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plumbing & hydronic contractor news

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INSIDE:

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On the Cover

Denmark-based Vestas is building the world's largest wind-tower manufacturing plant near Pueblo, Colo., and Olson Plumbing & Heating got the nod to provide the gas and air piping systems for the facility. Olson prefabricated the systems in 40-foot segments using Viega ProPress components, and completed the job in five months. The story begins on page 50.

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54 Mod-Cons 'green up' apartments

When a low-income apartment complex needed new boilers and water heating, contractor Advanced Hydronics stepped up to save tenants dollars and slash emissions with help from Laars and Bradford White.



57 School spirit in stainless steel

University of Minnesota regents were looking for a way to show the university's spirit at its new sports stadium, and Elkay provided the means with sinks, fountains and water coolers emblazoned with the school's emblem, stamped right into the bowls and tops.



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Circle 4 on Reader Reply Card

Study: Toilet replacement project greatly reduces water use, maintenance calls

KOHLER, WIS. — A recent report released by Koehler & Company, along with Veritec Consulting, Inc., determined the replacement of guest room toilets with 1 gpf models significantly reduced water use and maintenance costs at San Francisco's luxury Parc 55 Union Square Hotel.

The study cited an annual savings

of \$170,000 on water and sewer charges, along with nearly 1 million gallons of monthly water-use reduction. Maintenance calls dropped by more than 50%. The Kohler Highline Pressure Lite 1.0 gpf toilet was used for this toilet replacement project, replacing all 1,030 3.5 gpf toilets in the hotel. See www.Kohler.com.

Wisconsin governor signs wind-power bill

NEW BERLIN, WIS. — ABB, a Swiss-based power and automation technologies firm with a campus here, was the site for the Wisconsin Governor Jim Doyle to sign new wind siting reform legislation. The bill calls for the creation of uniform siting standards for wind energy projects, and prohibits a municipality or county from forbidding or restricting "any person from conducting tests to

determine the suitability of a site for the possible placement of a wind energy system, although the political subdivision may petition the Public Service Commission to impose reasonable restrictions on the testing."

The bill covers systems producing less than one megawatt, but includes provisions for persons wishing to construct larger systems to seek review by the PSC.

Green Technology Expo a success

The 2009 Green Technology Expo held at Metropolitan Industries of Romeoville, Ill., and co-sponsored by Grundfos Pump Corporation on September 22 attracted over 200 people interested in variable speed circulators, solar technology, rain water harvesting and more. The focus of the event was to educate and inform decision makers regarding "Green" pumping technologies through displays demonstrating wind and solar power, gray water recycling, rainwater harvesting, eco-friendly waste treatment, variable speed pumping technology and other energy conservation techniques.



L.A. OK's Caroma waterless urinals

HILLSBORO, ORE. — The City of Los Angeles has approved the H2Zero™ waterless urinal by Caroma for use in all buildings.

The vitreous china urinal's Bio Seal™ cartridge technology does not use an oil-based seal, rather the Bio Fresh deodorizing block that is acti-

vated during use by heat from the urine. It allows urine to pass through the seal freely, eliminating waste build-up within the cartridge. Bio Seal lasts up to 10,000 uses and acts as a one-way airtight valve to seal the cartridge from the drainage system. Visit www.caromausa.com.

Hubbard Enterprises/HOLDRITE acquires Presealed Systems' Hydro Flame line

VISTA, CALIF. — Hubbard Enterprises will now offer customers a line of water/smoke/fire stop systems through its recent acquisition of the entire Presealed Systems Hydro Flame product line. The patented Hydro Flame line is a premier cast-in-place water, smoke and fire stop system.

Hubbard's VIP Services and Specification Team will support the Hydro

Flame line with the following services to the contractor, wholesaler and engineer:

- Specification and submittal assistance
- 3-D product drawings
- Custom detail application pages
- Material "take off" assistance to help both the wholesaler and contractor plan for product inventory levels. Visit www.holdrite.com.

Mr. Rooter® executives voice healthcare concerns on Capitol Hill

WACO, TEXAS — Mr. Rooter Plumbing corporate executives Mary Kennedy Thompson and Jeff Moody recently traveled to Washington where they met with policy makers, including Rep. Chet Edwards, and voiced their concerns on healthcare and other issues facing small businesses.

Thompson and Moody shared their support for reducing health care costs and increasing the accessibility of health insurance for franchised businesses and its employees.

"Our franchisees want to provide health insurance for their employees, but right now it is not affordable," said Thompson, president of Mr. Rooter Corporation. "Every year, we travel to Capitol Hill to make sure our voice is heard."

In addition to healthcare reform, they lobbied for capital access, urging legislators to improve access to Small Business Administration loan programs for small business start-up and expansion.

Haws offers 'slightly dented' products online

SPARKS, NEV. — Haws Corporation® has launched The Haws Closeout Store, a discount product website: www.HawsCloseouts.com. The site features bargain-priced cancelled special orders, obsolete, returned, and/or slightly scratched or dented drinking fountains, electric water

coolers, eyewash and eye / face wash stations, drench showers and more. For the launch, all products are discounted an additional 15% through the month of November. The website is designed to complement the current product lines at Haws' main corporate website, www.Hawsco.com.

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THE PULSE

INSIDE THE TRADE

What we're hearing

IAPMO, GreenPlumbers USA form GreenPlumbers India

BENGALURU, INDIA — GreenPlumbers USA and the International Association of Plumbing and Mechanical Officials (IAPMO) have announced collaboration for the creation and administration of GreenPlumbers India, an innovative national training and accreditation program designed to assist Indian plumbing contractors/engineers in understanding their role in environmental conservation and public health.

The Indian Plumbing Association (IPA) will actively support GreenPlumbers USA to ensure the success of this innovative program within each region of India.

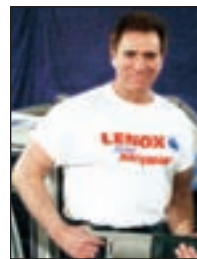
IAPMO-India, IAPMO's business unit within the nation, will administer the program throughout India in cooperation with the IPA and GreenPlumbers USA leadership. GreenPlumbers India will train and deploy a green army of thousands of plumbing engineers/contractors to promote the benefits of water conservation and the reduction of greenhouse gas emissions, ultimately seeking a cultural change

in consumer and plumbing behavior through the use of energy efficiency and water saving technologies.

GreenPlumbers India's program focuses on five modules, adjusted for the Indian market from GreenPlumbers USA's successful existing program. These modules are:

- **Climate Care:** Gas emission management for home and business, hot water heating, energy consumption, heating and cooling appliances;
- **Caring for Our Water:** Water efficient products, reducing household water consumption, stormwater runoff pollution and prevention;
- **Water Efficient Technology:** Recycled water, rainwater harvesting, greywater reuse, septic tanks, wastewater treatment systems;
- **Inspections and Report Services:** Water and energy audits, commercial and residential buildings, master plan for future improvements; and
- **Solar Hot Water:** Solar hot water technology, retrofit sizing and installation.

TOOL TIPS with Hackman



Diamond reciprocating saw blades

Tool Tips feature trade tips from Lee "HACKMAN" Breton, marketing services manager for LENOX, team HACKMAN event manager and car cutter extraordinaire. Every month, HACKMAN shares insight from his 25+ years in the tool industry.

There are two different grades of cast iron, gray and white. Although both pipes are black in color, the



machines with an abrasive wheel, pipe snap cutters or cutting torches. Although these do the job, more often than not, there's very little maneuvering space where these cuts need to be made and the only option is a reciprocating saw with a carbide grid edge blade. And if you've ever done it this way, you know it can be a very slow process that puts a real strain on your arms and back!

The recent introduction of Diamond reciprocating saw blades has made cutting cast iron pipe much easier. This new blade features diamond particles brazed to a reciprocating saw blade substrate that has been specifically engineered for fast, clean cutting action.

The Diamond reciprocating saw blade cuts three times faster and lasts three times longer than carbide grit blades — saving time and money as well as strain on your body. The blade also delivers straighter, cleaner cutting as compared to pipe snap cutters that can crush the pipe and leave a rugged edge. Do yourself a favor and try out a Diamond reciprocating blades. Your body will thank you. ■



white grade has a very hard shell which makes it very difficult to cut. And for anyone who has encountered this grade, you know exactly what I am talking about.

Until recently, the options for cutting white cast iron included carbide grit edge reciprocating blades, cut off

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THE AMERICAN STANDARD Brands online repair parts store offers 150 American Standard parts any time, day or night. The easy-to-use site helps you find and order what you need with a few simple clicks. Clicking on an individual part automatically adds it to the shopping cart, where it can be purchased and shipping information entered.

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FUELS

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Area	\$/gal.	Change
U.S. average	2.574	↑
East Coast	2.525	↑
New England	2.542	↓
Central Atlantic	2.559	↑
Lower Atlantic	2.494	↓
Midwest	2.540	↑
Gulf Coast	2.439	↑
Rocky Mountain	2.516	↓
West Coast	2.871	↓
California	2.988	↓

DIESEL

Area	\$/gal.	Change
U.S. average	2.705	↑
East Coast	2.716	↑
New England	2.752	↑
Central Atlantic	2.831	↑
Lower Atlantic	2.664	↑
Midwest	2.693	↑
Gulf Coast	2.644	↑
Rocky Mountain	2.704	↑
West Coast	2.822	↑
California	2.874	↑

METALS

*Copper	\$2.96/lb.	↑	**Aluminum	\$.85/lb.	↑
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Prices valid as of 10/19/09. Fuel information courtesy of the U.S. Department of Energy <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>. Arrows indicate change from previous issue. * Copper prices according to NYMEX.com. ** Aluminum prices according to metalprices.com.



