipe, structures, and equipment.

Grooved mechanical pipe joining systems provide many mechanical design features that are useful in systems exposed to earthquake conditions. The flexibility of flexible

grooved couplings reduces the transmission of stresses through a piping system, while the gasket dampens vibration. When flexibility is not desired, rigid couplings can be used. Flexible couplings provide discontinuity at each joint, which helps minimize pipeline stresses generated during system movement. Where design considerations permit, flexible couplings can be used at changes in direction to provide stress relief through deflection for small differential movements.

The main approach to piping a building to accommodate seismic activity is to use a rigid piping system that will minimize overall piping movement. The use of all flexible couplings could result in excessive movement that may affect other pipe and equipment, despite being within the capability of the grooved coupling. Typically, more than 95 percent of the grooved couplings used in a system will be rigid, while the remainder will be grooved flexible couplings, which allow for linear, angular and rotational movement in areas as needed.

When large, differential movement between piping sections is anticipated such as at building seismic joints, seismic swing joints, comprised of grooved flexible couplings, pipe nipples and grooved elbows may be required. Seismic

swing joints provide simultaneous movement in all directions, allowing building sections to move differently during an earthquake. Adding flexibility to the piping system to accommodate this movement will prevent potential system damage and can be achieved by using a seismic swing joint or with multiple grooved flexible couplings using piping geometry. The exact method is determined by the size of the pipe and the amount and type of movement to be accommodated.

Typical locations for piping seismic joints include building seismic joints, between floors to accommodate inter-story drift, and where piping enters base isolated buildings. Because swing joints accommodate a considerable amount of movement, they are usually hung with spring hangers or cable supports. The piping on either side of the swing joint must be anchored so that the differential building movements are isolated to the swing joint.

Designing piping systems to accommodate the movement

generated by seismic forces can be complex; however, grooved couplings provide piping design flexibility and can reduce scheduling pressures and labor challenges because they are easier and faster to install than other pipe-joining methods. In fact, some of the world's most notable structures have incorporated grooved technology for its seismic performance. The use of grooved mechanical piping systems helped engineers accommodate piping movement generated by seismic forces as well as other building movements such as sway, settlement, and thermal expansion and contraction.

Most manufacturers provide in-depth design data for each of the seismic piping conditions. Some manufacturers, like Victaulic, have even taken advanced measures in testing their mechanical couplings. At the ATLSS center, a nationally recognized Network for Earthquake Engineering Simulations located at Lehigh University in Easton, PA, Victaulic exposed their couplings to

several seismic tests. One particular test included a simulation of the 1994 Northridge, California earthquake. The test performance in accordance with industry code requirements subjected the Victaulic products to accelerations up to 50 percent greater than those from the Northridge simulation. In all instances the results were no change in pressure and no leaks.

Using grooved mechanical pipe joining methods and grooved products help ensure a successful design at every level, when looking to accommodate movement generated by seismic forces. Their proven reliability and integrity under adverse conditions help give design engineers confidence and their speed and ease of installation ensures contractors stay on schedule while minimizing safety concerns. ●

A senior product engineer for Victaulic, David L. Hudson is a practicing mechanical engineer with 31 years of experience. He can be reached at dhudson@victaulic.com.

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Enchanted in New Mexico

Father/son team builds success in Santa Fe

36

To understand this contracting firm, let's define the word enchantment. Enchantment is all about captivation, a feeling of wonder for something unusual and exciting. Of course, New Mexico's "Land of Enchantment" theme helps to set the stage.

The base camp for Enchantment Refrigeration is a few miles outside of Santa Fe. A closer look shows that the company fits the description well. There's a sense of wonder and curiosity in all that they do.

With a total of six employees, Enchantment is a father/son-managed operation with some very interesting twists and turns. Note their fondness for all things mechanical or the R-60-insulated, "belly-up" shop they built or Dad's insistence that before he'd install

new, super-efficient HVAC systems in a customer's home he'd first test it in his own home. Then there's the 13-foot long, über-customized motorcycle that son Leroy's been known to take out for estimates.

The Santa Fe area is in the cool, semi-arid climate zone, characterized by frigid winters and hazy, hot summers (very hot). A typical day in July may start as a 50°F morning, peak at 100°F midday and soften to 70°F by nightfall. The next day could start colder and hit near-griddle temps by afternoon. Customer demands, and tempers, flare with the rigors of an ever-changing weatherscape, so, of course, the equipment Enchantment installs must be up to the challenge.

In the beginning

Joe Salazar began the business in 1984. His son, Leroy, joined the following year, after graduating with a B.A. degree in operations management from New Mexico State University. "From day one, my dad insisted that I go to college before I could get close to the company," Leroy explained. "It was for my own benefit."

Joe Salazar knew what it was like to be in the trade without the advantage of a formal college education. He entered the field in 1961, right after high school and worked for an HVAC firm that provided him with a firm foundation and hands-on experience. As a master journeyman, and after 21 years of loyal work for the company, Joe's salary topped off at a mere \$9.75 an hour. It was time to move on.

Initially, Salazar was hesitant to put all his eggs in one basket. "I wanted to create a full service company," Joe said, "so we opened up shop." The company started out in Joe's garage. A few years later, as the business grew, they outgrew the garage office.

Today, Enchantment's home base is a super-efficient, 1,600-square foot, radiantly-heated structure with four different heating zones powered by an 80 MBH Laars MiniTherm boiler, two Taco 007 circulators and five zone valves. Having acquired a wide variety of metal fabrication and mechanical equipment to plow through all types and varieties of plumbing and mechanical and HVAC jobsite demands, it's safe to say the Salazars can set aside those early concerns about placing all the eggs in one basket.

Clients of Enchantment Refrigeration always get a custom fit system for whatever their needs may be. "We design and fabricate heating and cooling systems for a wide range of residential and commercial customer needs," explained Leroy. "Today, as we've expanded and diversified, our territory, range and focus can stay on track with seasonal work. And with contracted residential and commercial maintenance work, our employees have a steady source of work year round."



Joe Salazar performing routine maintenance inspection on one of the five one-ton Fujitsu heat pumps installed in a Santa Fe residence

New installs, maintenance contracts

Contributing to the steady source of work for Enchantment's crews are the maintenance contracts they hold with many companies and schools in the area.

At the Pojoaque Valley Schools in Santa Fe, Enchantment Refrigeration has been contracted to perform regular quarterly maintenance checks for the past 16 years at all campuses. Enchantment maintains equipment installed by previous contractors. They've also replaced equipment and installed new technology as well, including Taco recirculating pumps at the senior high campus.

Just a short distance away, at Santa Fe's K - 4 campus, they know that mechanical systems are ready for routine maintenance work. They arrive to clean and service Laars boilers, lubricate large Taco recirculating pump stations and oil Taco pump motors.

"There are very few HVAC systems we don't work with or install," said Leroy. "We favor equipment manufactured by Taco, Watts, Fujitsu and Laars. Their systems hold up real well, even in a harsh environment like ours."

Enchantment Refrigeration prefers to steer potential customers in the right direction based on personal experience with the products they're installing. "We install the products in our homes first to make sure that what we're selling works just as it's promised to do," said Leroy.

Last year, Enchantment installed a three-ton Fujitsu system in Joe's home. "We prefer Fujitsu because their products hold up so well, are extremely energy efficient, and the



Irvin Marin, service technician, cleaning filters on the indoor Fujitsu pump in Joe Salazar's home

technical support is among the best we've found. Our rep in Albuquerque, Madeline Schultz, is always available if we need her," explained Leroy.

In a typical year, Enchantment may install 30 Fujitsu mini-split systems. Though, last year, they installed 50. "We vary widely from residential to commercial, from the smallest single-zone units at 9,000 Btus to multi-zone systems with a huge assortment of air-handling options that include wall units and ceiling cassettes."

Leroy says that the air-to-air heat pumps have impressed them most. The systems still provided heat when record-breaking lows tumbled into the -20 F range last winter. "Homes were still getting heat. Not a single customer complained that their homes weren't warm enough, even though the systems are rated for operation down to 5 F. (Fujitsu's newest RLS2 residential heat pumps - 9,000, 12,000 to 15,000 Btus -

are rated for operation down to -5 F at efficiencies up to 27.2 Seer).

Insert music for "The Good, the Bad and the Ugly"

Joe assures that there've been good, bad and ugly days in an economy that's tested the merit of everyone in the Santa Fe area. When the economy took its epic nosedive a few years ago, Enchantment struggled for work. Unwilling to lay off any of their six employees, Joe and Leroy came up with a variety of work to keep them busy. They pulled money out of the bank on more than one occasion to make payroll. "Everyone has a family to support," he said, "so any work our employees could get, they were extremely grateful for. We had to get pretty creative at times."

Sales are important, but Joe and Leroy are just as attentive to customer service. "That's what leads to referrals," says Joe. "We're always there when a customer needs us."

High adrenalin down time

Once the customers are satisfied and the assignment board is full, Leroy and Joe look for action-oriented down time. After turning a wrench all day, running refrigerant lines or cleaning three-pass boilers, Leroy and Joe are eager to work on their latest project, a motorcycle.

Make no mistake, it's no factory machine. The trike, often referred to as "The Cadillac," is the length of a normal sized car, sports a 454 Chevy engine, 400 turbo tranny, 750 Edelbrock carburetor and a 22-gallon Coors keg gas tank.

With the air cleaner cover and rear lights from a '64 Cadillac and electric seats with built-in heating and cooling, it's got all the comforts of home. ●



Joe greases Taco recirculating pumps at the K - 4 campus of Pojoaque Valley Schools.

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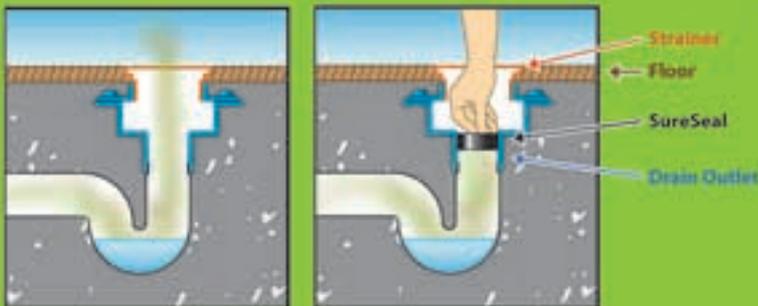
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FROM THE FIELD

Web presence and social media

BY DAN FOLEY CONTRIBUTING WRITER

I started my company in April of 2002, and one of the first orders of business was to figure out how to finance my new enterprise. I had a pretty solid cash reserve for personal expenses that would hold me over for a year or more. I did not have enough to finance the start-up on top of this.

I decided to meet with my banker to negotiate a business loan. I made an appointment and met with the branch manager in her office. The conversation went something like this:

Me: "I would like to get a loan for my mechanical contracting business."

Banker: "That is great Mr. Foley. We would love to help you out. How long have you been in business?"

Me: "About three weeks."

Banker:

Me: "Is there a problem?"

Banker: "No problem, Mr. Foley. Come back in about two years and we'll see where you are."

Me: "Thank you for your time. I won't need the loan in two years."

I realized that this would be a self-financed venture and some things would be done on a shoestring budget. We grew pretty quickly but very little was spent on marketing as I relied heavily on my business contacts and word of mouth. At a minimum, I felt like a Web presence was required, so I had acquired domain names. I then had a friend of an old high school friend put together a website. It was done on a tight budget, and it looked like it.

I disliked it so much that I reverted to just a static page with my company contact information. After a couple of years or so, the web hosting company disappeared along with our page. It didn't seem to affect business, so I just left it alone for the next several years.

I have now been in business for almost a decade. I never did go back to see that banker about the loan, and my penny-pinching ways have evolved into setting reasonable budgets that allow for doing things the right way.

Last fall, a series of events led me to conclude that it was time for Foley Mechanical to freshen up its image and brand. I now provide mechanical work for an internationally prominent architect, David Jameson, and his direct but constructive critique of my logo led to a new logo design, truck design, and shirt design. I have to say, I thought liked the old logo well enough, but I absolutely love the clean look of the new design.

Over lunch while sketching out ideas on the proverbial napkin, Jameson even suggested jobsite signs for me (and for his jobsites) that would be made using reflective street-sign steel and stainless steel piping.

I also decided to revive my website. I still owned the domain names but had learned my lesson regarding doing things on the cheap. I wanted it done right, so this time I hired a professional public relations and online marketing consultant, Laura Duran of Laura Duran & Associates (www.lauraduranPR.com). I had worked with Laura a couple of years ago on a trade press feature article and admired her writing style and professionalism. And I

knew that she was up on all the latest online marketing practices. She was the very first person, several years ago, to convince me to even have a personal Facebook page.

We met to go over my website design, and we even took up architect Jameson's generous offer to join us and provide some design suggestions. It was a collaborative effort. Laura took Jameson's conceptual sketches and my vision on our corporate philosophy and expertly crafted a website that achieved exactly what I was looking for.

After discussing our goals and design ideas for the website, Laura developed a website for me on a Wordpress platform. (See www.foleymechnical.com.) It was designed so that at first glance, architects and owners can see the types of projects that we work on and know they're in the right place. This kind of website is search-engine friendly and easy to make changes to without the ongoing support of website code experts, like websites of the past. And, it allows me to have a blog and my Facebook business page integrated right onto the site (more on that in a moment).

That day, after we wrapped up the goals and conceptual design of our website, the topic of discussion shifted to newer forms of media and communication, such as that blog and Facebook business page I just mentioned. My initial assumption was that social media is for teenagers, and I told Laura that I would listen, but I wanted no part of it. This was not the image I wanted for Foley Mechanical.

Laura looked at me and, for a second, she hesitated. Looking back, I'm thinking she probably had two thoughts: 1. I have an idiot for a client. 2. Get me out of here!

Instead, over a beer, Laura broke out her laptop, opened up her Social Media Marketing 101 presentation, and patiently guided me through the basics of how communication has changed with the convergence of technology, communication, and social collaboration, and how, on several levels, it could really benefit my company.

Laura put things in perspective for me. Marketing through a website or through social media is not magic and not done with smoke and mirrors. It is the same relationship marketing that I have done since I started my company, only now it is even more efficient and powerful. It is conveying the exact same messages and value to a greater audience through the power of technology and the viral nature of the newer social layer that now stretches across that internet.

I'm still a novice when it comes to online marketing. I am just learning about search engine optimization, website metrics, and increasing our web traffic. The names of new social media channels fly around in conversation, and I can't even recall what they are.

I'm sharing this story not to present myself as an expert

➔ Turn to FOLEY on p 42



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| FROM THE FIELD | CONTINUED FROM PAGE 40

on the topic — I'm at the opposite end of the spectrum. Instead I wanted to show you how and why I became a willing student and participant, and how even an amateur can have a professional web presence by partnering with the right people and right company.

You will know they are the right partner if they make it easier, not more confusing.

I have been exposed to marketing companies that obfuscate all of the recent web marketing topics and practices and make it all appear to be a big convoluted mystery, just so they hook you and you hire them. They throw around obscure terms without ever really starting from a basic level of understanding, and I truly believe they do this to leverage your lack of expertise on the subject.

Authentic online marketing professionals will be very successful at it themselves, and they will start from where you are and help you understand why all of it is so important and has so much potential. Look at their website and social media channels. How many Twitter followers do they have? Do they share helpful information with their communities via a blog? Are they someone you can feel like you would like to get to know and do business with? Are they building trust and relationships and contributing in a collaborative way? If so,

they get how the new digital world of marketing and the old "real life" world of trust and relationship building come together.

While I am new to Web marketing and social media, many of you have been there for years and are market leaders. Several of my contractor friends have websites I admire:

- Jeffrey "Heatboy" Young, Climatec: www.climatecadvanced.com
- John Abularrage, Advanced Radiant Design: www.radiant-design.com
- Paul Polletts, Advanced Radiant Technology: www.advancedradiant.com
- Bob Dudley, Harris-Dudley: www.radiantfloor.com

These guys are old pros when it comes to online marketing. I hope you'll take a moment to look at their sites. And please send me a link to your site if you are proud of your work. I would love to check it out. ●

Dan Foley is president and owner of Foley Mechanical, Inc. based in Lorton, Va. (www.foleymechanical.com). FMI specializes in radiant, hydronic and steam systems as well as mechanical systems for large custom homes. He can be reached at 703-339-8030 or at dfoley50@verizon.net.

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➔ Circle 29 on reader reply form on page 85

HYDRONIC PRODUCTS

Residential condensing tankless



EcoTOUGH™ series of gas-fired residential condensing tankless water heaters introduces the NRC83, an ENERGY STAR®-rated unit designed for smaller homes and multi-family dwellings. Available in both indoor (the two-pipe, direct vent NRC83-DV) and outdoor (NRC83-OD) models, the wall-mounted units have an energy factor (EF) of 0.92 for natural gas and 0.94 with liquid propane, approximately 30 points higher than that of a standard, storage tank-type, gas-fired water heater. **NORITZ**

➔ Circle 105 on reader reply on page 85

Scale control

This scale control system helps ensure the performance and efficiency of Rinnai tankless water heaters used in areas with hard



water. To safeguard a tankless unit from limescale build-up and corrosion, may be installed on a home's cold water line in front of or upstream of a tankless unit. Delivers consistent scale control by dissolving a special blend of compounds that prevents mineral deposits into the water stream. **RINNAI**

➔ Circle 106 on reader reply on page 85

Condensing tankless

Bosch Therm tankless water heater models C 1210 ESC, C 1210 ES, C1050 ES and C 950 ES are the only condensing tankless series on the market that meets the new, stricter, NO_x requirements passed by utility regulatory agencies in California and Vermont. The Bosch Therm



line includes ENERGY STAR® rated models, powered by natural gas or propane, backed by an industry-best, 15-year warranty. **BOSCH THERMOTECHNOLOGY**

➔ Circle 107 on reader reply on page 85

High efficiency condensing

The PHH-32RDV high efficiency condensing gas tankless water heater supports three to four major hot water functions. This unit uses



condensing technology, making it the most efficient tankless water heating solution at 0.94 energy factor (EF). ENERGY STAR rated. Vents using PVC. Exclusive safety features. Temperature remote included. Easily convertible for commercial use. **WAIWELA**

➔ Circle 108 on reader reply on page 85

Micro Mix tankless

The Instant-Flow® Micro Mix tankless water heater creates on-demand hot water at 99% energy efficiency. It uses a digital



microprocessor for temperature control, the most energy efficient means of heating water. Proudly made in the U.S.A. **CHRONOMITE LABORATORIES INC.®**

➔ Circle 109 on reader reply on page 85

The GU100 Eternal hybrid water heater is designed specifically for the retrofit market and is the most affordable high performance, on-demand water heater on the market. Can support two simultaneous



applications and provide endless and

GU100 hybrid water heater

consistent hot water with minimal pressure drop.

Has a self-cleaning stainless steel heat exchanger, is recirculation compatible, meets new low NO_x requirements and comes with an industry leading warranty. Its low gas and venting requirements make it an easy replacement for a standard tank. **ETERNAL HYBRID WATER HEATER**

➔ Circle 110 on reader reply on page 85

Tankless enhancements

Takagi now includes a remote controller and power cord with all indoor residential tankless purchases. Due to varying

installation regulations from state to state, outdoor residential tankless units will come with a remote controller only*. Until recently, these water heater accessories were an additional purchase.



Takagi is making the change in order to increase the ease of installation and decrease the amount of time spent on the jobsite for the contractor.

*Editor's note: Tankless models ATI-110, ATI-310, ATI-510, ATI-320H and ATI-520H will come with the remote controller and power cord. Tankless models ATO-110, ATO-301, ATO-510 and ATO-520H will come with the remote controller only. **TAKAGI**

➔ Circle 111 on reader reply on page 85

Whole-house tankless

Tempra Plus® whole-house tankless electric (99% efficient) water heaters feature advanced flow control to automatically keep output temperature constant and provide unlimited hot water, 15 – 20% energy savings, water savings, space saving 17"×15"×5" and no-venting easy installation. Tempra Plus water heaters provide an ideal backup to solar systems when the sun needs a little assistance.

STIEBEL ELTRON



➔ Circle 112 on reader reply on page 85

Prestige™ Series condensing tankless water heater

Using condensing technology to create a .94 EF, the Rheem Prestige™ Series Condensing Tankless Water Heater is Rheem's most efficient tankless water heater to-date. Boasting an industry-best minimum flow rate of .26 GPM and a minimum activation flow rate of .40 GPM,



homeowners using low-flow fixtures receive hot water without having to increase the flow. Units can vent with PVC piping, making installation faster, easier and cost-effective for contractors. **RHEEM**

➔ Circle 113 on reader reply on page 85

Wall-mounted tankless

The ODW is a wall-mounted tankless water heater, available in 4 models ranging from 99,000 to 199,000 Btu/h. The revolutionary S line heat exchangers increase efficiency levels above 90% by using two heat exchangers, including a wet recuperative heat exchanger, manufactured from stainless steel. This reduces energy costs and enables the units to be vented in Schedule 40 PVC. **QUIETSIDE**

➔ Circle 114 on reader reply on page 85

1-gallon electric mini tank

The EMT1 is the industry's first (and only) glass-lined, one-gallon electric mini tank water heater. Fills a critical need in the marketplace; namely, for an instant hot water heater that fits easily in tight, cramped spaces. With its lightweight, ultra-compact design and flexible wall or floor mounting options, the EMT1 can go virtually anywhere, even under the smallest kitchen sink. Truly a mini, making the EMT1 the ideal choice for residential applications as well as light commercial hand washing needs. **EEMAX, INC.**

➔ Circle 115 on reader reply on page 85



Electric tankless water heater

AHQ-TB32 electric tankless water heater is perfect for whole-house residential or commercial applications, such as high flow



kitchen or mop sinks, eye/face wash stations and other applications that require automatic power and temperature control. Coilless technology® eliminates lime scale build-up, ensuring optimal energy efficiency, with virtually no maintenance. AHI offers a full line of coilless technology-enabled electric tankless with numerous unique patent pending features. The AHQ-TB32 is equipped with 2-in-1 capacity settings and serves 208 to 240v. **AHI TECHNOLOGIES**

➔ Circle 116 on reader reply on page 85

Condensing water heaters

Navien offers the largest selection of condensing tankless water heaters in the industry. With eight models to select, Navien has a product to meet any need from 150,000-199,000 Btus in either propane or natural gas. With Navien's simple



mounting system, one person can easily install a tankless water heaters. All of the units are condensing and can be vented using 3" Schedule 40 PVC pipe to reduce installation cost.

NAVIEN AMERICA

➔ Circle 117 on reader reply on page 85

HYDRONIC PRODUCTS

Fabricated systems

Skid mounted fabricated systems are available for both space heating and domestic water heating needs. Fabricated Systems are turnkey solutions, offering single source responsibility with all components engineered to perform together and maximize efficiency while minimizing risk. Individual components are factory mounted on a skid, piped and wired together to be delivered as a complete package. Fabricated Systems require only a single point electrical connection and connection to utilities, saving on installation time and costs. **HARSCO INDUSTRIAL PATTERSON-KELLEY**



➔ Circle 120 on reader reply on page 85

Intelligent boiler control technology

In response to the growing industry requirement for low water cut-off valves, new RBT-3000 Low Water



Cut-Off & Fuel Economizer is designed to maximize fuel efficiency and provide valuable low water cut-off protection for hydronic heating systems. The intelligent controls built into the RBT-3000 bring advanced microprocessor technology to virtually any existing boiler, automatically adjusting water temperature based on heat load and without the need for an outdoor sensor. **MCDONNELL & MILLER, A XYLEM COMPANY**

➔ Circle 121 on reader reply on page 85

Commercial water heater

The ARMOR X2 combines stainless steel heat exchanger technology with modulating/condensing combustion to deliver thermal efficiencies as high as 96 percent. 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. Designed to eliminate concerns about meeting hot water demand, ARMOR X2 is equipped with two independent combustion systems that consist of two 316L stainless steel heat exchangers, gas valves and combustion blowers designed to work in unison. **LOCHINVAR**

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PLUMBING BUSINESS

Why do plumbers feel they have to be the cheapest?

BY RICHARD DI TOMA CONTRIBUTING WRITER

When contractors chat online about matters of which they know little or nothing, the propensity for flawed information entering and decimating our noble industry becomes critical. Following unsound, ridiculous business concepts is how the absurd “going broke rates” many contractors charge came into being.

While perusing the Internet, I came across a dialogue among plumbing contractors that started with a posting from one contractor who wondered why plumbers feel the prices for their services have to be the cheapest. The PHC contractors involved expressed their opinions from every direction for fourteen pages. Some of the people involved in the aforementioned chat showed a glimmer of intelligence and common sense. But I felt that the overall gist of the conversation spewed inane and harmful ideas regarding the answer to the question.

One plumber admitted that he was guilty of low balling. Others erroneously thought that the fundamentals of mathematics differ among plumbing businesses, dependent upon the size of the enterprise. Another brought up the concept of getting together to set prices. That one really made the conversation turn off the path as the topic of price fixing was discussed by all. That contractor tried to explain that he meant to say that contractors need to be educated.

When technically talented people who lack sound business acumen try to give business advice to others they usually make the problem worse. Just look at our industry. Contractors arrive at their prices by charging a dollar less than their competition. Setting prices based on the prices of other contractors who don't know their true operational costs is insane. Dispersing flawed information harms the industry. Before offering business advice, contractors who are not thoroughly versed on proper business protocols would be wise to heed a line from a Clint Eastwood movie, “A man has to know his limitations.”

Why do plumbers feel they must be the cheapest? The answer is simple. Prices can only be set at, below or above true operational cost. Two of those choices are bad for business, since the only reason business exists is to make a profit. Therefore, contractors who don't know their true costs have twice the chance of low balling and shortchanging themselves than they do of pricing their services properly and profitably.

Ignorance of true cost further exacerbates the problem because it causes contractors to suffer from low self-esteem. Although many low balling contractors argue that they do not have low self-esteem, the fact that they sell their services below their true cost proves they do. Many contractors enter the business arena ill-equipped to attain success. They foolishly charge in armed with little or no business acumen and a great deal of low self-worth. This toxic mixture, blended with false pride, fear and anxiety leads them to destroy their own chances of success by quoting low ball prices below their true cost.

Plumbing is a trade steeped in logic. Before any

plumbing contractor qualifies as a master of the trade, he/she must be trained in plumbing fundamentals, technical subjects, mathematics and basic science. Before opening a plumbing business, master plumbers should be trained in the fundamentals of proper business procedures. Unfortunately, most are not: That's a major problem.

Every human being is ignorant in some areas, because no one knows everything. Being ignorant of proper business know-how when opening a business is downright stupid. Contractors who think they know how to run a business correctly, but really don't, are being foolish. Contractors quoting low ball prices because of ignorance of their true cost

Following the advice of people who don't have sound business theories and methods is like having your plumbing fixed by someone whose only career experience is cleaning tables in a fast food restaurant.



and fear of losing jobs would be better off fearing the loss of money that occurs when they sell their services below their true cost.

The results of low ball prices are: 1) Contractors, their employees and respective families cannot be properly compensated; 2) Creditors cannot be paid in a timely manner; 3) Consumers receive mediocrity rather than excellence due to premeditated or unintentional corner cutting caused by low ball prices and 4) our noble industry gets a black eye due to the actions of contractors who just don't get it.