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For more information on the entire line of Weil-McLain high-efficiency products visit www.weil-mclain.com



Circle 7 on Reader Reply Card

Smart Solar hot water systems masquerade as skylights, feature over-temp protection



LEBANON, N.J. — Energy Kinetics claims its Smart Solar™ hot water systems are easy to install and look like superior quality rooftop skylights. Smart Solar comes with advanced features including a unique wireless energy savings display, and built-in over-temperature protection, so there is no dump zone required. Plus, Smart Solar connects with simple 3/8" linesets and push fittings so no soldering is needed. Its top

rated performance also qualifies for Federal Tax Credits. Energy Kinetics offers the system at a "surprisingly competitive" price. For more information, call 800-323-2066, or log on to www.energykinetics.com/smartSolar.shtml.

EPA releases draft showerhead specification

WASHINGTON — The U.S. Environmental Protection Agency has released for public comment its draft WaterSense specification for showerheads (<http://epa.gov/watersense/pp/showerheads.htm>). Once this specification is finalized, consumers will be able to renovate their bath-

rooms with a full suite of WaterSense labeled products — toilets, faucets, and showerheads.

The average household could save more than 2,300 gallons per year by installing high-efficiency showerheads. Since these water savings will reduce demands for hot water,

households could also save energy powering water heaters. The WaterSense draft specification for showerheads sets the maximum flow rate at 2.0 gpm at a flowing pressure of 80 psi. As with all WaterSense specifications, the draft showerhead specification includes performance criteria to ensure that consumers will not have to sacrifice water coverage or spray intensity to achieve water savings.

ELKAY buys SSP

OAK BROOK, ILL. — ELKAY Manufacturing announced it has acquired SSP, Inc.™, a leading fabricator and importer of stainless steel commercial kitchen products primarily for the foodservice industry. SSP is well known in the foodservice segment of the commercial market where ELKAY is actively expanding its presence. SSP is headquartered in Spokane, Washington, with operations and distribution facilities in the Pacific Northwest and Ohio.

Zoeller Co. loses long-time friend

LOUISVILLE, KY. — Retired vice president of marketing for the Zoeller Company Michael Babrowski passed away October 13, 2009, after a two-year battle with cancer. He was 68. Babrowski, a native of Peoria, Ill. and a 35-year resident of Louisville, was a long-time member of St. Margaret Mary Catholic Church, member of the Louisville Businessmen's Club and a member of the Louisville Sales and Marketing Association.

He is survived by his wife of 45 years, Emily; and son, Timothy Babrowski (Susan); daughter, Christine Landon, grandchildren, Taylor Amanda and Jacob; and his mother, Francis L. Hafner; and three brothers, Jim, David and Steve Babrowski.

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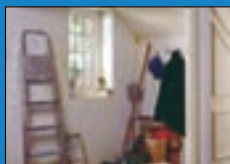
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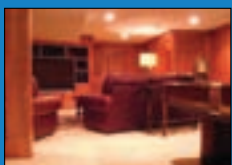
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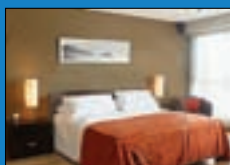
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Building trades unions partner with Native Americans

WASHINGTON — The Building and Construction Trades Department, AFL-CIO and a coalition of Native American Indian Tribal Councils have come together to create the Native American Construction Careers Institute, a partnership that will seek to develop long-term careers in the construction trades for Native Americans. While Native American tribes and America's Building Trades Unions have many common interests and objectives, this is the first time that these two groups have formally joined forces at the national level.

The co-chairs of the NCCI are Mark H. Ayers, president of the Building and Construction Trades Department, AFL-CIO, and Conrad Edwards, a member of the Colville Tribe and president of the Council for Tribal Employment Rights, a national organization that represents the 300 tribes and Alaska Native Villages that have established Tribal Employment Rights offices. The NCCI Board of Advisors is composed of the General

President of the twelve national and international construction trade unions that have signed the NCCI charter and 12 tribal leaders, including the chairs of the Shoshone Paiute Tribe (Idaho and Nevada), the Crow Nation (Montana), the Spirit Lake Sioux Tribe (N.D.), and the Cheyenne River Sioux Tribe (S.D.).

"America's Building Trades Unions are immensely proud to be a part of the NCCI and to work with tribal leaders to provide the much-needed training and expertise that will enable thousands of young Native Americans to secure careers as skilled craft professionals," said Mark Ayers.

According to Conrad Edwards, "America's Building Trades Unions have agreed to bring training onto the reservations, to recognize tribal sovereignty and to indenture any training graduate who wants to become a union apprentice. Without question, they provide the world's best skilled craft training, and they are now bringing that expertise to us."

Texas apartment complex wins with pipe restoration services

BEACHWOOD, OHIO — CuraFlo®, a provider of pipe restoration services for multi-tenant buildings and other commercial structures, was selected by the Bay Harbour apartment complex in Baytown, Texas to install its proprietary CuraFlo Engineered Flow Lining System™ throughout this multi-tenant property.

The Bay Harbour complex is comprised of 10 two-story buildings with a total of 197 units. CuraFlo will line the hot and cold water supply piping in each building in order to prevent future leaks and corrosion, minimize disruption to existing tenants and ensure optimal water flow and quality for years to come. CuraFlo was selected based on the company's es-

tablished track record with a variety of multi-family, commercial and institutional installations throughout the United States, as well as the quality of our epoxy lining process and ease of installation.

As a cost-effective and less-invasive alternative to pipe replacement, CuraFlo's epoxy lining can be installed with little or no downtime while residents remain in place.

"Bay Harbour's management team considered several options, but in the end, they appreciated the fact that CuraFlo's epoxy lining is less disruptive to implement than traditional repiping methods," said Skip Wolfe, vice president of sales & marketing, CuraFlo.

Alabama hotel chains choose Gerber Plumbing

WOODRIDGE, ILL. — Despite a sluggish construction market, three major hotel chains — the Marriott Residence Inn, Holiday Inn Express, and Comfort Inn & Suites have all chosen to take root in the Southern city of Florence, Ala. and are using the same well-known plumbing manufacturer, Gerber Plumbing Fixtures LLC. Each hotel selected Gerber for its top-performing toilets including

the Viper™ and Avalanche™, as well as for its Maxwell faucets.

"We are very excited to have three separate hotel installations in one city. Everyone knows times have been tough and being a part of widespread growth is a testament to Gerber's product performance and overall value proposition," said Kevin McJoynt, director of marketing for Gerber.

Join The Green Scene



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

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

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Circle 9 on Reader Reply Card

THE WALL

Q: Is it acceptable to use drainage copper tube for heating? Any of you guys use this tubing for heating? Thought it was just lately a fad. Guess not. Went to press a fitting onto a 1 1/4" piece of tubing in a 25-year-old system; CRUSHED the tubing! Not to happy about that. A bit of searching and there it was, the infamous yellow writing, very faded.

Man this POed me, seriously! Oh well, the inspectors around here don't say no to such inferior ways, so who am I to argue?

— Leo G.

A: As an apprentice years ago, I went to a training class put on by our local chapter of the Copper Development Assoc. I remember the man showing us charts where it was fine

to use DWV copper for heating systems, mostly because of the lower pressure most of them use. I have used it many times in my systems.

— Dave S.

A: It's very common in my area. It is not too different in thickness from type M, but still thicker than tubing used for many fin-tube rads.

— Dave

Q: Does it matter where I place a new circulator pump? I have an existing large pump on a 1 1/4" pipe going to the return on my boiler. I have a second pump returning below it on a 3/4" pipe. I need to add another pump on a 3/4" pipe for a third zone. Can I have it pipe into the 1 1/4" pipe above the larger pump? If I pipe it in below, can I take it straight into the return at the base of the boiler by adding a tee to where the drain valve is now and just add the drain valve to the end of that?

— Ric

A: You should be able to install a tee at the current drain location, assuming the new tee and the return into the boiler are properly sized. Never tie in above an existing circulator with another; each circ should move water directly into the boiler, or better yet, away from the boiler.

— Al

Q: What are the ups or downs with coal heating? Can it be used in Queens, N.Y. If so, how practical, costly, safe, etc., to use?

— Robert S.

A: When I was a kid we had a coal hot air furnace with an automatic feed hopper. You had to have a coal storage bin nearby and you had to shovel coal morning and evening to fill the hopper, and at the same time, morning and evening, cleanout the clinkers (ash) and put them in what were called metal "ash cans" so they could cool before dumping them in the garbage cans. Every two weeks when new coal was delivered you had to set up a chute so that it could be transferred through a basement window and into the coal bin. After delivery, you had to clean up the basement, as there was coal dust all over. When we switched over to oil, I got on my knees and bowed to the oil tank three times a day! Today I think you'd also run into delivery, air quality and ash disposal problems. Also, about once a month, the auger in the automatic feeder would get jammed on a piece of hard quartz rock that had somehow got mixed in with the coal. (They camouflage themselves by rolling in coal dust so you can't see them!) When the feeder jammed, it broke a shear pin and you had to first unload the coal from the hopper with a bucket and then back the auger out by hand to remove the quartz rock. Needless to say coal dust got everywhere!