Most PHC contractors probably believe “do it yourself” plumbing performed by amateurs isn't as good as the workmanship of true professional plumbers. Using the same thought pattern, contractors would be wise to seek business advice from those who know of what they speak rather than amateurs chatting on the Internet. Following the advice of people who don't have sound business theories and methods is like having your plumbing fixed by someone whose only career experience is cleaning tables in a fast food restaurant. The advice will be flawed and the plumbing repair won't hold water.

Consider this:

1. Making a sound business plan will allow you to attain your goals and is better than spending your business

➔ Turn to DI TOMA on p 50

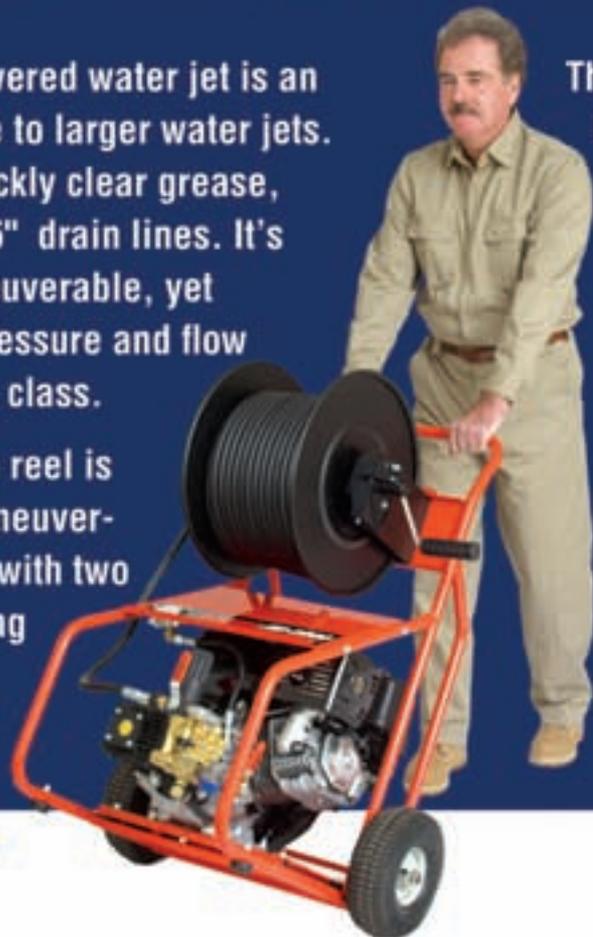
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| PLUMBING BUSINESS | CONTINUED FROM PAGE 48

life putting out fires and borrowing from Peter to pay Paul.

2. Earning a profit requires you to identify and calculate your tangible and intangible costs to arrive at your true cost of operation. The key word is true.

3. Picking a proper profit margin requires you to correctly take into consideration your risks.

To truly improve this industry, contractors must smarten up. They need to realize that they don't have to be the cheapest in order to be the least expensive.

4. Developing proper, profitable prices that will allow you to recover your costs and earn the reward you deserve comes from the proper application of the principles enumerated in 1, 2 and 3.

5. Addressing consumer questions intelligently, correctly and with good bedside manner will help you close more deals.

6. Delivering excellence will help you retain more clients and grow your business base. Being able to afford to do the job right and stand behind your workmanship

for a reasonable time will give you an excellent reputation and much repeated business.

To truly improve this industry, contractors must smarten up. They need to realize that they don't have to be the cheapest in order to be the least expensive.

If you need my assistance, I am as close as your phone. I can take you through all the steps you need to implement sound business protocols. You first have to realize that you need help. Contact me at 845/639-5050. We talk. We lay down a game plan suitable to your needs. After you understand my sound business theories and methods, you have the opportunity to travel the highway to success rather than plod down the road to misery, stress, frustration and failure.

As always, I wish you good health and much wealth. ●

Richard P. DiToma is a contracting business consultant and active PHC contractor with over 41 years of experience in the PHC industry. To receive more info about his contracting business coaching, consultations, business books, seminars with solutions, customized price guides, business forms, etc. contact Richard by calling 845/639-5050, email richardditoma@verizon.net, fax 845/639-6791 or write R & G Profit-Ability Inc., P.O. Box 282, West Nyack, NY 10994.

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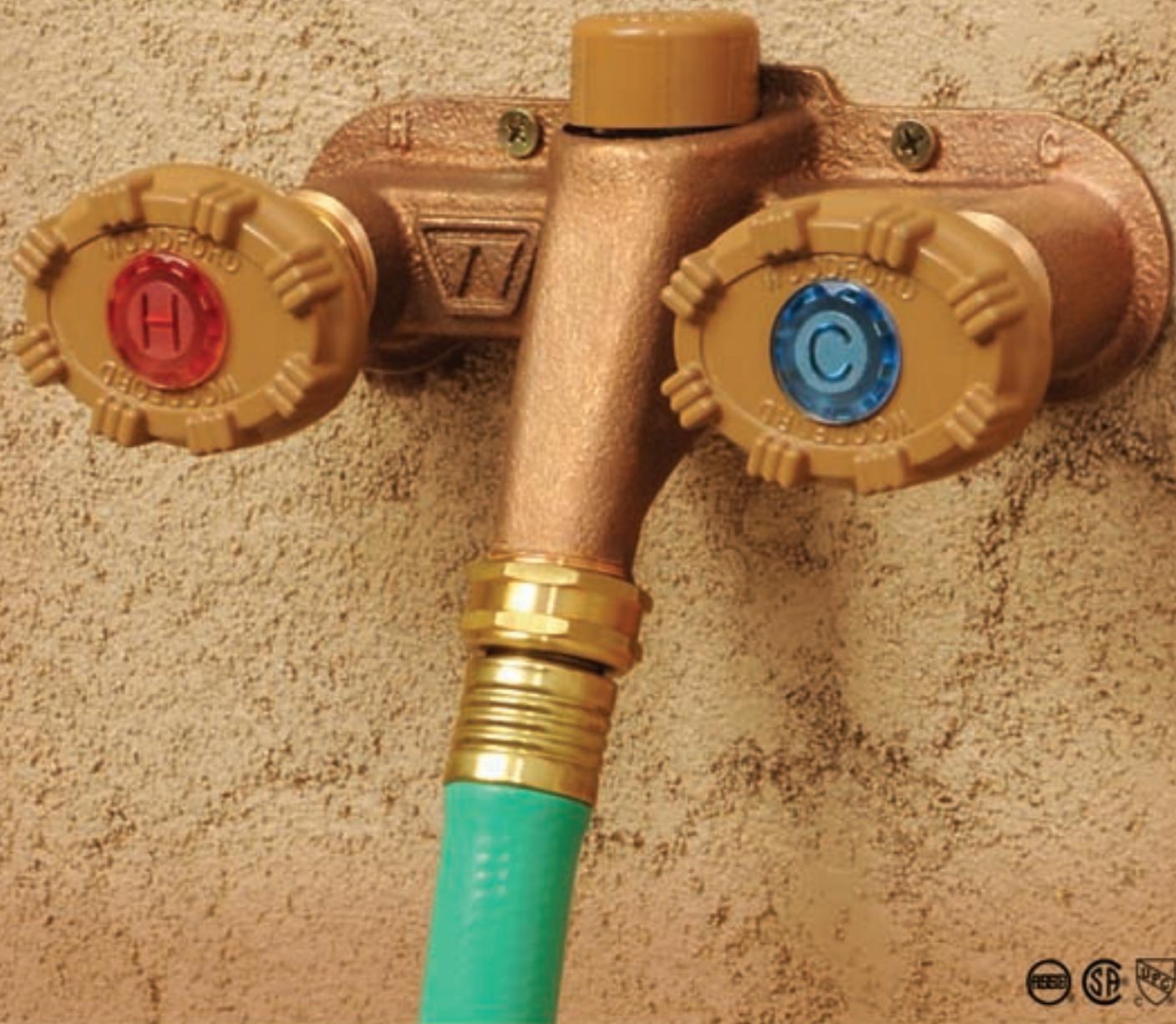
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A Touchy Subject

Hands-free technologies address hygiene, water efficiency and cost savings

BY JASON RENNER, BRADLEY CORPORATION

When you think of all the touchpoints in many public restrooms, there are easily five –10 commonly touched restroom surfaces that come to mind. Multiply that number by research recently published by Idaho’s Southeastern District Health Department stating that humans carry 10 million bacteria between their fingertips and elbows, that damp hands spread 1,000 times more germs than dry hands and that the number of germs on fingertips doubles after using the toilet.

Not surprisingly, the number of germs passed around in restrooms quickly becomes a large and cringe-worthy statistic, further compounded by people’s aversion to coming into contact with public restroom surfaces (See sidebar).

Designed to minimize cross-contamination, touch-free fixtures are increasingly becoming the norm in a variety of commercial restroom facilities. Hygiene is only one advantage linked with these fixtures: Enhanced savings associated with water, energy, maintenance and labor costs and increased sustainability, round out the benefit equation. Moreover, particularly in the last decade or so, manufacturers have made major strides in developing smarter and more durable designs that are easier to install, activate and maintain.

Due to these demonstrated efficiencies and to advances in hands-free technology, more than half of institutional and commercial facilities are now using touchless fixtures. But there are still a number of facilities that have opportunities to capitalize on the many benefits of these highly efficient restroom fixtures for retrofits or new

construction. Here’s how these fixtures prove to be an economical choice.

Faucets: Touchless faucets using infrared or capacitive sensors can reduce an average commercial facility’s water consumption up to 30 percent vs. non infrared/faucets with handles. These fixtures also save energy, because the faucet automatically shuts off after a user’s hands leave the sensor area. Activation settings can also be used to control water at peak times, further saving water and energy and reducing utility charges.

Metered faucets have a flow rate limit of 0.25 gallons per cycle (gpc), which is the amount of water used during each activation. Depending on local codes, water used by lavatories varies from 2.5 gpm to 2.2 gpm; however, many public restrooms use just 0.5 gpm. Some newer-generation touchless fixtures feature 0.38 gpm faucets vs. 0.5 gpm, and achieve over 20% water savings. In any case, fixtures using less than the 2.5 water conserving gpm standard can help earn LEED credit.

Toilets: Low-flow toilet fixtures using 1.6 gallons or less, or urinals using 0.5 to 1.0 gallons, have become the standard in commercial facilities. One-pint urinals and waterless urinals have made strides in recent years. Low-flow fixtures can be complemented with standard-flow fixtures such as dual-flush toilets, which conserve water by using different amounts of water for various flushing needs. Some newer technologies have sensors to determine the size of flush by



Touchless faucets using capacitive sensing technology employ an omnidirectional detection zone that surrounds the entire spout rather than a sensor window, commonly used with infrared-controlled faucets.

measuring the time a user spends at the toilet in addition to the user’s distance from the toilet.

Photovoltaics: Photovoltaic cells integrated into the top of a lavatory system convert either normal restroom lighting or day lighting into energy that is stored and used to power valves and sensors in the units. Some fixtures even eliminate the need for batteries and electrical hookups, therefore cutting maintenance and operating costs and maximizing savings and environmental efficiency.

Vandal-resistance: Capacitive sensing uses an omni-directional zone to detect a user’s presence around the entire faucet spout in place of a small infrared sensor



Touchless faucets using capacitive sensing technology employ an omnidirectional detection zone that surrounds the entire spout rather than a sensor window, commonly used with infrared-controlled faucets.



Some newer lavatories utilize photovoltaic technology, which converts restroom lighting to energy to activate the flow of water, eliminating the need for batteries and electricity.

window. These units are virtually vandal-free and maintenance-free, since the mechanicals are safely concealed in a sealed control box.

Washroom Accessories: Touchless hand dryers, paper towel dispensers and soap dispensers also underscore energy and environmental efficiencies and convenience for users and maintenance staff. More recent automatic hand dryer designs have made some key advances. Some energy-efficient, sensor-operated hand dryers use 80 percent less electricity than other hand dryers. The energy to operate this new generation of hand dryers is generally less than 10 percent of the cost of

paper towels, including eliminating labor costs for ordering, storing, replenishing dispensers, collecting and disposing of paper towels.

Touchless, forced-air hand dryers feature infrared sensors that activate the dryer when hands are placed three to six inches below the nozzle. Improved units dry hands in 15 seconds and are designed to automatically adjust voltage to all power conditions.

In general, electric hand dryers are an environmentally friendly choice over paper towels, because they conserve resources and use relatively little electricity, while offering the hygienic benefit of operating

automatically and promoting a cleaner restroom appearance, since paper towel debris is eliminated.

Hands-free soap dispensers also reduce the number of germs on surfaces. If the soap dispenser is integrated into the lavatory, users never have to remove their hands from the bowl. That reduces the amount of water pooling on countertops and potentially dangerous drips on floors.

Employing the latest models of hands-free restroom fixtures gives building management and patrons alike the best of all worlds — from saving water, energy and money to providing healthier, more convenient and more hygienic environments. ●

Jason Renner is a senior product manager at Bradley Corporation of Menomonee Falls, Wis. A USGBC member and manufacturer of locker room products, plumbing fixtures, washroom accessories, partitions and emergency fixtures, Bradley serves the commercial, industrial, health care, recreation, education and corrections markets worldwide. Renner can be reached at Bradley Corp., W142 N9101 Fountain Blvd., Menomonee Falls, Wis., 53052-0309. For more information, call 800/BRADLEY or visit www.bradleycorp.com.



The newest generation of touchless adjustable speed hand dryers uses 80 percent less electricity than other popular hand dryers. These dryers offer the option to choose preferred air speed and sensor range, allowing hands to dry in as little as 10 seconds.

Weighing the Public's Attitude Toward Restrooms

A national survey conducted by Bradley Corp. examined Americans' attitudes toward touching restroom surfaces in public facilities, bearing witness to people's aversion to making contact with common restroom areas. According to the 2011 study, 62 percent of respondents said they dislike touching faucet handles. The majority of respondents also cited their disdain for touching stall door handles (76 percent) and restroom entrance door handles (68 percent).

Further, the survey revealed that non-working soap and towel dispensers taint users' restroom experiences. While more than one-third complained about soap and towel dispensers that were empty, jammed or didn't dispense enough towels at once, it was the overall negative appearance (old, dirty or unkempt) of the restroom that was the number one complaint mentioned by three-fourths of respondents.

QuickTurn™ Frost-Free Hydrants

The popularity of QT hose bibs, sillcocks and hydrants and the superior quality and performance of Arrowhead's patented Arrow-Breaker® Frost-Free hydrants with Integrated (Built-In) Anti-Siphon Vacuum Breaker technology have now come together. The new Arrowhead QuickTurn™ series features Easy On/Off (QT) operation without letting go of the handle, better flow-control than other "QT" hydrants, Arrowhead's exclusive "No-Leak" O-Ring Bonnet, and fully interchangeable stems with retrofit capability for standard Arrowhead Frost-Proof hydrants. Only Arrowhead offers both QuickTurn™ and Multi-Turn Frost-Free hydrants with Arrow-Breaker® technology. All Arrowhead QuickTurn™ hydrants and our other high-quality products are proudly crafted in the USA. **ARROWHEAD BRASS**



➔ Circle 125 on reader reply on page 85

Physical water conditioners

Highly successful range of physical water conditioners that offer an alternative to conventional water softeners. The WK1-E has been specially tailored to meet the high power output of electric water heaters, especially when these are supplied by well water. Contractors looking for alternative water treatment can download a Specifiers Guide from www.aqua-rex.com.

AQUA-REX

➔ Circle 126 on reader reply on page 85



The new Ascent II macerating toilet system allows easy installation of a bathroom in areas where no gravity sewer lines may exist! Perfect for



remodeling applications, the Ascent II eliminates the need for major construction or breaking concrete floors in basements to add a bathroom. Featuring a 1.28 GPF high efficiency toilet, the system easily macerates sewage waste and other debris with new RazorCut™ technology and

Macerating toilet

then discharges it through a small 1" diameter line up to 25 feet high and 150 feet horizontally. **LIBERTY PUMPS** ➔ Circle 127 on reader reply on page 85

Vacuum plumbing brochure

AcornVac introduces a new brochure — Vacuum Plumbing for correctional facilities, jails and prisons. Inside this 12-page color brochure, you will find cost, construction and security benefits of vacuum plumbing systems; clear images of products and installations; information on our Master-Trol electronic valve management system; and much more. **MORRIS GROUP INTL.**



➔ Circle 128 on reader reply on page 85



Pump protection panel

The Total Pump Protection System is an upgraded simplex system that is available for single phase or three phase pumps. The system offers maximum pump protection designed specifically to protect the higher end pump. This system is equipped with "Smart Board" technology that allows constant monitoring of pump status. The features available: no load lockout; overcurrent protection; cycle counters; elapse timers; and amp meters. Dry contacts for: high liquid alarm w/ oil & water indication; pump fault lights; and seal failure moisture indication.

SEEWATER

➔ Circle 129 on reader reply on page 85



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| COLOR TRENDS 2012 |

In step with style: provocative tangerine tango

BY LINDA JENNINGS, SHOWROOM SPECIALIST

Uplifting and energizing, it's no surprise that kitchen and bath showrooms and the design community as a whole are quickly embracing Tangerine Tango, Pantone's 2012 Color of the Year. According to a report released by the Associated Press, "The world doesn't need



Decolav's vivid 2806 resin Magma Lavatory Sink from the Incandescence™ Collection can be used as both an above counter vessel or a semi-recessed lavatory.

more gray, and the blues are covered, too. What consumer products need is a jolt, a shot of energy and boldness, all of which comes from Tangerine Tango, the reddish-orange hue that Pantone announced as its top color for 2012."

Over the past several years, orange has grown in popularity and acceptance among designers and consumers. A provocative attention-

getter, Tangerine Tango is appealing in not only fashion and home décor but its also making its way into luxury kitchens and baths.

"Color can be a mood lifter, which is why we chose Tangerine Tango," says Leatrice Eiseman, executive director of the Pantone Color Institute. "We thought that would be the perfect color, one that will get people's attention."

Sophisticated but at the same time dramatic and seductive, Tangerine Tango is already appearing in plumbing and decorative hardware showrooms as well as high-end homes and even hotels. Victoria + Albert's freestanding tubs, while regal in white, become fabulously glamorous when painted in this luscious color. The freestanding tub has always been the centerpiece of the bath, and for today's consumer looking to add vibrant style, Victoria + Albert's tubs allow custom painting of their exteriors. The tubs are made from eco-friendly Englishcast®, having a smooth exterior surface easy to decorate using either oil or water based paints. And when it comes to custom decorating Tangerine Tango is hands-down this year's color of choice.

Pyrolave countertop surfaces can be ordered in similar radiant sunset shades, adding impact and exotic flair to any décor. From residential and commercial kitchens to bathrooms, tabletops, swimming pools, fireplace facades and outdoor living spaces, the glazed lava

stone surfaces are perfectly at home in contemporary or traditional settings.

While the striking good looks of Pyrolave speak for themselves, the engineering process goes deep beneath the surface. Volvic lava stone is extracted from the heart of volcanic craters in Auvergne, France. Blocks of stone are mined and then cut into slabs, imbued with gloriously-hued enamels and fired at temperatures exceeding 1000° C. The finished masterpiece can withstand almost anything – high temperatures, acids, corrosive products – making these surfaces as durable as they are visually captivating.

Orange-hued patterns are also capturing attention, particularly in unlikely spaces. KOHLER's Ipanema bathroom sink features oversized patterns and mini-prints in vivid, contrasting colors, pieced together eclectically, taking inspiration from some of the most hip fashion trends of today. Part of the Top Art Collection and named for the popular beach in Rio de Janeiro, the Ipanema infuses both positive energy and playfulness into its surroundings and naturally lends itself to coordinating orange accessories.

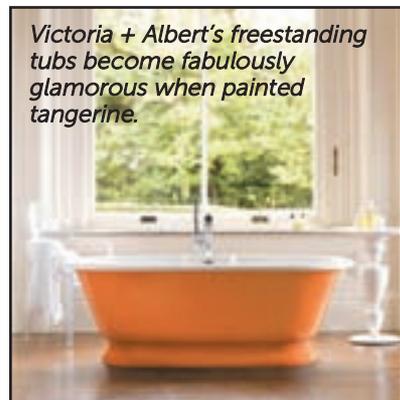
For a pop of color in the bath, Decolav's intensely vivid 2806 Magma Lavatory Sink from their Incandescence™ Collection does not disappoint. Crafted from resin, this designer lavatory is not only durable, but extremely easy to care for. The uniqueness of this sink is its ability to be used as both an above counter vessel or a semi-recessed lavatory, due to it's gently sloping sides. It's sure to add a touch of excitement.

Tangerine Tango looks great on tile, too and can be used on walls or floors in bathrooms, kitchens, living rooms, hallways and almost any other living space you can think of. Go lux with Italian tiles; choose patterns to accent and solids for larger projects. The beauty of handmade Italian tile is unmistakable and even more mesmerizing when created in such a spirited color.

For a quick Tangerine Tango fix, Atlas Homeware offers its vibrant Indochine series of knobs and pulls. On cabinetry



Glazed lava Pyrolave countertop surfaces can be ordered in radiant sunset shades and are at home in contemporary or traditional settings.



Victoria + Albert's freestanding tubs become fabulously glamorous when painted tangerine.

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www.gerberonline.com

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GERBER



KITCHEN + BATH ➔ Continued from p 56

and furniture that needs a boost, there really is nothing quite like a squirt of tangerine. Whether you choose a one-inch cone, two-inch round knob, or five-inch pull, these shapes combined with color have attitude. Inexpensive and easy to install, they add budget-friendly, instant, high-voltage style.

"I love this color because it



Atlas Homeware's vibrant Indochine series of knobs and pulls add a touch of tangerine.

romances the consumer... I see hot summer nights, playful encounters in the town piazza, and retro fashion at its liveliest, says Adrienne Morea, CEO and Creative Director of Atlas Homewares. "Dull, boring or uninteresting consumers need not apply!"

Aquabross' Lady Chef kitchen faucet adds a jolt of color to the kitchen with its orange retro colored spirals. The professional pull down

spray kitchen faucet will give you motivation to host dinner parties as an excuse to show it off!

Every room in the home can get a jolt of energy by incorporating a splash of Pantone's new Tangerine Tango 2012 color of the year. The best way to use this TANGERINE color trend is to introduce just a small accent – like a knob on a bedside cabinet; pillows on a sofa; a fabulous orange-ish red serving bowl on the center of the dining room table with matching napkins; or even tangerine colored soaps in the bathroom. This also is a great time to bring out your vintage Fiesta Ware... An orange plate and cup for the table or an orange mixing bowl on the kitchen counter will bring this classic dinnerware into the current.

For those a bit more daring, experiment with painting one wall tangerine for a drama point. And for those who have a passion for color, go bolder with an orange-painted claw foot tub in the bath or an orange countertop in the kitchen. This year, it's all about color and creating a point of drama, and kitchen and bath showrooms need to gear up for this

Get the Look!

For more info on the trends mentioned here go to:

Atlas Homewares
800-799-6755
www.atlashomewares.com

Pyrolave USA
919-788-8953
www.pyrolave.com

Victoria + Albert
800-421-7189
www.vandabaths.com

Decolav
561-274-2110
www.decolav.com

Aquabross
514-381-4141
www.aquabross.com

emerging color trend."

Tangerine Tango takes us boldly into the new year with confidence. Eismann perhaps put it best when she said, "There's the element of encouragement with orange, it's building on the ideas of courage and action, that we want to move on to better things." It's definitely time to Tango! ●



NEW

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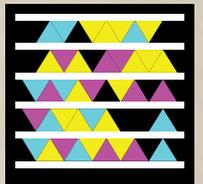
With SpacePak, what you don't see is what you get. SpacePak is the original small-duct heating and cooling air distribution system that delivers comfort without major renovations or bulky ductwork. With flexible 2" tubing running seamlessly through walls and floors, SpacePak preserves the architectural integrity of yesterday's and today's homes. Clean looks. Clean living.

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- Easy installation – no major remodeling
- Preserves architectural integrity – no large ducting or grills
- Quiet performance with superior humidity control
- Excellent efficiency rating



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To learn more, call 1-800-465-8558, visit www.spacepak.com/contractor, or simply scan the Microsoft Tag



KITCHEN + BATH

What good things are happening to you today?

BY PETER SCHOR MARKETING EXPERT



How about changing your greeting today from “How are you?” to “What good things are happening to you today?” Write it out and practice it until you own it.

During the past 24 years of my 40-year young industry career as a full time educator, speaker, author, columnist, writer and consultant in our industry, I have always prided myself on delivering messages in the most positive manner possible. Since 2004, I have been blessed as a

I don't know about you, but I have grown weary of all the negative information that is thrown at us, our friends and loved ones. We have become a society that focuses on and glorifies all that is wrong in this world. The newspaper and TV media play a huge part in influencing this negative mind set. Approximately 80% of what we see, hear and read from newspapers and TV media is negative in content.

monthly columnist for TMB Publications' *The Wholesaler* and writer for *Phc News*. I salute the publisher, editors and staff for producing great monthly magazines and for always taking the “high road” in serving the industry!

I don't know about you, but I have grown weary of all the negative information that is thrown at us, our friends and loved ones. We have become a society that focuses on and

glorifies all that is wrong in this world. The newspaper and TV media play a huge part in influencing this negative mind set. Approximately 80% of what we see, hear and read from newspapers and TV media is negative in content. If a local station can't find enough tragedy and negative news in their hometown, they report stories from obscure locales to ensure that there is some “shock” value in their programming.

Unfortunately, it does not stop there. Go into most workplaces in America during the morning and listen to the negative banter that takes place. And we wonder why our productivity is waning!

Ask any group of people to name some positive role models that our children can look up to and watch the blank glaze come over their faces. I have asked this question of many of my plumbing wholesaler and contractor friends; it is rare when someone immediately shouts out a positive response.

This past week I received the following email from several people. Please take a moment to reflect on its message.

“With Regret ...”

- Whitney Houston's death, while a sad thing, was the direct result of very unwise life choices. It currently dominates the news.
- Charlie Sheen's (45) story is all over the news because he is a substance abuser, an adulterer, sexually promiscuous and obnoxious.
- Lindsay Lohan's (24) story is all over the news because she is a celebrity drug addict and thief.
- Something as frivolous as Kim Kardashian's wedding [and short-lived marriage] has been shoved down our throats.

While all this is going on, Justin Allen (23), Brett Linley (29), Matthew Weikert (29), Justus Bartett (27), Dave Santos (21), Jesse Reed (26), Matthew Johnson (21), Zachary Fisher (24), Brandon King (23), Christopher Goeke (23) and Sheldon Tate (27) are all Marines that gave their lives last month for you.

There is no media coverage for these fallen defenders; not even a mention of their names. Honor

them by sending this on. Rest in peace and Thank you, troops!

You (Yes, you) can make a difference

Here is your challenge.