— Rod

A: A wheelbarrow full of clinkers being wheeled up a plank on a basement stairway was a difficult, and dangerous job.

— Nicholas B. C.

This chart makes for great bathroom reading.

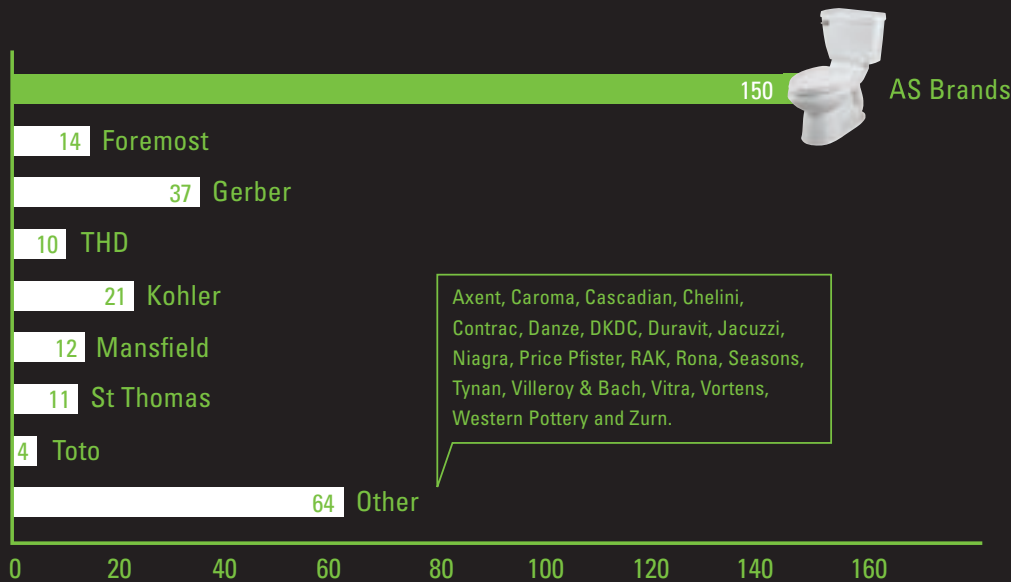
When it comes to high performance toilets, nobody gives you more options than American Standard. We offer 150 models that all qualify for the impressive 1000 gram Performance Club. That's almost three times more than any other manufacturer.

Higher performance means better business, too. Less callbacks and happier customers translate into higher profit margins. Our toilets are made to outperform everything on the market. And that's power you can use.

To learn more, visit us at americanstandard.com.

1,000 Gram Performance Club

Maximum Performance (MaP) Testing of Popular Toilet Models



Source: MaP Toilet Testing Report, 14th Edition a Cooperative Project by Veritec Consulting Inc. and Koeller and Company, May 29, 2009

American Standard
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Circle 11 on Reader Reply Card

Solar Energy is Here to Stay.

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



There's a lot of talk these days about the need to develop alternative energy technologies – wind, wave and solar – both to counter the increasing ill effects of carbon burning and also to create jobs in a new industry. At Taco, we remember this kind of talk back in the 1970s in the aftermath of the OPEC Oil Shock, when interest in developing solar energy became a brief national priority. We saw a market opportunity back then for our residential circulators. But with the return of lower oil prices, investment and tax credits for rooftop solar energy dried up and the market went dead.

This time around, however, it's different. We are just at the beginning a paradigm shift to clean energy, and we've learned by now that fluctuating oil prices are a fact we must live with. We've seen prices for carbon-based fuels go high enough to know that depending on them is detrimental to our economy and our national security. Clean alternative technology, for its part, has developed significantly in recent years, and has at last become practical, in addition to necessary.

In response to this shift to clean energy, Taco has introduced a range of energy efficient "Green" products, including two new products specifically designed for the solar thermal market: a Variable Speed Solar Control Circulator and a Solar X-Pump Block.



Learn more about Taco Solar products at www.taco-hvac.com/solar.html

The **Variable Speed Solar Control Circulator** continuously optimizes water flow through a solar collector to achieve maximum energy gain; it accomplishes this by maintaining the proper Delta through the solar collector over an extended period of time. The **Solar X-Pump Block**, an extension of our all-in-one X-Pump Block, is a breakthrough in the design, control and installation of solar thermal systems, as it combines a variable speed solar differential control, collector circulator, storage tank circulator and a heat exchanger in a single unit.

These products are part of a mix of new energy saving and versatile products that include recirculation and plumb n' plug products for domestic hot water, smart controls and valves, and our new home automation line of controls. All are characterized by ease of installation and dependable operation. Most significantly, they have been designed to function as a system. Developing and offering to the HVAC marketplace *energy efficient systems* is our overriding product development goal at Taco.

Circle 49 on Reader Reply Card

Chicago Faucets: Flexibility and functionality keys to success

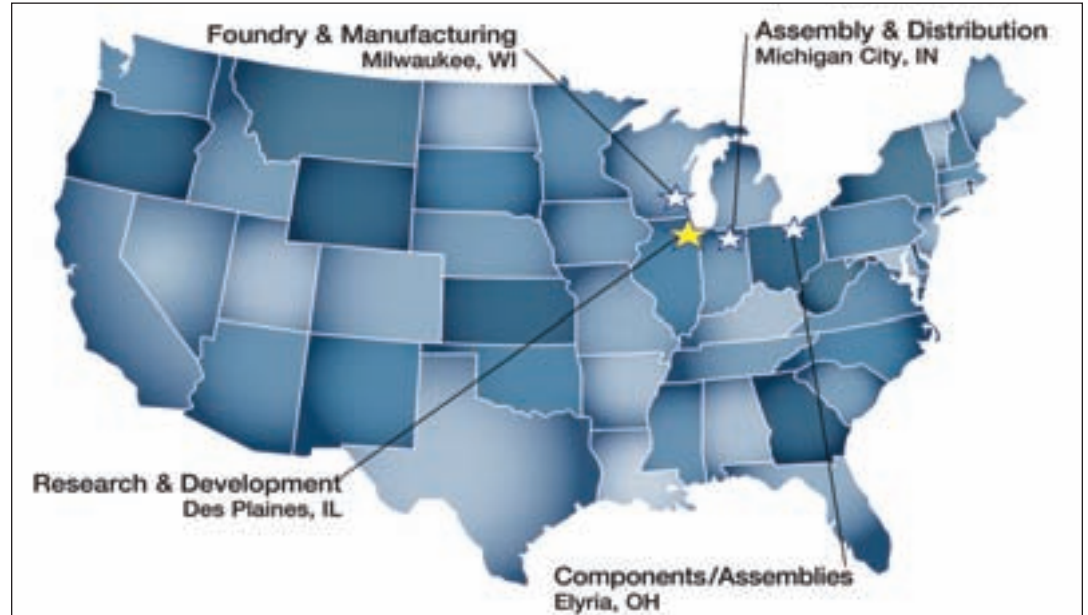
Chicago Faucets has been America's leading manufacturer of commercial faucets for more than 100 years. With manufacturing, research and development facilities located solely in the United States, products are made with an unwavering commitment to quality backed by know-how and determination that is uniquely American.

Chicago Faucet Company.

What is your core business?

Fitzgerald: Chicago Faucets designs and manufactures high quality faucets, fixtures and components for commercial and institutional applications.

How has Chicago Faucets weathered this recessive economy?



The company's foundry, manufacturing, assembly and distribution facilities are located within a 350-mile radius of the Des Plaines- Ill. corporate office. This provides unparalleled control of product quality and an ability to effectively deliver products to any point in the United States. Since A.C. Brown founded the company in 1901, Chicago Faucets changed the world of plumbing forever with more than 50 patents, the most significant

Fitzgerald: Like many other manufacturers, the current economy has played havoc with business. However, Chicago Faucets has distinct advantages over other manufacturers in dealing with that havoc. First, our products are made within a controlled geography. This gives us unprecedented capability to control the quality and delivery of our product. Second, we continually prepare for "what lies ahead." We are constantly gathering data, analyzing it — including social and economic trends — and then determining what we need to do to stay one step ahead.

Our corporate management philosophy allowed us to enter this current economic phase in a strong financial position. As a result, we have been in a position to make investments that we believe will put us in a position to grow out of this economy.

Chicago Faucets operates around many core principles that have helped the company weather the storm — two of which stand out that would interest Plumbing Engineer readers. First, the company's products are designed around flexibility — that is, parts that are interchangeable within the entire product line. This means a distributor — the company aggressively supports two-step distribution — need only carry a handful of SKUs to satisfy the customer. The focus at Chicago Faucets is production cost and manufacturability.

A second core principle is functionality. The company's faucet designs ensure appropriateness for getting the "job done right." The reliability and integrity of our products is time-proven, and with the largest installed base of commercial faucets

(Turn to Chicago Faucets, page 18.)