- Start and end your day with something that inspires and empowers you and your loved ones to have a positive day.
- Stop watching the news. (You will survive without it.)
- Be a good finder: Look for and celebrate good experiences, happenings or people.
- Have an attitude of gratitude: Be thankful for the abundance you already have.
- Ask your children and family to share something positive every night at the dinner table.
- Create the habit of asking your children to say: “I am grateful for. ...” before they go to bed. (Remember to lead by example.)
- Do something for someone else without anyone knowing that it came from you.
- Encourage your local newspapers and TV stations to make the headlines a “positive story” (i.e. The Herald's Heroes).
- Make your workplace a positive energy work zone. Leave the negative thinking and actions to your competitors.
- Remember that praise is a powerful tool that gets massive results.
- Greet people by saying, “What good things are happening with you today?” Watch their reaction.
- Be that positive role model that inspires and empowers others to reach their full potential. ●

Peter Schor, president of Dynamic Results Inc., is a bath/plumbing industry speaker, educator, author, columnist and consultant in the many segments of our industry. For the past 20 years, he conducted seminars and speaks at numerous conventions. Schor has great expertise in the field of showrooms and hotel bathrooms and has won many industry awards. He also consults manufacturers in taking their products to market in the areas of sales, marketing and public relations. Schor can be reached at 1302 Longhorn Lane, Lincoln, CA 95648, phone 916/408-5346, fax 916/408-5899, email pschor@dynamicresultsinc.com or visit www.dynamicresultsonline.com.

K/BIS 2012 – A deeper look at getting better show results

BY PETER SCHOR

There is no doubt that 2012 is a challenging year for the showroom industry. It will require more focus, creativity and going back to the basics of what works in our showrooms.

The Kitchen and Bath Industry Show (www.kbis.com), April 24 – 26 in Chicago, is expected to draw 20,000 to 25,000 people. Show hours are 10 a.m. to 5 p.m. Tuesday and Wednesday and 10 a.m. to 3 p.m.

– 9:30 a.m. in Room S406. Guest speaker Lou Rohl of ROHL LLC will offer a firsthand look at how companies in our industry are transforming communities in need across the U.S. There is no fee for this event; however, attendees must preregister at <http://crystalvision2012.eventbrite.com>.

The Retail Observer, a key industry publication for major kitchen and bath appliances retailers, will sponsor the Appliance Pavilion.

This year's theme, "Touch the Future," is about technology innovations.

will cover your specific questions regarding today's kitchen and bath trends. The experts range from specialists in cabinetry, universal design and sustainability to electronics and lighting. Make sure to join us for this interactive session, allowing you to get up-to-date information that you can apply in your business.

- Wednesday, April 25, 11:00 a.m. – 12:15 p.m., the "State of The Industry" address will be given by Michael Werner, president and CEO, Globe Union Group (Danzon Faucets, North American Division). Werner will provide an overview of how we can envision the future in business and how technology advances will alter the industry. He will address the impact of technology on our current landscape, how it has evolved and how we can best prepare for shifts in the way we traditionally operate. Through ongoing advancements in technology, everything has become possible, accessible and more affordable. Navigating and embracing the redefined course of business as kitchen and bath professionals will ensure the success of the industry. Werner will provide a look at this new terrain. This will be a



Stainless Living backsplash systems

New category! A huge hit at K/BIS 2011! These distinctive backsplashes are available in three sizes and 14 different design patterns. You can choose from the three stock sizes, or the backsplashes can be customized to fit your exact specifications. Installation is accomplished in minutes, using a combination of two-sided tape and construction adhesive. Plumbing and appliance showroom display and stocking distributor programs are offered strictly through "channel distribution." For 2012, Stainless Living will be releasing stainless steel dishwasher panels and refrigerator fronts in 14 different patterns. They are a \$25 million dollar, 70 year old company. www.stainlessliving.com.

Thursday. About 300 exhibitors will be housed in 200,000 square feet of exhibit space in two halls. This year's theme, "Touch the Future," is about technology innovations.

The National Kitchen & Bath Association (NKBA), along with the Custom Electronic Design & Installation Association (CEDIA) and the National Association of the Remodeling Industry (NARI) will work together to promote a fresh and collaborative approach to business. On the KBIS show floor, these three unique associations will host seven one-hour panel discussions over a three-day period on the topic of collaboration between trades. Each association brings their own perspective on business and their respective industries. Building professional teams with cross-industry areas of expertise provides a competitive edge for all trade partners involved.

Don't miss the 12th annual Crystal Vision award breakfast. This event honors premier industry leaders partnering with the Storehouse of World Vision, NKBA's Charity of Choice. Join your peers for an exciting presentation and breakfast on Wednesday, April 25, 8

Sub-Zero, Wolff Appliance and others will be back this year for K/BIS 2012. Additional pavilions will include categories such as decorative hardware, cabinetry, natural stone and tile, sourcing and international.

Schedule

- Opening Ceremony, Tuesday April 24, 8:30 a.m. – 9:45 a.m.,

Rigidized stainless steel countertops

Rigidized custom metal countertops are made from textured and plain stainless steel and copper. Stainless steel countertops are hot! They provide a heat resistant, anti-bacterial surface that requires minimal maintenance, and they offer a wide variety of edge profiles, backsplash styles and corner options. Suitable for both commercial and residential applications, they are also available with integral sinks. Showrooms are offered one unit on display for qualification purposes. You will just need to mail or fax a CAD or shop drawing to Rigidized from your client. They will give you a consumer price, trade price and your price. These products are highly profitable, competitive and ship to all parts of the U.S. www.rigidized.com.



features TV personality (HG-TV) and author Candice Olsen of Candice Olsen Design.

- Wednesday, April 25, 8 a.m. – 10:15 a.m. at the 10th annual "Shark Breakfast" a panel of industry experts

humdinger keynote to attend.

- Wednesday, April 25, 8 a.m. – 10:15 a.m. at the 10th annual "Shark Breakfast" a panel of industry experts

➔ Continued on p 62

will cover your specific questions regarding today's kitchen and bath trends. The experts range from specialists in cabinetry, universal design and sustainability to electronics and lighting. Make sure to join us for this interactive session allowing you to get the most up-to-date information that you can apply in your business.

Other NKBA programs, paid for by manufacturer sponsors, will include subjects that should hold your interest, such as innovative technology, appliance design, design trends and universal design.

LUXE Home at the Merchandise Mart

The first floor of The Merchandise Mart features 110,000 square feet of kitchen, bath and building products. Open from 9 a.m. to 5 p.m., the Mart is a visual extravaganza of 40 showrooms, including Kohler, Urban



Perlick Coporation

Perlick Corporation's new Shallow-Depth Series of undercounter refrigerators, beverage centers and wine reserves has earned the 2011 GOOD DESIGN® Award in the Commercial Fittings/Supplies category. Designed by Perlick as a result of requests from specifiers, the Shallow-Depth Series is the world's first line of undercounter refrigeration to feature an 18-inch depth. The industry exclusive depth allows for installation in unique hospitality, residential and commercial design applications. Perlick's Shallow-Depth Series is ADA-compliant, available with the option of either a solid or glass door, is powered by a whisper-quiet 700 Btu compressor, and features Perlick's RAPIDcool™ refrigeration technology.

Archaeology, Hastings, Lefroy Brooks, TOTO USA and many more. On April 24, a giant celebration of Open House showrooms will start at 5 p.m. If you want to get great showroom merchandising ideas and see many of your lines displayed elegantly, take a quick cab ride to The Merchandise Mart.

Trade and consumer magazines

One of the greatest perks of K/BIS is the magazines and free subscriptions that are available. Most magazines are not assigned a booth until the middle of April or at show time. I would suggest going on www.kbis.com, clicking on Exhibitor List and then Publications — Business to Business and Publications — Consumer. Last year, I counted more than 21 magazine

booths. The “business to business” magazines are free to anyone attending K/BIS who has been pre-

WarmlyYours

Winner of 2011 KBIS 'Best of Show' Award, WarmlyYours LAVA® Radiant Panels come in 3 main styles, a variety of colors and can be used for central or auxiliary heating. Lava® is a state-of-the-art heating system that uses infrared heating technology that is both environmentally friendly and energy efficient, effectively reducing your annual heating costs. Lava® heating panels not only provide heat, but also enrich your interior design.



qualified. Make sure that you stop by the TMB Publications booth, where *The Wholesaler*, *Phc News* and *Plumbing Engineer* magazines are located. Also, make sure that you register your staff to get *The Wholesaler* magazine with my monthly showroom column.

There are also kiosks of free

China under American names. Chinese manufacturers are now interspersed throughout the show.

Look for manufacturers from China that have the “ISO Quality Certification.”

What's new and hot?

Here are some innovative products that caught my eye: ARB Teak and Specialties, Booth 1667; Artesano Iron Works, Booth 337; Calocasa Bathroom Equip, Booth 5010; Warmly Yours, Booth 113 (Must see); Rigidized Metals Corporation/Stainless Living, Booth 3908, which is one of my best picks — kitchen stainless steel backsplash systems in 14 patterns, all boxed and stockable; stainless steel countertops and tiles.

I hope to see many of you at K/BIS 2012! ●

Michael Werner, president and CEO, Globe Union Group ... will address the impact of technology on our current landscape, how it has evolved and how we can best prepare for shifts in the way we traditionally operate.

industry magazines outside the show floor.

Chinese manufacturers

There are a much greater number of Chinese manufacturers attending this year, along with newer American companies importing products from

T & L International bathtubs

Tyrrell and Laing International Inc. offers an wide range of exclusive Luxury Lifestyle bathtubs, lavatories and related products in an infinity of colors and matte or gloss finishes. They make matching basins, shower trays and vanities. T&L manufactures their bathtubs in the U.S., and they carry a 10-year warranty. Tubs and lavatories are made from a composite of cast stone, which is lightweight, compared to natural stone. The bathtubs are IAPMO, UPC, ANSI, NAHB code approved. T&L is looking for qualified showrooms for semi-exclusive distribution.



Shower & bath products

Product lines include four full bathroom collections of plumbing fixtures — the Neo™, Alexandria™, Caspian™ and Rainier™ Collections are now available. The introduction of the new Shower & Bath products brings a number of new designs to Speakman's existing product line. Each ensemble of products includes a high performing Speakman showerhead, shower valve/trim and tubspout to complete the showering experience. **SPEAKMAN CO.**

➔ Circle 130 on reader reply on page 85



Trim-only kits

Commercial provides increased convenience, flexibility and design options for commercial showering applications with its new trim-only kits. Sold separately, these kits offer heavy-duty, all-metal, vandal-resistant features. The durable Chrome finish stands up to harsh industrial cleaners. Trim-only kits are backed by an industry-leading five-year warranty.

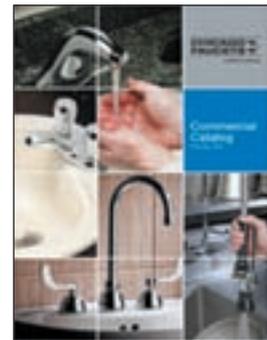
MOEN COMMERCIAL

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Commercial products catalog

New comprehensive catalog features company's extensive line of commercial products. The 206-page catalog is designed to make it easy to find the right faucet, fitting or component for any application. Count on Chicago Faucets to provide durable, high performance plumbing fixtures for your entire facility. **CHICAGO FAUCETS**

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SOLAR SOLUTIONS

Diminishing return from multiple collectors

BY BRISTOL STICKNEY CONTRIBUTING WRITER

When large solar heat collector arrays are installed to heat a building, it is not uncommon to see large groups of four to eight collectors and even multiple rows of these large “banks.” As more collectors are added to increase solar heat, each additional collector provides a diminishing impact on the annual solar heat contribution to the building. When taken to an extreme, if too many collectors are installed, the heat from some of those collectors may never be used throughout the year and, therefore, will provide no actual fuel savings.

For this reason, and because some of the collectors in such a system would only be needed for a few days each year, during the most demanding heating conditions, solar heating systems are rarely designed to provide 100 percent of the annual heat load. Let’s take a closer look

The need for heat (the heat load) is not constant throughout the year, and the solar heat available can be drastically out of sync with the need for space heating, depending on the collector tilt.



Note: Pool is seasonal and absorbs less than 250,000 Btu/day throughout spring, summer and fall.

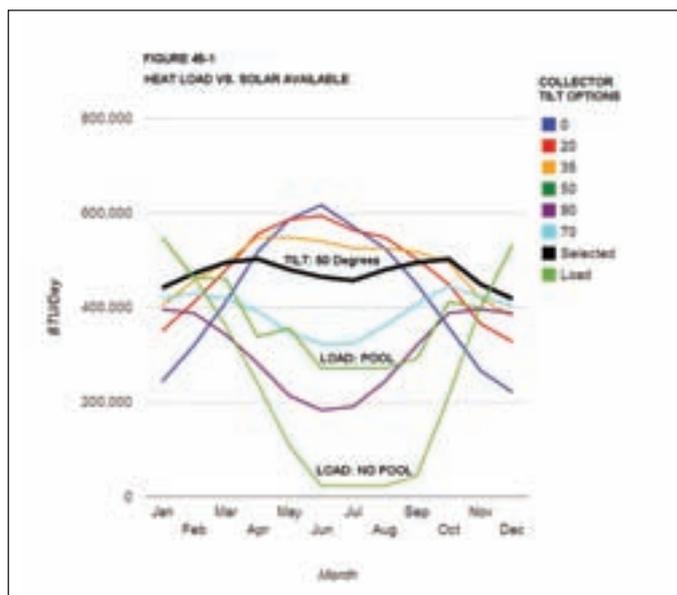
Solar heat versus heat load

The need for heat (the heat load) is not constant throughout the year, and the solar heat available can be drastically out of sync with the need for space heating, depending on the collector tilt. Figure 45-1 shows the need for heat with the pool (upper green line) and without the pool (lower green line). The solar heat available from the equivalent of nine solar heat collectors (4’ by 10’ size) is shown at various collector tilts by the other colored lines. The most commonly chosen tilt of 50 degrees is seen as a black line, which provides the most solar heat in the coldest part of winter.