Chicago Faucets product line includes innovative faucets: the E-Tronic™ 40 electronic faucet (upper left); right is the HyTronic electronic faucet; and lower left is the 802-CP (manual faucet).

being the Quatern cartridge. Patented in 1913, this remarkable cartridge is still interchangeable with any Quatern in existence and is truly the standard of reliability, durability and value in the commercial faucet industry. In 2002, the Geberit Group acquired Chicago Faucets.

The following is an exclusive Q&A with John Fitzgerald, director of marketing, The

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Circle 13 on Reader Reply Card

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Professional Tools

Drip irrigation using rainwater harvesting system provides residential solution

Andrew and Cathy Gerachis, homeowners at The Waters community in Pike Road, Alabama were looking for a solution to prevent flooding in their backyard and a way to economically irrigate their lawn and vegetable, herb and

flower garden.

The compact footprint of their house combined with the high clay content of the local soil created rainwater runoff problems for them and several neighboring homes. During large rainfall events, the runoff from the gutters would cause “ponding” in the yard that would persist for several days.

Cathy Gerachis, director of Landscape Architecture, Goodwyn, Mills, and Cawood, Inc., an architectural firm located in Montgomery, Alabama, was familiar with rainwater harvesting. In her work as a landscape architect, she was aware of rainwater harvesting used in landscape design with LEED® certification. Having used rainwater harvesting on her professional projects, she wanted to do the same on her home. She knew that this “green” idea would not only save on her municipal water bill and give her available water in times of drought, but would resolve her runoff and ponding problem. In addition, it would create an efficient way to irrigate her lawn and garden.

Living in a progressive and innovative neighborhood like The Waters, she talked to her homebuilder about the idea. They agreed that it would be a benefit for her home and

would help showcase The Waters. The builder, Andrew and Dawson, of Pike Road, Ala., researched the idea. Their investigations lead them to another local company, Jay R. Smith

harvesting filters and accessories.

Rainwater harvesting systems are applicable to most types of buildings, providing ready-to-use, stored rainwater for landscaping, lawn irrigation, car washing, janitorial use, laundries, fire protection, or other non-potable uses.

The concept of harvesting rainwater is simple; rainwater is collected



The rainwater harvesting installation is unobtrusive, with only the top of the vortex filter left deliberately visible because it helps educate visitors on how practical and important it is to re-use rainwater.

Mfg. Co., Montgomery, Ala.

Jay R. Smith, in cooperation with their partners Rainwater Management Solutions and WISY AG, was the first U.S. Company to offer a comprehensive product line of rainwater

from a rooftop. The harvested rainwater is conveyed through the gutters and piping to a filter (Figure Number RH9520-04, Vortex Rainwater Fine Filter) that removes the debris from the rainwater. From the filter, the collected rainwater enters the concrete storage tank through a smoothing inlet (Figure Number RH9530SI). The smoothing inlet prevents the agitation of sediment at the rainwater inlet into the storage tank and it aerates the water to keep it from becoming foul smelling. The stored rainwater is now ready for use. Harvested rainwater is extracted from the cleanest part of the tank, just below the surface of the water using the floating filter (Figure Number RH9532) and pump. The end result is ph-neutral, soft, filtered water which is naturally well suited for irrigation.

In order to size the system properly, it was important for Andrew and Dawson to accurately calculate the surface area of all roof sections where rainwater is to be collected. In this case, the Gerachis' wanted to maximize their rain-water harvesting potential. They decided to capture rainwater from the entire roof area, the front and back porches, and the carport. The total collection area equaled 2,151 square feet.

During the design process it became apparent that the rainwater (Turn to Rainwater... page 62.)

About The Waters Community

The Waters is a neighborhood community nestled in the town of Pike Road, Ala., located just outside of Montgomery. The hundreds of acres include expansive rolling greenways, towering oaks, and over five miles of shoreline wrapping around the 200 acre Lake Cameron. Around the neighborhood you will find everything from manicured parks to mid-block greens. Other amenities abound, such as, a pool and community pavilion, boat-houses, piers, tennis and basketball courts, a local market, dentist office, and a YMCA.

The homes are built with traditional southern architecture and premium green-building materials such as, metal roofs, radiant windows, geothermal heating and cooling units and spray foam insulation. New efficiency methods such as rainwater harvesting are also used to lessen utility bills and limit water runoff. Other construction techniques such as, deep-anchored raised foundations and ample eight foot porches are used throughout the community.

Whether your ideal is found in a grand mansion or a cozy cottage, a classic brownstone or a cozy city-cool loft, you'll discover homes are as detailed as any other historic examples. When a neighborhood is built from traditional models, special things begin to happen.

A sense of community develops and a social network begins. The Waters is a quality of life where people are brought together to form a sense of community for all ages. The rainwater harvesting installation at the Gerachis' home is almost unnoticeable. Only the top of the vortex filter is visible. Andrew Gerachis, assistant director for marketing and sales at The Waters states, “We wanted to leave the vortex filter visible because it makes for a great conversation piece, and that is really what this is about, educating everyone you can on how important it is to re-use what nature provides.”

For more information on rainwater harvesting products, visit www.jrsmith.com.

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Circle 47 on Reader Reply Card



Chicago Faucets & The Buy American Act

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

Circle 48 on Reader Reply Card

Chicago Faucets Expands Electronic Lavatory Faucet Offering

Chicago Faucets most recent efforts to unite reliability and durability with electronic faucet convenience has resulted in the E-Tronic™ 40. The new line features above-deck electronics for easy maintenance, long-term reliability, and offers a choice of a CRP2 battery or AC adaptor. Uncomplicated installation, easy maintenance and reliability, combined with the water conservation and added hygiene offered with hands-free faucets, make the E-Tronic™ 40 an attractive choice for public lavatories.



Circle 45 on Reader Reply Card



A New, Economical Option for Lavatory Installations

The new 420-CP Single Control Lavatory Faucet from Chicago Faucets combines the durability of solid brass body construction with the dependability of a time-tested ceramic mixing valve. Other features include a polished chrome plated finish, metal lever handle, temperature limit stop, volume control and a 1.5 GPM laminar flow outlet. Easy to install and easy to maintain, the ADA compliant Chicago Faucets 420-CP is a great option for any commercial project.

Circle 46 on Reader Reply Card

hi.

The HyTronic™

Say hi to the HyTronic™ - the most reliable electronic faucet you can buy.

The HyTronic from Chicago Faucets has been built and tested with one goal in mind: to be the most reliable electronic faucet on the market. Water tight electronics and vandal resistant features, combined with a long-life lithium battery, ensure reliable performance for years to come. The twin-beam infrared system responds quickly and minimizes false activations. In addition, above deck components and remote diagnostic technology allow for fast, trouble-free installation and easy maintenance.

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Circle 15 on Reader Reply Card

Chicago Faucets

(Continued from page 14.)

in the country. Management understands that they have a distinct advantage of knowing what works, and what doesn't.

Finally, sustainability is a core value. While the green movement is relatively new, Chicago Faucets has been green since their founding. The interchangeability of parts saves resources and caters to present and future needs. The focus on users of products empowers the company by providing ongoing feedback — giving an emotional connection with customers, which translates into loyalty.

Any shifts in the business model or philosophy to combat the economy?

Fitzgerald: Our business model works quite well. Good design, properly integrated into an organization like Chicago Faucets, offers a perspective that looks very deliberately and objectively at that company's prod-

ucts and services. Through a variety of inputs, it ensures that every angle is covered and every possibility considered. Therefore, being continually aware of what we can offer customers allows us to maintain relationships, trust and loyalty. When the economy recovers, it will be those companies that have paid attention to their customers, thought carefully about their offerings and prepared intelligently for a changing future that will succeed.

If anything, we have become more aggressive in new product development and enhancing customer service programs. We believe that our new product advancements and constant improvements in customer support programs will put us in a position for significant growth in the years ahead.

How are you addressing the lead-free topic?

Fitzgerald: As in the case of NSF 61, we have strived to be out in front of our industry. In 2010, new laws regarding lead content in plumbing products that deliver water for

human consumption will take effect in California and Vermont. Once again, Chicago Faucets is leading the way to respond to these new low lead initiatives with ECAST™.

We introduced ECAST in October 2008, a full 14 months prior to the law being enacted. We have continued to expand the products that meet this new standard with a goal of offering the most expansive line of lead-free compliant commercial faucets.

Any new product offerings?

Fitzgerald: Actually, there's quite a bit of new product news from Chicago Faucets. We continue to expand our line of electronic faucets. Our experience with HyTronic™ reinforces our position that the HyTronic line is the most reliable electronic faucet on the market. We have recently expanded this line with the E-Tronic™ 40; a lavatory faucet that we believe can bring our advanced electronic design to a broader range of installations such as gas stations, public restrooms, restaurants and small offices.

We also have introduced a new single handle lavatory faucet — the 420-CP — that we believe also will expand Chicago Faucets quality to a wider range of commercial installations. We've introduced antimicrobial handles that can be used to quickly retrofit existing Chicago Faucets installations; and we've introduced new thermostatic point-of-use mixing valves that are an ideal addition to our electronic faucets or any installation where the control of water temperature is essential or dictated by code. We also have introduced a complete line of new tub and shower mixing valves.

Where are the products manufactured?

Fitzgerald: First of all, it is important to point out that 95% of our products — over 1,700 items — meet the "Buy American Act" requirements. That is an important distinction for many of our customers, especially for government installations, that demand American-made products. We are able to meet this requirement with manufacturing, research and development facilities located in the United States.

We conduct product research, development and testing in Des Plaines, Illinois. Foundry, manufacturing and plating takes place in Milwaukee. We manufacture components and assemblies in Elyria, Ohio. We handle assembly and distribution in Michigan City, Indiana.

Can you talk briefly about R&D and your durability testing of products?

Fitzgerald: We have a product testing lab in our Des Plaines facility that is constantly subjecting new

and existing products to rigorous cycle and durability standards. We truly have a global research and development team for our products — our product engineers from our Des Plaines facility, as well as the parent office in Jona, Switzerland. Our goal is to consistently produce products that exceed all industry cycle and durability standards.

Excellence in sanitary technology. Worldwide. That's the Geberit Group's focus, and that's why Geberit sets trends in sanitary technology. Geberit's activities are based on a global approach — not just a specific region. That thinking is one of the reasons they purchased Chicago Faucets — it fit their strategy. For example, investment in research and development (R&D) was almost \$20 million. R&D of the whole range of products is made centrally by Geberit International AG. As such, Geberit carries out applied research and development in the entire field of sanitary technology, as well as in related areas. Highly qualified engineers and specialists apply their knowledge and experience to fundamental sanitary technology research and the development of new products. Our research activity allows us to continuously introduce new and innovative products to the market, which thereby satisfy the requirements of our customers.

Can you describe your priority ship program?

Fitzgerald: A good example of our continued investment to support to our customers is CFNow! This program assures our customers that orders for some of our most popular products will ship within five days. We have continued to expand the products offered in this program and recently introduced CFNow! Express that provides next-day shipment.

How big of a role does customer service play in the end game for Chicago Faucets?

Fitzgerald: Customer service is the most important role for our company. If you don't listen to your customers, who should you listen to? Many companies practice VOC (Voice of the Customer), but they often only want to hear what they want their customers saying. Listening, really listening, is difficult, because what you hear isn't all good. Chicago Faucets' success stems from taking all that information and translating it into products and service meaningful to our customers. That takes a serious commitment from the top of the corporation downward. It's evident here. Combined with extremely well experienced customer service personnel and sales representatives, our goal is to lead the industry in this area. ■

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Circle 17 on Reader Reply Card



BY DAN HOLOHAN
contributing writer

How to paint an old radiator

The homeowner was frantic in his e-mail to me because he had painted a few of his old radiators over the weekend and as soon as the heat came on they smelled carcinogenic. That's what he said — carcinogenic. "We have a baby!" he wrote. "Can that smell hurt the baby?"

I'd say that's one of those questions that you should never answer by e-mail, or even in person. I played dumb, which is a good thing to be from time to time. It took me years to learn that.

But his question got me thinking about the right and wrong ways to paint old radiators, so I posed the question to the good people who participate on The Wall (our very-active bulletin at HeatingHelp.com). Here's what they had to say about their experiences:

John: When customers ask, I tell them to clean the radiator with trisodium phosphate, and then prime it with an alkyd, oil-based primer, followed by a good latex top coat. Sherman Williams and California are two top brands that I have used with good results. Use a brush and hot dog roller. Select a top coat that's a shade lighter than the color of the wall. Radiators seem to darken after a few heat cycles and then blend with the wall.

Mike: I am a painting contractor and we always use Benjamin Moore Satin Impervo to paint radiators. It is alkyd enamel that sprays well and has a beautiful finish. If we cannot convince the homeowner to remove the radiators so that we can properly paint them in our shop, we are forced to paint the radiators in place. We use either a hot

dog roller or a paint brush designed to paint radiators (it's shaped like a hockey stick and you can find these with a Google search). When painting radiators in place, the oil-based enamel has excellent adhesion to the marginally prepared surfaces. Latex paint is for homeowners.

(So Mike, the professional painter, disagrees with John, the

"I am a painting contractor and we always use Benjamin Moore Satin Impervo to paint radiators. It is alkyd enamel that sprays well and has a beautiful finish."

professional heating contractor on whether the top coat should be latex or oil-based. It sounds like they both get good results, though — D.H.)

Thad: Sandblast and powder coat for a couple hundred bucks per radiator and they'll look brand new. The real trick is to bake them for a bit longer so that any out-gassing from the cast iron occurs before the powder coat dries. This will avoid any surface blemishes. I have had seven, 100-year-old steam radiators done this way and they all came out fantastic. And a little bonus is that the finish is so smooth that dust and cat hair don't get stuck in between the sections. It just comes out with a whiskbroom, which I use once a month.

Phil: I sandblasted one myself last fall and painted it with Rustoleum (their bronze metallic finish). The paint went on easily, dried quickly and the radiator looked terrific after painting. It did take a couple of days to finish out-gassing once the heat came on, though, so some people will have a problem with that. The paint is somewhat soft, and will get tacky when it is hot (the kids hats and gloves tend to stick when left to dry) and it seems to collect dust and hair. I may try the powder coating method next time, and compare the costs (the do-it-myself solution cost less than \$20)

(You get what you pay for. — D.H.)

Mike T.: I have only painted a few steam radiators, and for most (Turn to Old Radiator page 22.)

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Circle 18 on Reader Reply Card

Old Radiator

(Continued from page 20.)

of them, I used plain latex wall paint over an already-sound, painted surface. I saw one batch a few years later, and they were okay, but not great, with a few small areas of rust coming through. I did a couple with traditional, oil-based

silver "radiator" paint. The condition of the existing paint (silver) was not too good, but the customer didn't want to go the expense of stripping the old paint. I haven't seen it, but the customer never complained. I haven't yet found anyone willing to pay what I consider a very reasonable fee for one of my custom bronzing jobs.

Tim: I sandblast them and then

use an automotive spray gun for the paint. I did use Rustoleum on my first three last year. I had to thin it by half for it to work with the spray gun. I finally bought a compressor to handle the air requirements for the sandblasting before the painting. What a difference!

Kevin: I painted two radiators three years ago with Rustoleum high-heat paint in a spray can.

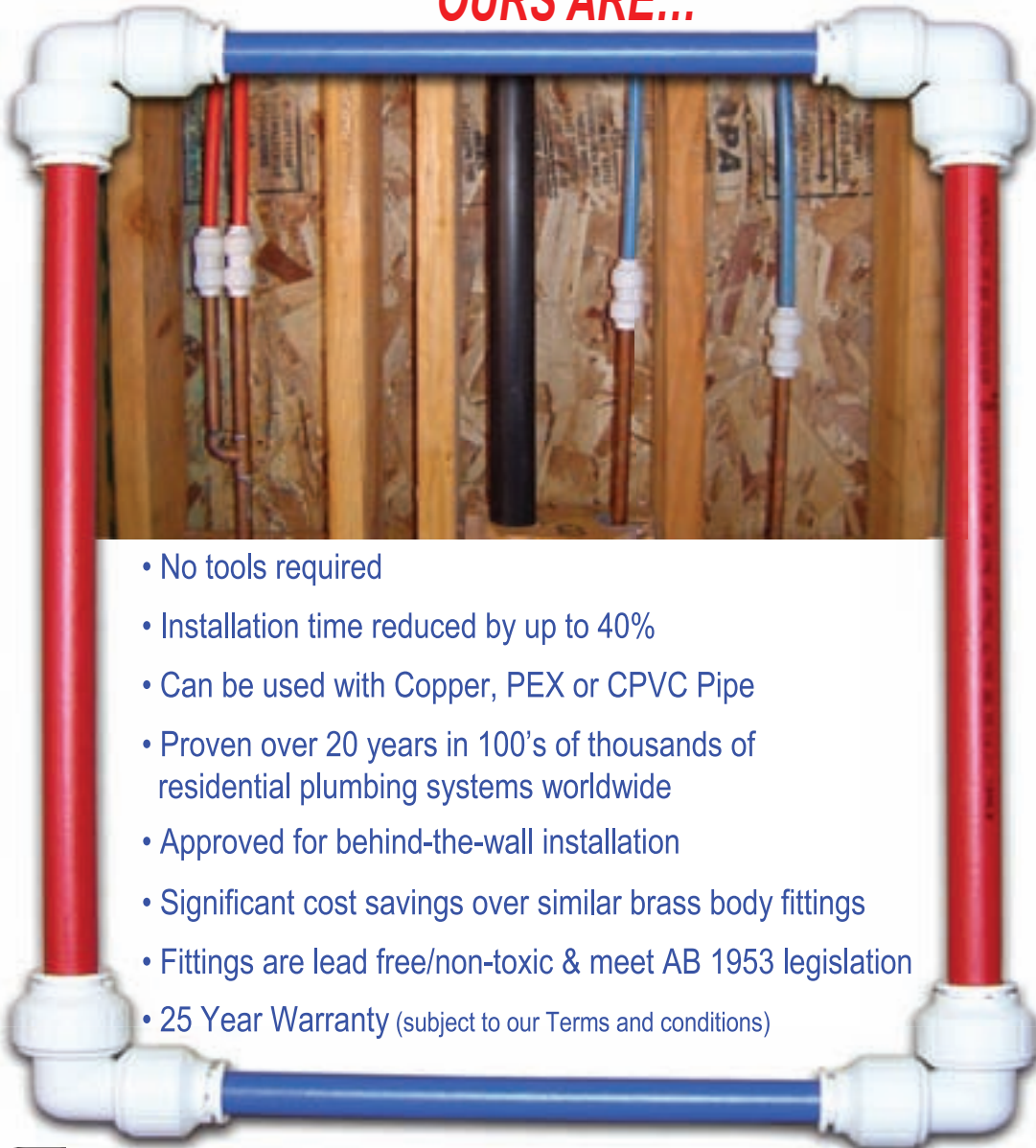
They're still perfect. The can says the paint can handle up to 1,200 degrees, but there are not a lot of choices when it comes to colors.