Notice that when the summer-season heating load of the pool is added to the load of the building (upper green line) the heat output from the collectors is a much better match to the total heating load. Without the pool, a large amount of potentially useful heat must be dumped during the warm season, which can be seen as the gap between the lower green line and the black line above it in the center of the graph. Heat that is dumped cannot be counted as “useful” heat and accounts for most of the diminished annual output of large collector banks.

How many heat collectors?

Figure 45-2 shows how much useful heat is



at the balance between the solar heat available, the heat load in a building and the diminishing utility that can occur with large banks of solar heat collectors.

To illustrate these principles, consider a project where a community center near Pecos, New Mexico, will be solar heated using a solar combisystem that is configured to allow all the heat sources (solar included) to provide heat to all the heat loads. (This project is real, but some of the options used in these examples, while reasonable, are hypothetical.) The building will be well-insulated, is in a sunny climate that is cold in winter, and the results will be calculated first including a seasonal swimming pool (taking solar heat in summer) and then without the pool.

Example Job Specifications

Location: Near Pecos, New Mexico
 Latitude: 36 North
 Collector Tilt: 50 Degrees
 Heated Floor Area: 4,634 Square Feet
 Annual Heat Load: 83 M Btu No Pool
 Annual Heat Load: 133 M Btu + Pool
 DHW Load Included: 40 Gal/Day
 Pool Size: 15,000 Gallons Seasonal Use

EXAMPLE JOB SPECIFICATIONS	
Location	Near Pecos, New Mexico
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Annual Heat Load	133 M BTU + Pool
DHW Load Included	40 Gal/Day
Pool Size	15,000 Gallons Seasonal Use

Note: Pool is seasonal and absorbs less than 250,000 BTU/Day throughout spring, summer and fall.

➔ Turn to STICKNEY on p 66

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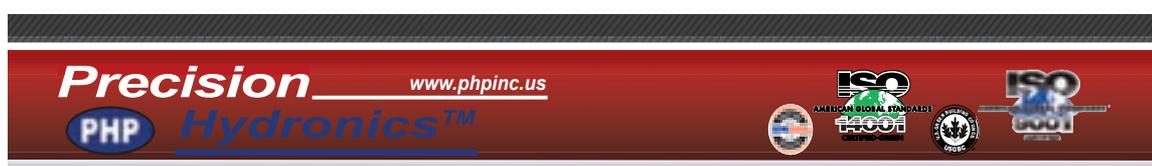
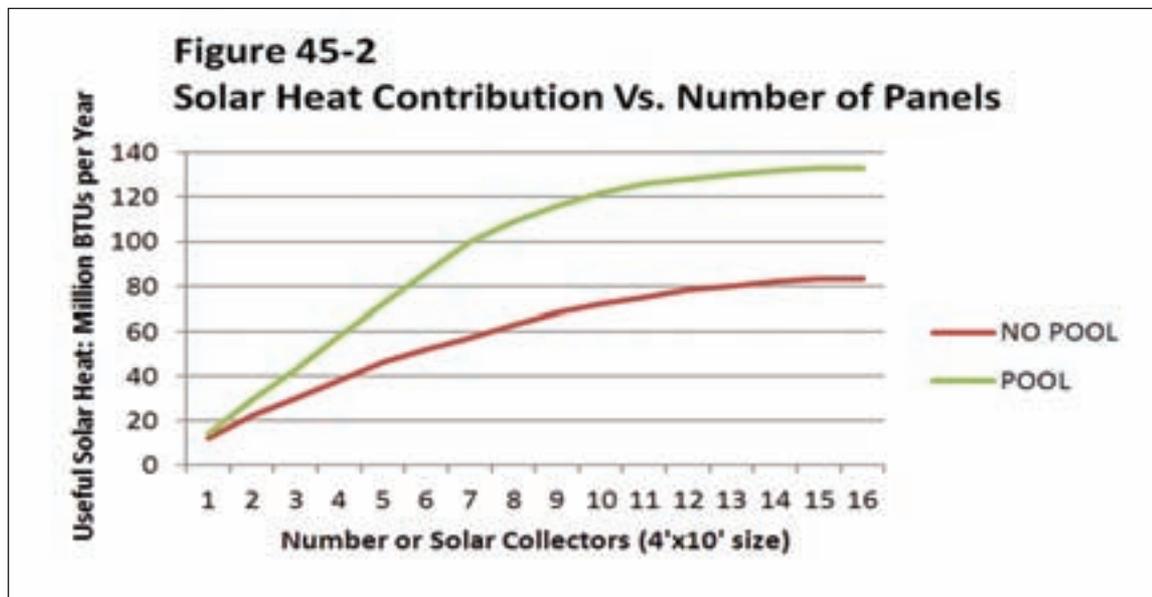
contributed (saved) each year by solar collectors as the number of collectors is increased from one to 16 panels (4' x 10' size) for our example community center building project. On a project of this size, the solar benefit rises steadily as the number of collectors increases until a "knee in the curve" occurs (at around seven or eight collectors in the Pool example). Then, as more collectors are added, the benefit raises more slowly until around 15 collectors, where the curve becomes flat. This is the asymptote, where the real benefit from additional collectors stops. You can think of this as the point of diminishing return, where the "return" on additional collectors becomes zero. Another way to say this is that the nominal annual solar heating fraction becomes 100%. This is based on annual results when using typical meteorological year (TMY) weather data. When the weather is not "typical" or when a different building plan is used, the point of zero return can change.

The sweet spot in this example appears to be in the middle of the "knee" of the curve, where 70 – 80% of the annual heat load is provided by solar. This number of collectors can be pumped with a single circulator, so the extra complexity of using two banks with two pumps is avoided. It is interesting to note that the annual solar contribution is nearly doubled when useful heat can be collected throughout the summer season. This might be good to keep in mind the next time a solar heating opportunity comes along at a motel, B & B, public building or other reasonable location where a swimming pool might fit in.

Final notes

These articles are targeted toward residential and small commercial buildings smaller than 10,000 square feet. The focus is on pressurized glycol/hydronic systems, since these

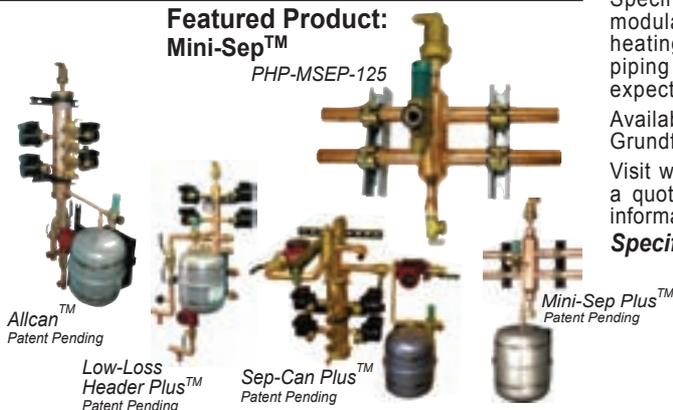
systems can be applied in a wide variety of building geometries and orientations with few limitations. Brand names, organizations, suppliers and manufacturers are mentioned only to provide examples for illustration and discussion and do not constitute recommendation or endorsement. The simulation modeling and graphics presented here were accomplished using "SLASH-D" software from SolarLogic. ●



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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.

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



Hard working Studio 804 students gather around the 1,200-gallon rainwater catchment tank to take a break in the shade.

“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 everywhere, 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 2½ 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 shoestring 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 steel floor and the limestone exterior.”

Rainwater collection

One facet of the project that scored many LEED points

➔ Continued on p 70

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A 1,200-gallon tanks that serves as the storage for a Brae rainwater harvesting system is installed in the back yard of the Center of Design Research.

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.

To provide energy efficient ventilation, an ERV was

installed. For the best indoor air quality, frequent air changes are needed, 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 includes a small heat exchanger connected to a ground loop. A 120-foot loop of 1/2-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."

A three-zone, mini-split system handles supplementary heating and primary cooling for the super-insulated 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. ●



Round ductwork in the basement of the Center of Design Research provides both intake and exhaust for the ERVs, which are the backbone of the systems in the building.

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BARE BONES BIZ

Pin it to win it

BY ELLEN ROHR CONTRIBUTING WRITER

Have you been to www.Pinterest.com? If so, odds are you spent a lot of time there, compulsively looking at just-one-more page of beautiful images. If not, ask a few people in your life about Pinterest. You'll get some animated responses, particularly from women, as they talk about their boards and pins and exactly how they are going to redo the bathroom, travel through Italy or lay out the garden.

What is Pinterest?

It's a virtual cork board, upon which you can "pin" images and words. If you like something someone else has pinned, you can re-pin it on your board. You make friends by following other "Pinner;" they can respond to re-pin your images, and, well, you start to get the idea.

What's in it for you?

I'm a big fan of visualization and have always put "vision boards" together to help me set goals and make things happen. You too? Then you will love creating boards for "Vacations" or "My Dream Home" or "Family Reunion." So far, only 13% of Pinterest users are men. However, a 25-year pal of mine has started boards for his favorite sports images and for motorcycles he would like to ride and buy. On a personal level, Pinterest can be a fun, positive way to clarify your vision and intentions. Cool, right?

From a business standpoint, Pinterest may be the next best social media community and an opportunity to connect with your customers in a powerful way. If women are your target market, you are in the right place. A flat-out sales pitch is not a good first approach. Consider, instead, how to make friends and influence people. Social media is replacing the backyard fence. Relationships first. Then add some relevant, entertaining images of what you do, why and how.

What to Pin?

If you do bathroom remodeling, you could pin before and after photos of your projects. Re-pin and upload other's images and comment on cool images they put on their boards. Ask for Pinner to share their best bathroom ideas with you and see what emerges creatively. Start a board that illustrates the community outreach work you do or includes tips for do-it-yourselfers. Pin pictures of clients and include their glowing testimonials. Remember to include your website address as, according to Inc.com columnist, Marla Tabaka: *"I heard from more than 50 small businesses when I reached out for Pinterest success stories. Most of them indicated that Pinterest is among their top-10 referring sites. These entrepreneurs feel that their consumers are expressing higher levels of loyalty, due to the community being built around the brand. And many claim that traffic generated from Pinterest far exceeds traffic numbers from Facebook and Twitter combined — not bad for a newbie forum!"*

If you are already overwhelmed by Facebook and Twitter and Linked In, etc., Pinterest may be your next "should do" on a long list of social media good intentions. If you think social media is a fad or doesn't pertain to you, think again. Ask the next five people you encounter how

they find a new restaurant or a service provider. You'll get answers such as www.google.com or www.yelp.com or www.aroundme.com. Ask how they would learn how to change the battery on their phone if they needed to. See whether they steer you to www.youtube.com.

Who can help me?

Have a young person (a customer service rep who is under 25?) help you. Young people are on these sites every day. They can show you the ropes or lead the charge on your company's social media presence. Start a Facebook page. Get tweeting ... and Pinning. According to www.comScore.com, Pinterest hit 11.7 million unique monthly visitors in January, making it the fastest stand-alone site to cross 10 million visitors. Find Lowe's and other heavy-weight companies and see how they are playing. Consider how another company who serves your target market (Starbucks?) pins and engages followers.

What's not to like?

Here today, nowhere tomorrow. Remember myspace and prodigy? What connects people today may be gone in a heartbeat. Right now, it's free to pin on Pinterest but can pay for Pins be far behind? Also, there are copyright issues brewing on all these social platforms. Pinterest offers some good guidelines on their site; however, laws are being crafted in the decidedly un-hip halls of Congress to limit sharing. Any social media can be a colossal time waster if you don't set some time limits. One more thing: You have to be invited to join Pinterest by someone who is on it. Maybe that's how they keep computers from "spybot" accessing the site? Don't know, but I am happy to send you an invite. Leave me a message at www.facebook.com/ellenrohr.

Bottom line

Lucky you, you are on the cutting edge of our quantum-leaping universe. The future, aka 15 minutes from now: no Yellow Pages, dwindling magazines and newspapers are replaced as wireless communication expands, relentlessly, at light-speed, connecting people to everything they need and want. My encouragement: Embrace it. Pinterest is the hot new thing. It may become the next Facebook, and your early adoption may serve you well. Or, it may fall into oblivion. But social media is how we are connecting and doing business.

Follow my Pins

Check out my Books board on Pinterest. I've assembled images of my favorite books at <http://pinterest.com/ellenrohr/books/>. Recommend a book that has had a powerful impact on you. (Thanks!) ●

For more on Pinterest statistics, go to <http://mashable.com/2012/02/28/the-marketers-guide-to-pinterest-infographic/>.



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| **TOOL CRIB** |

TOOL OF THE MONTH

Impact drivers

DEWALT announced the launch of three new 1/4-inch Impact Drivers (DCF895C2, DCF895L2 and DCF895B) that feature the company's first-ever Cordless Brushless (BL) Motor technology, which is engineered to achieve maximum runtime. The DEWALT-designed and built BL motor works more efficiently compared to brushed motors, and provides 57 percent longer runtime versus DEWALT brushed impact drivers, and 1.5 times more runtime versus competitors' impact drivers in a compact, cool-running, durable cordless power tool.

DEWALT.

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Lightweight and easy to carry, the RIDGID Locking Steel Tape Measures are designed with a comfortable grip on a heavy-duty tape measure structure. The durable tape measures are available in 16-foot (Model 616) or 25-foot (Model 325) versions. The tape measures are equipped with a rubber case that has stainless steel caps and provides grip traction in wet conditions. The extra-wide (1 1/16") measuring blade is easy to read, nylon coated and abrasion resistant.

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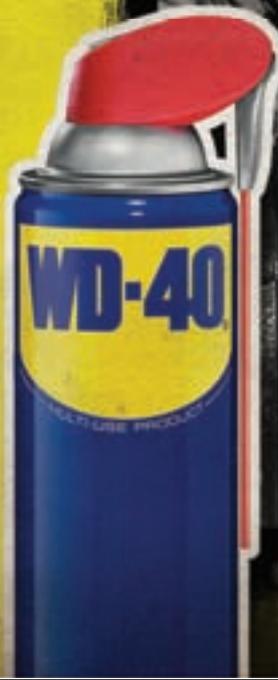
The M18 FUEL™ 1/2" drill/driver (2603-20/22) and M18 FUEL™ 1/2" hammer drill/driver (2604-20/22) integrate three ground-breaking cordless technologies to deliver up to 10 times longer life, 25% more power and 50% more run time for the professional tradesman.

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Harvesting the Rain

BY MARK GIRGENTI

9.7 percent of all the water on Earth is not available for human use, being locked in oceans, ice and the atmosphere. With just a fraction of water available and with the ever-increasing movement toward green technologies, water recycling has come to the forefront in building design and integration. In the past 10 years, these technologies have taken root in commercial, municipal, educational, residential and industrial buildings. A great deal of this emphasis has come from the Leadership in Energy and Environmental Design (LEED) program and green building standards that require water reduction and water recycling systems.

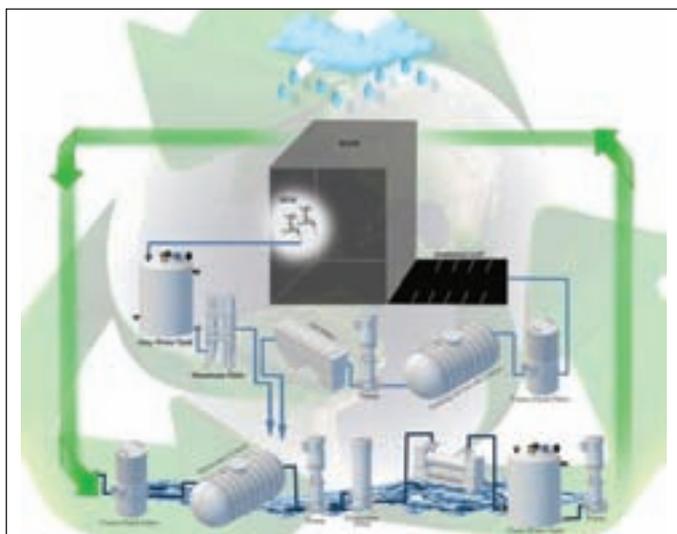


Figure 1. Rainwater harvesting system

Various types of water are being recycled today. It is important upfront in a project's design phase to review the quality and nature of the water to be recycled, as this has an impact on the treatment and available uses. The most common reclaimed water source is rainwater. Rainwater recycling in its basic form is the catchment, capture, treatment and reuse of direct precipitation.

The nature of rainwater

Rainwater has some very useful characteristics. First, due to its lack of contact with minerals found in bodies of water and in the ground, it has virtually no hardness and very low total suspended solids (TSS) and total dissolved solids (TDS), generally around 20 parts per million (ppm) compared to city water, which can have TSS/TDS as high as 800 ppm. As a downside, the majority of rainwater that falls in the United States is acidic in nature, due to its lack of contact with neutralization minerals found in the ground as well as to its capacity for dissolving carbon and sulfate molecules in the atmosphere.

Rainwater harvesting system components

The anatomy of a rainwater harvesting system involves several key components. These include a catchment surface for the rainwater, a gutter or conveyance system to transfer the rainwater, a collection cistern for storage and a treatment system. The treatment system consists, at a minimum, of pressurization pumps, filtration, sanitization, dye injection as required by local codes and additional treatment depending on the quality of the water (See Figure 1).

Calculating the supply

The roof catchment surface determines the overall volume of the rainwater that can be collected. The general rule of thumb for determining the volume of the water collected is shown in Figure 2. First, calculate the square footage of all flat and slightly angled roof surfaces. Then calculate the square footage of all vertical surfaces on the roof and multiply that number by a factor of 0.5. (You can only collect water from two vertical sides on a four-sided vertical catchment surface during any given precipitation event.) Adding these two numbers gives you the total collection surface area.

Multiply this value by the average rainfall in feet in

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one month. (A good source of this data is worldclimate.com). Then multiply by 0.65, which is a correction factor that accounts for approximately 35 percent of rainfall loss due to runoff, evaporation and freezing. This value can be as high as 42 percent in areas with very high hourly rainfall totals (four – eight inches per hour).

Finally, multiply by the runoff coefficient, which accounts for additional rainwater loss due to the roof material. Clay and concrete roofs, as well as ceramic and asphalt tile roofs, can add an additional 10 percent rainwater loss due to their porosity and texture. (Runoff coefficients for various surfaces can be found in design handbooks.)

It is important to note that most rainwater system designs also require you to review five- and 100-year rainfall events to determine a maximum single precipitation event. The purpose for this is not to calculate the rainwater capacity but to size the storm drain piping (outside the scope of this article). This is important when sizing roof or conveyance system prefiltration systems.

Water pretreatment

The treatment process for rainwater begins at the roof surface. Before the water is stored, it passes through a conveyance/gutter system. There are two types of pretreatment filters in this piping system. The first type is referred to as a first-flush device. These are mechanical float systems that divert approximately the first five percent of collected rainwater directly to the storm drain; the majority of the contaminants found on the catchment surface are washed into the gutter

volume for the water use for the longest drought period in the region will guarantee the maximum use of captured rainwater. Across the United States, drought periods vary widely, from 10 days to 125 days. This can lead to the need for large cisterns, so a balance must be struck between optimizing water recovery and the available space and budget for the application.

Cistern features include level controls to monitor volume and transfer to the point of use, manways for access and overflows in the event of a large precipitation event. Additional features include floating filters that allow cistern pumps to draw off the middle layer of the tank, which mitigates pumping the solids that build up at the bottom of the tank, and smoothing inlets, which prevent the agitation of built-up debris in the tank.

Water treatment

Treatment is the final step in the rainwater reclaim system. Two types of designs include similar components but differ in how they interact with the cistern. The first type is referred to as the direct storage system, which pressurizes the water for use directly from the cistern through the treatment system. They are used primarily for low-flow applications or tight footprint constraints. Since rainwater reclaim systems act as a second nonpotable water source for a building, they generally require high instantaneous, but not sustained, flow rates for use in flushing. Direct storage systems are not practical at high flow rates, since sizing the entire treatment system for these instantaneous flow rates leads to increased cost, footprint and utility requirements.

Figure 2. Calculating rainwater supply



system during the first few minutes of a precipitation event. By diverting this water from the reclaim system, the contaminant load that the treatment system must remove is reduced.

The second pretreatment device is a gravity screen filter, which filters large sediment and either flushes a continuous stream of sediment and a fraction of the reclaimed water (generally in the range of 15 percent) to the storm drain or collects the particulates for removal later. These filters are used primarily to prevent large particulates such as leaves from entering the reclaim system.

Storage tanks

The third component of a rainwater harvesting system is the storage tank for the collected rainwater, which are available in a wide variety of sizes and configurations. The most common styles are interior thermoplastic or fiberglass tanks (if the building footprint permits), exterior thermoplastic, fiberglass, concrete or wood tanks and buried fiberglass or concrete tanks. Metal tanks are not commonly used for rainwater storage, because the acidic nature of rainwater can cause metal leaching and discoloration of the water.

Tank sizing depends largely on the application. For LEED designs, the tank is sized for a minimum volume of two days of water use. This is generally considered a fairly small volume of collected water. Sizing the tank

For projects requiring high flow rates, a second design referred to as cistern storage is often utilized. The main difference between direct and cistern storage is that in a cistern storage system, water is pressurized from the cistern through the treatment system to a clean water tank, which serves as a break tank. This clean water tank is considerably smaller than the cistern and is pressurized for use; thus the treatment system is independent of the building’s use flow and pressure. Since building use is an instantaneous flow, the clean water storage tank can be constantly filled at a lower flow rate, which reduces the size of the treatment system.

Regardless of the system style, all treatment systems are designed to filter, sanitize and dye (if required) the water, with other treatment options available, depending on use, degree of contamination and local codes. Filtration integral to the treatment system is finer than that in the roof conveyance system pretreatment filters. The filters in a treatment system are designed to filter to the 50 – 10 micron range, depending on the application. The filtration is a step-down process, and the filters are duplexed to allow them to be replaced without shutting down the system. Filters are monitored by means of a differential pressure switch.

Filters are either cartridge or bag filters. On higher flow systems, using low-flow backwashable filters is common to avoid wasting water during the cleaning

cycle. Multimedia filters are not common on water reclaim systems, due to their high backwash requirements. If the water is going to be used for potable uses, a one-micron NSF absolute filter is required.

The second step in the treatment process is disinfection. The two types of disinfection most

Regardless of the system style, all treatment systems are designed to filter, sanitize and dye (if required) the water, with other treatment options available, depending on use, degree of contamination and local codes.

commonly used in water reclamation are chemical and radiation (ultraviolet, UV, light). Chemical treatment uses chlorine or ozone. The main advantage of chlorine disinfection is its residual disinfection after initial contact. One disadvantage is its long residence time requirement before disinfection begins. It can take 20 – 30 minutes or longer for chlorine to start disinfection, because it is dependent on factors such as the pH of the water. It also requires agitation due to its differences in

specific gravity with water. Another detriment of chlorine is that it does not treat common parasites such as Legionella, Giardia, and Cryptosporidium. Further, it cannot be used in applications where the reclaimed water will be used for irrigation or chemically sensitive equipment. Ozone has gained popularity over chlorine recently, due to its increased potency as well as to its easy removal with the use of UV destruct.

Due to the disadvantages of chlorine, UV is the more common form of disinfection used. UV used in rainwater reclaim systems is in the 254 nanometer range, and intensities range from 30,000 to 186,000 milliwatts per square centimeter, depending on the water contamination. UV has the advantage of instantaneous treatment as well as having no chemical handling or residual in the water to affect irrigation or sensitive equipment. Its only disadvantage is that it has no residual disinfection after initial contact.

Identification

In addition to treatment, these systems also utilize several technologies to identify the water as a nonpotable source (which is much more common than potable reclaim systems). This includes nonhazardous blue food dye injection, which provides a visual warning of the nature of the water. In addition, the system plumbing as well as field-installed plumbing is colored or painted purple to identify it as a nonpotable source

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FROM THE DESK OF...
John Hazen White, Jr.

Weather the storm

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



What kind of year will 2012 be for our industry? For those of us on the heating side of the business, the prolonged mild weather hasn't helped business in the first quarter. The 2012 winter now behind us was almost the exact opposite of the more customary winter we experienced last year, and sales certainly reflect that.

Whether 2012 will be a weather anomaly or the beginning of a multi-year trend toward milder winters remains to be seen. And, based on a single off-year, it remains simplistic to say that the winter of 2012 is firm evidence of global warming because next year we could be inundated with the kind of snowfalls and freezing weather that are welcome conditions to those of us in the industry. Long-term weather trending is still a very inexact science.

Folks are now wondering what this spring and summer will be like. We are already on track for a most unusual spring, it seems, with temperatures in the 70s in the month of March. Are we on track for a record-breaking summer that will be a boon to business on the cooling side? You can be sure that many homeowners and communities are wondering if they're going to have to deal with a very hot and prolonged summer and whether their equipment is up to the job.

"Cautious optimism sentiment at AHR Expo"

Weather aside, 2011 was a fairly good year in a slowly recovering economy, and what's generally spoken of as "cautious optimism" was the prevailing sentiment all over the AHR Expo in Chicago this past January. Equipment orders were generally up from 2010 and construction employment rose in a number of states between December 2010 and 2011, despite the still weak housing market.

Homeowners are increasingly turning to renovation improvement projects in their homes at a time when they can't sell their homes at a profit so will be staying put for a while. That trend increases work for hungry contractors not working on new home constructions and installations. On the commercial side, where business remains better, a wide range of institutions are still constructing new buildings and rehabbing older buildings to increase energy efficiency for the long haul.

Relentless pressure on energy prices will remain a real boost for manufacturers supplying energy efficiency enhanced equipment and systems. And savvy contractors are expanding their range of services utilizing the astounding array of smart new equipment the industry is producing, thereby positioning themselves to take full advantage of an accelerating recovery when that occurs. U.S. demand for HVAC equipment is expected to increase by a factor of 5.1 percent annually, nearing \$17 billion by 2015.

As business people, whether you're a contractor, wholesaler, rep agent or a manufacturer, optimism is the key to success. There are still headwinds out there for sure but the trends are encouraging. Now is the time to be smart, prudent, and in position to take full advantage of better times ahead.

GREEN SYSTEMS ➔ Continued from p 79

for future occupants and contractors. Not all of these features are used on every system, and these requirements vary by region and local codes.

Secondary water sources

One of the primary disadvantages of rainwater harvesting is a potential lack of volume and consistency, since rainfall itself is inconsistent. In commercial applications, this is not usually a problem when the water is used only for flushing fixtures. However, if used for high water demand applications such as cooling towers or irrigation for large landscapes, rainwater harvesting alone may not be able to provide enough supply. To compensate for this, other reclaim sources are typically combined with the reclaimed rainwater to meet the demand.

One of the most common secondary sources of reclaimed water is process water reject. This includes sources such as HVAC condensate, cooling tower blowdown, chiller condensate and reverse osmosis (RO) reject water. There are many advantages to combining these sources with rainwater. Water sources such as RO reject and cooling tower blowdown tend to have very high hardness and TSS/TDS levels, which can lead to scaling in reclaimed water systems and downstream components. When these sources are combined with the very low TSS/TDS concentration found in rainwater, a beneficial dilution effect can occur. These sources also do not possess the bacterial or chemical contamination found in other reclaim water sources.