Dave: I have radiators sandblasted and powder-coated all the time. They look stunning when they are done. I use a commercial painting company that handles both the blasting and the coating. They have many colors from which to choose. The radiators are cooked at 400-degrees Fahrenheit. It's important not to get them any hotter than that because the paper gaskets between

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Circle 19 on Reader Reply Card

"I have radiators sandblasted and powder-coated all the time. They look stunning when they are done. It's important not to get them any hotter than 400° because the paper gaskets between the radiator sections can be damaged, causing the radiator to leak. Ask me how I know."

the radiator sections can be damaged, causing the radiator to leak. Ask me how I know. A large radiator can easily cost as much as \$400 for the whole process, plus the time it takes to disconnect, transport to and from the paint shop, and reinstall afterwards. The finish is quite durable, though, and it looks like porcelain.

Patrick: Ditto to everything that's been said about powder-coating. I hate the thought of paying someone else to do what I can do myself with a little sweat and elbow grease, but powder coating is so superior compared to the results I can achieve with even a professional spray setup that I find it's really worth the cost. I've had zero off-gassing issues; the finish is perfect (no drips, drabs, or missed spots), and let's face it – doing a good job of cleaning and painting a radiator of any size is one of the more onerous tasks imaginable. Refinishing radiators seems to me to be a textbook-perfect example of when powder coating makes sense.

Sure sounds to me like power coating wins. Check with a local auto-body shop. They'll often do this sort of work for you. And I've had pros tell me that they've taken radiators to monument makers at local cemeteries for sandblasting.

And unless you're an M.D., pass on the medical questions. ■

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GRUNDFOS 

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BY PAUL ROHRS
contributing writer

An American hydronic tale

It's "heating season" and the phone rings, again; it looks like it is going to be another late night in the life of this heating contractor. A system has a small glitch that needs hands-on attention. I start lacing up my boots because that's what heating contractors do, all the while thinking that future equipment should have remote diagnostics that contact me in the event of a no-heat call. Better yet, at my command the system will give up its dirty little secret of why it chose not to heat that day.

That got me to thinking outside the box a bit and wondered what it would be like if a heating system could talk?

What if the whole system and its components had distinct personalities and you were privy to their conversations?

Our modern heating systems often feature outdoor reset that can be coupled with constant flow. Outdoor reset continually monitors the outside ambient air temperature, converts it into an electric signal via a sensor, then feeds this signal to a control or boiler which then automatically alters the water temperature to provide a more accurate match to the heat load.

Putting these concepts together, here is what I think a conversation between heating components and attributes of heating systems would sound like:

Scene: Early evening, Mr. OD Reset is coming from a long day's work to be greeted by his wife Constance Flow.

OD Reset: Hi honey, I'm home!

Constance Flow: Hi sweetie, how was your day?

OD Reset: What a day, there was a huge tie-up at the monoflo tee's out on the North Face where all that glass is. But, work is work.

Constance Flow: That's too bad honey. Can I get you something to drink?

OD Reset: Sure babe, how about a Rhomar 922, and forget the glass, just pour it right in. Frustrating day today, doggone mod/cons at work! They think they own the place. I'm getting tired of hearing about them day in and day out. They brag about "ramping up and down all day." "Did you see me going to high-fire?" I heard them say. We never boasted like that when we were young!

Constance Flow: Its okay, darling, we all went through our growing pains at one time or another. (As she sips from her cup of Delta T)

OD Reset: Enough about my day, what where you and the kids up to today?

Constance Flow: Well, Gas and Electric have been spinning pretty fast around here, but Circ seems like he's got a fever, I think he's been running hot all day.

OD Reset: Well it might be time to get that "Differential Pressurectomy." It really worked wonders for you didn't it? That should make him right as rain and will probably help Gas and Electric with their issues, too.

Constance Flow: I know it will be a little expensive, but Dr. Diffy P. Bypass is almost out of work; let's just use him for this one last job.

OD Reset: Okay Hon, get it scheduled. How's your sister Laminar doing?

Constance Flow: That tart! She's just started dating this guy from Ohio. You should hear him Moen.

OD Reset: I'm beat, darling, will

you take care of setback tonight?

Constance Flow: I always do sweetie, I always do, and you get some sleep. Remember, Crazy Uncle

"Doggone mod/cons brag about 'ramping up and down all day.' 'Did you see me going to high-fire?' I heard them say. We never boasted like that when we were young!"

Boost will be here bright and early like always. Hard to keep him in the attic during the day, you know.

OD Reset: That guy never takes a break. But it's good that he's still working and helping out around here. I know it seems like we are just going around in circles, but I know better days are ahead. I've got to clock in early at the injection station, I'm going to bed. Good night, honey.

Constance Flow: Good night.

The End.

The potential is there to have a healthy mix of 20th century components working right along side of 21st century technology and we need to be prepared to pick up on clues from both eras. As heating contractors, we learn that not everything that goes wrong gives us an error code. Sometimes, just listening to a system and the sounds it makes goes further than hooking up a diagnostic tool.

A customer held the phone up the other day and I could tell that the pump was spinning but had no fluid in it. This particular system did not have an automatic fill on it. It is a basic sound that when you hear it, you know what the offending component is. Use all of the fault codes you can when diagnosing temperamental or problem systems, but don't forget your basic sense of hearing when the sound is trying to tell you what the problem is.

If it looks like a duck and walks like a duck, it's probably a duck. Then again, that awful sound coming from the duck might mean it has eaten too much corn and can only be one thing — a duck that needs a plumber. ■

As heating contractors, we learn that not everything that goes wrong gives us an error code. Sometimes, just listening to a system and the sounds it makes goes further than hooking up a diagnostic tool.



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Symptoms

1. Call for DHW results in Boiler #1 Temp Overshoot.
2. Boiler #2 not responding to space heating call.
3. Large temperature fluctuation in target temp for space heating.

HINT: Boiler, IFC pumps, and piping are all sized correctly.

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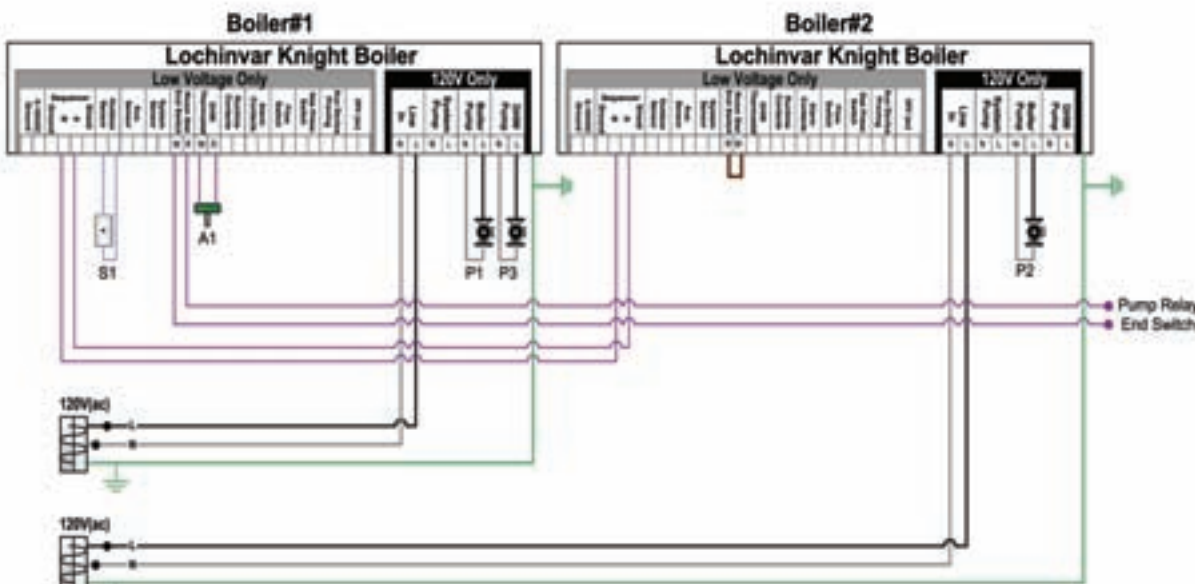
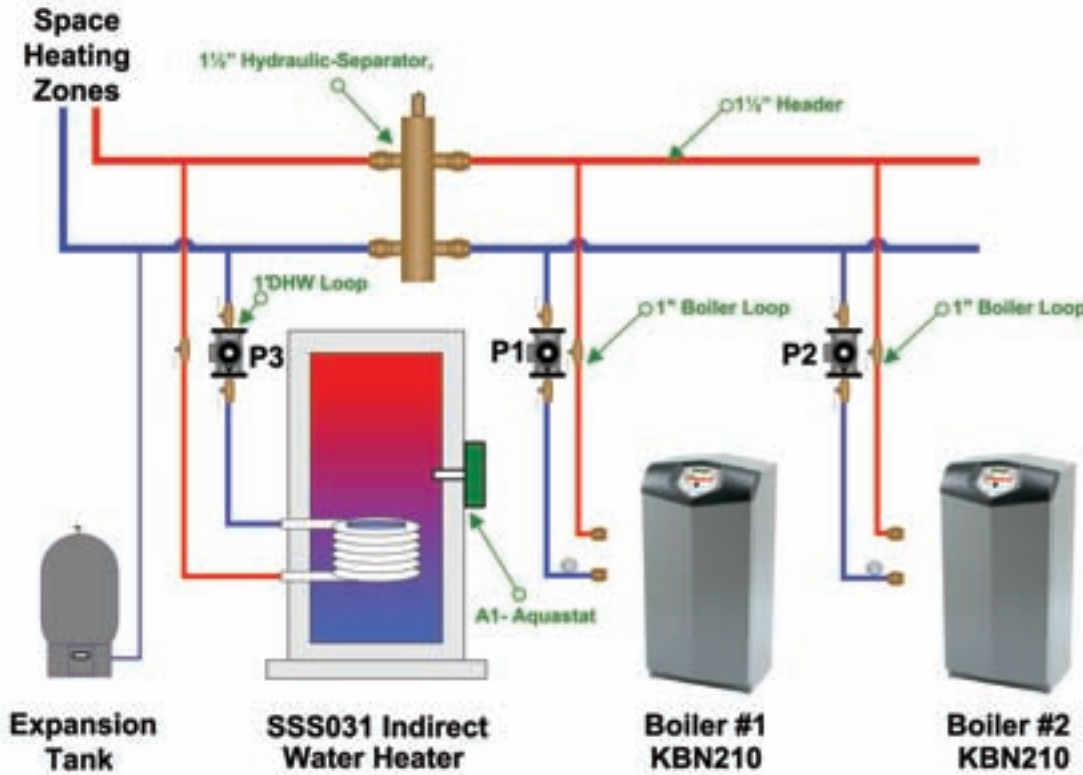
This Hydronic Heating Sleuth's Challenge will be featured monthly in PHC News and represents real life scenarios that we see in the field and hear about from our installing contractors.

We encourage you to test your hydronic heating sleuthing skills and solve the mystery each month and then check your answers against what was actually found in the field by visiting www.Lochinvar.com.

If you would like to contribute a story to us to be considered for inclusion in this feature, please e-mail your information including photos, drawings or electrical schematics plus a description to:

Paul Rohrs - Contributing Writer
paulrohrs@neb.rr.com

ANSWER:
www.Lochinvar.com



Legend

- | | | |
|---------------------|---------------------|----------------------------------|
| S1 = Outdoor Sensor | P1 = Boiler #1 Pump | — = 120 V (AC) |
| S2 = System Sensor | P2 = Boiler #2 Pump | — = Neutral |
| A1 = DHW Aquastat | P3 = DHW Pump | — = Ground |
| B1 = Boiler #1 | | — = Sensor Wire |
| B2 = Boiler #2 | | — = Shielded Communication Cable |
| | | — = 24 V (AC) |

Venting and Gas piping not illustrated for this example and can be excluded as causes for the symptoms listed above.





BY BRISTOL STICKNEY
contributing writer

Any glycol that remains in a solar collector for more than about half an hour without normal coolant pump operation may begin to cook....The glycol can be kept at a safe temperature without affecting human comfort in the house. If the solar heating system is designed and controlled properly there will be no problem.

Bristol's six principles of good solar hydronic design The need for solar heat dumping

In small solar water heaters, using only one or two collectors, overheating may occur rarely or never at all. But, in larger solar heating combi-systems overheating can be an annual event, occurring intermittently for weeks at a time, typically in the Fall just before the heating season begins. This is because, in the Fall, the sun angle is low enough in the sky to provide ample solar heat to the collectors even though this heat may not be needed in the house on a warm autumn day.

In a combi-system, it is possible to use this solar heat to provide domestic hot water (DHW). But there may be times when there is too much heat to be stored in the DHW tank alone. Some combi-systems may incorporate a pool or spa, or use an extra large water storage system or some other heating job to absorb this extra "free" heat, and this is preferable to dumping it. But, in the simplest solar home heating systems (I call these Combi 101 systems) the most practical solution is often to store as much solar heat as possible in the thermal mass and water tank, and then shed the extra heat in a controlled way during the "swing seasons."

Let's take a look at the details involved in dissipating heat from a Combi 101 solar hydronic system using closed loop glycol and flat plate solar collectors. Please look online to review previous episodes of this column in the *Plumbing Engineer* and *Phc News* archives for more details regarding Combi 101 piping, wiring and other factors that make up a complete solar hydronic heating design.

The rules for heat dissipation control

The main reason for solar heat dissipation is to maintain a safe high-limit temperature during normal operation of the solar heat collectors. For lower-temperature propylene glycol mixtures this is around 225 F, and for PG mixtures formulated for higher temperatures the high limit is around 325 F. The high limit can be found in the manufacturer's specifications or user's manuals. Be sure you know what kind of glycol you have because the specifications change from one type to another.

Normal glycol mixtures are virtually transparent with a pH slightly higher than distilled water (slightly alkaline). When glycol gets too hot, it can "cook," which changes it chemically. Low-temperature glycol will begin to turn brown and will become a thick brown "goo" when cooked for a long time in a solar collector. High-temperature PG holds up much better, but cooking lowers the pH of any glycol, which becomes more acidic — and that can't be good for your plumbing and other metal components. Any glycol that remains in a solar collector for more than about half an hour without normal coolant pump opera-

tion may begin to cook. This includes left-over glycol residue inside of collectors that have been drained.

Using the Combi 101 solar heating control system as an example, a large bank of solar heat panels is used to heat a single DHW tank and a number of warm mass floors. The sample controls for this system (as seen in an earlier column) consist of a differential thermostat to heat the DHW tank, and some set point thermostats to control the solar heat. Two stage room thermostats allow controlled solar heat banking in the mass floors in each room. The objective for this control system is to make the best use of the solar heat from day to day without exceeding human comfort conditions inside the house, while maintaining safe high-limit temperatures throughout the day.

The Combi 101 control system is designed to dissipate extra heat into a mass floor zone as a last resort to keep the solar collectors from exceeding the normal operational high-limit temperature. The following rules are implemented before solar heat dumping is allowed by this control system:

1. If the solar heat is hotter than the DHW tank, put heat into the tank. (A tempering valve is provided to allow this without danger of scalding at the faucets.)
2. If the DHW tank has reached a safe high limit (e.g. 165-180 F), stop delivering solar heat to the tank.
3. If there is a "stage 1" call for heat from any room (call for solar heat banking) and collectors are hot (e.g. 120-130 F), put solar heat into that mass floor.
4. If "stage 1" high-limit comfort temperature has been reached in the room, stop sending solar heat to that floor (e.g. 72-76 F).
5. If all four of the conditions above have been met and the collectors are still hot, continue pumping coolant around the solar collector loop until the glycol reaches its safe high-limit temperature (e.g. 180-200 F).
6. Turn on one or more mass floor zones to dissipate heat from the glycol until its temperature drops about 10-15 degrees below the safe high-limit temperature.
7. Repeat steps 5-7 until sunset.

If there is any plastic tubing near the solar hot pipes, you may choose to set the safe limit closer to 180° F to provide extra protection for the plastic. (Plastic pipe should never be used directly in the solar collector glycol loop.) All the temperature ranges shown above provide a reasonable starting point, but may need to be adjusted once the response of the house and its occupants have been taken into account.

A recent solar-combi example installation

The photo in Figure 16-1 shows the roof top collectors of a combi-system recently completed by Cedar Mountain Solar, and instrumented with the Beta version of the SLIC control system from SolarLogic (Solar Logic Integrated Control). The SLIC controller allows us to securely monitor this installation in real time from any computer on the internet, capture data from over 200 points in the heating system and change the settings (and the software) remotely if needed.

This installation is a solar heating retrofit to an existing home in Placitas, N.M. (near Albuquerque) with an existing hydronic boiler heating system and all radiant heated rooms using warm mass floors. The house is in a cold winter climate in the mountain foothills at 6000 feet elevation and 36 degrees north latitude. The solar heating system



Figure 16-1. Rooftop collectors of a combi-system.

(Turn to *Too much heat?*, page 30.)

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Too much heat?

(Continued from page 28.)

is installed with a flow center just like a Combi 101, but because of the size of the house, this system now resembles a Combi 101 on steroids.