Figure 3. Combined rainwater/graywater system

The second most common secondary source is graywater (See Figure 3), or wastewater from domestic use such as laundry, dishwashing, bathing, handwashing and cleaning (but not sewage). In some jurisdictions, it is further categorized into two distinct types: light graywater and dark graywater. Light graywater is water as described above that has not come in contact with food preparation activities. Dark graywater is water that has come in contact with food preparation. The reason for the distinction is the level of additional bacterial contamination that is found in dark graywater. Unlike rainwater and reclaimed water sources, graywater has high bacteria levels and chemical contaminations, generally found in the form of phosphates, nitrides and chlorides, which are common in detergents. These contaminants, depending on the water use, generally require additional treatment beyond what is required for rainwater and process waters. Therefore, graywater is usually pretreated prior to being combined with the other reclaim streams.

It is worth noting that if you use a combination water system, the quality of the water will be the lowest quality water you are using. For example, if you combine graywater with rainwater, all of the water will be graywater. Most secondary reclaim sources such as HVAC condensate or RO reject will dominate the water you are reclaiming, as they are more consistent and, over time, will produce far more volume than the reclaimed rainwater.

It is also important to note that in most municipalities you cannot send secondary reclaim sources to a tank or cistern that

can overflow to the storm drain. These secondary sources must be discharged to the sanitary system, and multiple storage tanks may be required.

Other treatment options

Besides filtration and disinfection, other treatment options are available, depending on the nature of the reclaim water. For very acidic rainwater and graywater streams, pH adjustment can be added to the

and environmentally friendly system. ●

Resources

1. Macomber, Patricia S. H., Guidelines for Rainwater Catchment Systems for Hawaii, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, 2010.
2. Texas Guide to Rainwater Harvesting, Texas Rainwater Development Board, 2002.

One of the most common secondary sources of reclaimed water is process water reject. This includes sources such as HVAC condensate, cooling tower blowdown, chiller condensate and reverse osmosis (RO) reject water.

system. This helps mitigate metal leaching and corrosion of piping and fixtures. In addition, membrane filtration is used to remove color, which can occur from metal leaching and groundwater contamination. This is also used on potable rainwater systems to filter viruses, pyrogens and metal ions.

In the event that the catchment surface is a parking lot or asphalt area, pretreatment for oil removal as well as emulsion breakers may be added to remove these additional contaminants.

If chemical contamination is a concern, such as from heavy organic contamination, an oxidation process can be utilized, as well as organic membranes and slow sand filters (often referred to as bio-sand filters), which utilize a schmutzdecke to remove organic and biological impurities. (Schmutzdecke is a biological layer that forms on the surface of a slow sand filter and aids in the water purification process.)

It is important in rainwater harvesting system design to understand upfront the source of the water as well as its end uses. This upfront knowledge will allow for proper system sizing to maximize the water that can be reclaimed and to identify the correct level of treatment for a safe

3. Georgia Amendments to the 2006 International Plumbing Code, Appendix 1, "Rainwater Recycling Systems."

Mark Girgenti is the lead sales and design engineer for Burt Process Equipment, an environmental process design and equipment firm. Mark has spearheaded the design, integration, project management and construction of water treatment equipment for rainwater harvesting, graywater and high-purity water systems in the governmental, institutional, and pharmaceutical industries, both in the United States and abroad. Mark has been a speaker at numerous green building and plumbing events across the country and was a presenter at the ASPE 2011 Technical Symposium. He holds a Bachelor's degree in Chemical Engineering from Rensselaer Polytechnic Institute and a Master of Science in chemistry. He is actively involved in academic circles as a professional member of the Graduate Advisory Committee for Southern Connecticut State University as well as serving as a volunteer faculty member.

He can be reached via email at markgirgenti@burtprocess.com.



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Sloan and ATS expand partnership

TORONTO — Sloan vitreous china fixtures are the newest offering available through Allied Technical Services (ATS) specification services. This latest, mutually exclusive sponsorship and product category inclusion of Sloan vitreous china fixtures on the ATS Spec U.S. website will allow for even broader product offering to engineers, architects and designers.

Other Sloan products, such as electronic faucets, flushometers and sink systems have been specified through ATS for the past several years. In addition, easy access to BIM models of Sloan's product lines are made available through ATS and through Sloan's website.

ATS specification service enables users to compile and review various combinations of Sloan water- and energy-efficient commercial plumbing systems, complete with images, written specs, design details

and Revit files, while maintaining a customized vision throughout their design and specification process.

The vitreous china fixture line from Sloan includes:

- High-efficiency toilets. Choose from wall-hung and floor-mount, dual-flush (1.6/1.1 gpf) and single-flush toilets (1.6 gpf and 1.28 gpf) that can be paired with various models of Sloan battery-powered, solar-powered, hardwired and manual flushometers.
- High-efficiency urinals. Sloan offers both standard wash-down urinals, which flush at 1.0 gpf, 0.5 gpf, 0.25 gpf or 0.125 gpf and larger-footprint retrofit urinals (0.5 gpf, 0.25 gpf and 0.125 gpf), as well as waterfree urinals for 100% water savings.
- Bedpan lug bowls. Wall-hung and floor-mount 1.6 gpf bedpan toilets provide for convenient bedpan washing in hospitals and can be

paired with Sloan's bedpan washer flushometers.

- Gravity series tank toilets. Two-piece gravity toilets for light commercial applications are available in dual-flush (1.6/1.1 gpf), 1.6 gpf and 1.28 gpf models.

- Lavatories. Wall-hung, drop-in and under mount vitreous china sinks may be matched with any of Sloan's sensor-activated, deck-mount faucets and soap dispensers.

Trimble forms new field service management division

SUNNYVALE, CALIF. — Trimble has formed a new division within its Mobile Solutions segment to consolidate and focus its efforts on delivering end-to-end Field Service Management solutions for markets such as communications, oil and gas, and industrial equipment.

Trimble provides solutions in capacity planning, scheduling, route optimization, and work and fleet management to customers worldwide. The division will focus on further strengthening its Field Service Management portfolio by developing solutions that assist large field-based workforces to drive efficiency throughout all phases of the field service workflow, from planning to execution and analysis of the work, field worker and field assets.

M&G DuraVent announces new sales rep agency

VACAVILLE, CALIF — M&G DuraVent, a leading manufacturer of chimney and venting products for the Hearth and HVAC industries in America and Canada, announced the addition of J&K Sales as its new sales representative agency for the New England territory including Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

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Oil-heat pros get their motors runnin'



Taco president John White Jr., an avid motorcyclist, and Common Ground's Dan Vastyan admire the custom-built machine.

Steppenwolf's "Born to be Wild" was a theme song for generations of bikers. Thought the soundtrack may have changed through the years, hard working American trade professionals are among those who enjoy good, all-



outdoors romp on th' road.

At this year's OESP (National Association of Oil and Energy Service Professionals) convention, May 20 to 24 at the Rhode Island Convention Center in Providence, the popular, event-opening, all-day fund-raiser will again involve bikers, cyclists, walkers and runners, joined by a cause to help those less fortunate.

"As we've done for several years, we'll open this year's trade show and educational event with the 'Oil Heat Cares' fundraiser, with proceeds that help families in need by improving heating systems," said Judy Garber,

executive director of OESP.

On Monday, May 21, the "Oil Heat Cares" event will involve motorcycling (starting at 10 a.m.), bicycling (at 1 p.m.), running and walking (at 4 p.m.). Be sure to visit the OESP website for more information at www.thinkoesp.org.

All bike rides lead to providence

If you like the rush of the road and quick response of a throttle, OESP's motorcycling group — the event's newest entry — will be sure to please. Roadmaster Kevin Bowman, branch manager, Bell-Simons Company and member of the Rhode Island OESP Chapter, has mapped-out an all-day ride into Northern Connecticut with a stop at the Vanilla Bean Café that will conclude with a tour of Taco, Inc. Why, it's as American as hot dogs, baseball and Taco's 007.

The biker spirit thrives at Taco. CEO Johnny White rides an old Fat Boy or a sassy new Rocker. Product manager Carl Perrone buzzes around on his four-cylinder Yamaha V65 muscle cruiser, while Taco-Canada's Sean Giberson tools around in the Toronto area on his silver VTX1800 chick magnet.

Coming to the event from afar is Long Island's hydronic trade pro Billy Weiner who, last year, bought a

new Harley, replacing an Electra Glide he'd ridden for years. Also planning to ride: George Perrelli, F. Perrelli & Sons, E. Haven Conn.; Ralph Adams, Parker Fuel, Ellicott City, Md. and David Bessette, MacFarlane Energy, Dedham, Mass.

Talk to any trade pro/motorcyclist about their bikes and be prepared to do a lot of listening. There's a romance to the road that's only possible to know, see, smell and feel when there's nothing between you and an open horizon. On a bike, it's just you, the engine's rumble and thrust, the wind against your chest and that bug-spitting grin on your face.

"Riding takes a back seat only to the family and fishing," said Minnesota contractor Eric Aune, who's been known to visit customers or submit estimates aboard his '83 Road King "shovelhead."

Hog fever

John Perry of Advanced Comfort Systems in North Smithfield, R.I. comes from a family of bikers. "I use my Dad's Road King," said John. "Actually, it's more my Mom's than my Dad's — she rides it more than he does, and she's in her 70s!"

Hog-fever has sparked a special "Biker's Club" group on Taco's FloPro

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Industry writer Dan Vastyan built the "Taco Bike," a lean, custom "bobber" that first saw public scrutiny at the 2011 NAOHSM/OESP show in Hershey, Pa.

Neighborhood (visit flopro.taco-hvac.com and from there log in or register for the a.) FloPro Team and also the b.) FloPro Neighborhood), where bikers show off their motobabies and swap stories about especially good rides. There you'd see news of Taco-inspired biker and industry writer Dan Vastyan who

went tire-to-tire with OCC on a chop-shop effort to build an ultra-custom, old school "bobber."

An avid biker and Taco fan, Vastyan combined his passion for hydronics and two-wheeling to build the "TacoBike" which made its debut at the NAOHSM/OESP show in Hershey, Pa., last year. It's a lean,

green hard-tailed machine that embodies the essence of good Taco customers everywhere: solid, compact and powerful; stealthy and low to the ground; custom-fit for the

"Riding takes a back seat only to the family and fishing."

— Eric Aune

biker seeking the open road's heart and soul.

"There's no other machine like it on the road," said Vastyan. "From its Taco 'tattoos' and big, fat whitewall tires, hand-crafted leather seat with FloPro impeller and a WWII artillery



shell casing air filter frame, to its custom and rigid frame, the machine was built to be like Taco in every way possible a bike could resemble a manufacturer and its customers.

"We now know so many people in the Taco camp, with loads of bikers at the company and among its customers," Vastyan added. "The inspiration to build a bike honoring them was an easy thing to do — and a whole lotta' fun in the process.

"In fact, Johnny White liked it so much that he bought it to display it in their new Innovation and Development Center that will be close to completion when the OESP convention is held," he said.

The "Oil Heat Cares" motorcycle ride will include a trip to Taco and the state-of-the-art learning and training facility.

So if you're planning a trip to this year's OESP show, and if you like to walk, run, bicycle or moto-bike for a good cause, consider Oil Heat Cares — www.oilheatcares.com.

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Tempered by adversity

BY JIM SCHAIBLE, MANAGING EDITOR

Sifting through the responses for this year's Top 100 contractors, one overriding factor became apparent to us — contractors refuse to give in to a tough economy.

Sure, the past few years have been the most challenging in memory for most of us, and almost all the respondents report reductions overall, but the responses also revealed a great deal of resiliency and trust in good personnel.

Reduced profits were the main concern for nearly everyone; only three contractors responding to our survey reported the recession hasn't affected them. Among the rest, the most commonly reported detrimental effect of the downturn was reduced margins on reduced activity. Lynn Wilson of Nashville Machine Co. spoke for most contractors when she reported, "A limited number of projects combined with diminished profit margins."

The numbers have been drastic in some cases, with volume down 30% from 2008 levels in one case, 21% in another, and activity in the residential sector all but moribund. However, nobody is throwing in the towel. In many cases, contractors shifted their activity to government-sector projects, and institutional projects helped take up the slack. Certainly business has been hard, but many contractors see opportunities.

The downturn has forced businesspeople to examine their operations and change accordingly. Gary Peed of Peed Plumbing Inc., says his people have adopted "future vision" with "more planning and creativity, good customer relationships and a diverse customer base."

Jennifer Boe of RK Mechanical says, "It has led to diversification and increased investment within our industry and business relationships."

Josh Schultz of Harris Companies says, "It has motivated us to focus more clearly on our strategic initiatives."

At Gem Plumbing and Heating Services Inc., Jennifer D'Ambra explains, "We have expanded new opportunities in energy efficient plumbing and heating solutions."

These statements define the optimism that is growing as tensions ease. Respondents expect higher volume as the year advances, with "more multi-family work"; "projects that were on hold are starting to be bid now"; "more growth in public work"; "continued pickup of backlog"; "we are optimistic about the future"; and "we see homeowners expecting value for every dollar they spend."

Core business has provided a refuge as well, especially for contractors doing emergency services such as ARS/Rescue Rooter, where Jamie Robinson says, "Homeowners don't have the luxury of delaying necessary repairs of replacements for their plumbing or HVAC problems."

In general, contractors see better times ahead as the economy gradually gains momentum. Government recovery funds helped buoy struggling bottom lines, giving contractors space to re-examine their business models. Diversifying is seen as the most important factor. And as always, contractors emphasized their best assets are well-trained, motivated employees and managers, and maintaining good customer relationships, especially during an economic downturn.

Sam Thurman of Mr. Rooter LLC summed up the most commonly stated attitude among contractors: "We consider customer service the most important factor."

Contractors are opening the throttle for 2012. ●

See Top 100 Listing on page 28

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