Instead of a single bank of collectors it has two banks of six panels, each with its own PV (photovoltaic) solar glycol pump, for a total of 12 collectors (4X10 size). You can see the two PV panels in the photo, one for each glycol pump and the collectors mounted the “low way” (landscape orientation) so they can be hidden behind the parapet walls on the roof. There are nine radiant floor heating zones and an 80-gallon solar DHW storage tank. The collectors are mounted at 75 degrees to provide maximum heat in winter with ample solar DHW heat all year round.

Sample temperature data

Figure 16-2 shows a SLIC Data Graph of what happens at this house

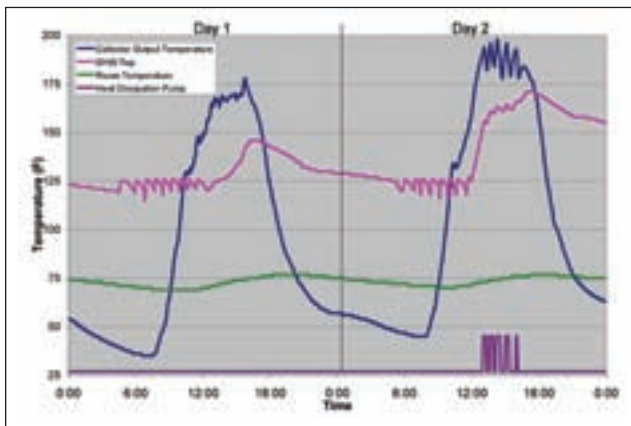


Figure 16-2

over a two-day period this Fall (Oct. 11-12, 2009) when heat is needed on Day 1 but not needed on Day 2 because of fluctuating outdoor air temperatures. Outdoor temperatures are shown on Figure 16-3 for reference, and solar data (not included here) proves that both days were equally clear and sunny. During this entire time the house was in “solar only mode” which prevents the boiler from firing when ever the solar heat supply pipe is hot.

Dew point temperature is included to remind us how much cooling is available from these collectors at night if needed. In my experience, cooling can be achieved at night at a temperature about half way between the air temperature and the dew point.

Figure 16-2 shows that on Day 1, the night temperatures were cold enough to allow heat banking in the mass floors as soon as the sun came up. Heat banking continued until around 5 p.m. at which time the collector

output temperature spiked as the heating load was turned off. The spike was not big enough to activate the heat dissipation control at the end of Day 1. Because of the “thermal fly-wheel effect” of the solar heated mass floors, the

room continued to warm up and stay warm throughout the night.

On Day 2, the water tank absorbed as much heat as it could, but there was no call for heat banking because the house was a few degrees warmer than the previous morning. Just after high noon, the heat dissipation control took over and cycled on and off every 20 minutes or so to prevent the glycol temperature from reaching 200°F. The DHW tank appeared to reach its operating high limit near 170°F just before sunset.

Safety and comfort

During the sunny part of the day, the solar DHW tank absorbs heat, simultaneously as the floors are warmed by heat banking on Day 1 and also on Day 2 while heat dissipation is going on. The result can be scalding heat storage temperatures in the DHW tank. There is a thermal mixing valve on the outlet of the DHW tank to prevent scalding in the house.

The occupants of this house have an instant hot water circulator pump that is timer controlled and cycles every 15 minutes to provide the comfort and convenience of instant hot water at all the faucets in the house. Much of the continuous heat loss from the water tank and the temperature cycling in the early morning are largely due to this circulator constantly removing tempered hot water from the DHW tank.

Whenever I introduce the idea of heat dissipation to the mass floors, the question always comes up; “Won’t this overheat the rooms inside the house”? The data in Figure 16-2 proves that the answer is “No.” The glycol can be kept at a safe temperature without affecting human comfort in the house.

If the solar heating system is designed and controlled properly there will be no problem. The data shows that the maximum room temperature remains the same during heat banking on Day 1 as it does on Day 2 during heat dissipation. The reason is partly because we are following the seven rules listed to control overheating, but also because of the nature of solar collector thermal efficiency.

A hot collector is less efficient, and loses a lot more heat to its surroundings than a cool collector. So when we let it heat up, it naturally

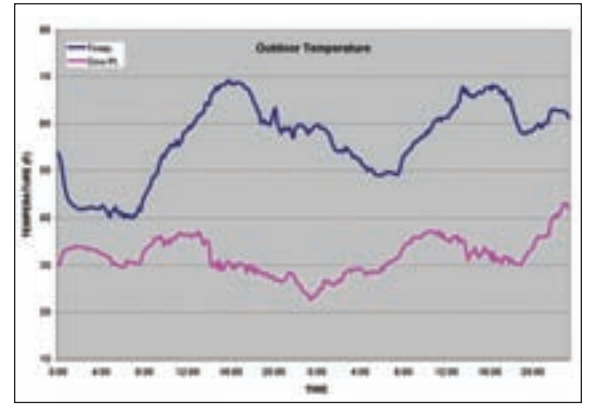


Figure 16-3

tends to cool itself thanks to the laws of physics.

Final notes

This example is intended only to illustrate the concepts involved in solar heat and thermal mass when combined for solar space heating and DHW. Results will vary depending on regional and local conditions as well as control settings. Brand names and manufacturers are mentioned only to provide examples for illustration and do not constitute any recommendation or endorsement. Some data values have been rounded off to simplify the presentation. Special thanks to Fred Milder at SolarLogic for sharing this data with us and to the homeowner in Placitas, Ken Dehoff, for agreeing to be a Beta Test Site for the SLIC. ■

Bristol Stickney, partner and technical director at Cedar Mountain Solar Systems in Santa Fe, N.M., has been designing, manufacturing, engineering, repairing and installing solar hydronic heating systems for more than 30 years. He holds a Bachelor of Science in Mechanical Engineering and is a licensed Mechanical Contractor in New Mexico. He is the chief technical officer for SolarLogic LLC and is involved in training programs for solar heating professionals (visit www.cedarmountainsolar.com for more training information.)

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

1. RELIABILITY
2. EFFECTIVENESS
3. COMPATIBILITY
4. ELEGANCE
5. SERVICEABILITY
6. EFFICIENCY

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

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

Control truck inventory

As a PHC service contractor, you utilize one or more service vehicles, which you probably stock with common everyday inventory items needed to perform service tasks efficiently. But efficiency is often decreased when the parts and/or tools you thought were on the truck aren't there when you need them.

When you have employees to whom you entrust the vehicle and inventory, and those inventory items are not there, you may wonder if those items just sprouted legs and walked off the truck. Whether the material and/or tools were used on a previous job or were pilfered by someone, the tech still doesn't have it when he/she needs it.

This will cause increased cost to you for the job the tech is doing at the time it is realized that some tools or material are missing. Extra fuel cost, extra labor cost, and lost time that could have been used to do another job — which would bring in more revenue to your business — are some of the additional expenses that you will incur with an improperly stocked service vehicle. The cause of the problem is simple. It's poor inventory control. The solution to the problem will create a bit more administrative work, but is also simple.

Make a truck inventory list

Make a truck inventory list of the material and tools you use most often. Stocking items on the truck that just sit there in case you might need them, but seldom do, has an unnecessary cost to you. The weight alone causes you to use more fuel to drive the truck. Additionally, material can become truck-worn. In that instance, you would have paid for the material and not received a benefit for the cost to you for that material because it is not marketable.

As a PHC contractor, you would want to stock items on the truck such as traps, tailpieces, slip nuts, washers, supply tubes, compression nuts and rings, wax seals, water closet bolts, valves, thermocouples, zone valves, circulators, diaphragm tanks, water pressure regulators, air vents, refrigerant, fittings, tubing, pipe, acetylene, solder, flux, pipe sealant, and the tools to perform everyday tasks, etc.

To determine which items to stock, ask yourself if any item you are considering to stock on the truck will be used in a year. If the answer is no or probably not, that item doesn't belong on your truck inventory list. Those items that are not on the list can be picked up at your local supplier or your shop when needed. If you are in a rural area where suppliers are few and far between, you might expand the list to items you could possibly need to take the scarcity of suppliers and distance to your shop into consideration. But to be certain you're not wasting money, make sure you use common sense.

You also must choose the quantity of each item you want to stock on your service vehicles. For instance, I would suggest for common replacement items such as tubular P-traps that a minimum truck quantity would be three. After all, a one-family home with 1½ to 2 baths could use all three P-traps at one service call, one for the kitchen sink and one for each lavatory. You might well consider six.

Some items are seasonal. An item such as a circulator for a hot water heating system certainly does not require six, especially in the summer. Two or three would probably do during the heating season. If you find that you need more than the quantity you have chosen for any item, just increase the quantity of that item on your list. Simi-

larly, if you find that you don't use as many of an item for which your list calls, decrease the quantity on the list.

Use the list to control inventory movement

Making a list and not using it correctly will not only waste your money, it will waste your time and it controls nothing. Correct implementation of the inventory list requires the following steps:

1: Once your list is made, you, or your supervisor, should meet with the technician assigned to each truck and check that the list and the inventory on the truck match. Once the supervisor and technician agree that all the material on the list (and only the material on the list) is on the truck, the technician should sign the supervisor's copy of the list to indicate that the tech has received the inventory. That puts the burden on the technician to prove why any material may be missing.

2: The technician, including yourself if you are one of your technicians, should list every item he/she uses on each job. You should have the tech do it on a form that shows the job name, invoice # and date for which the items were used. This will allow the technician to prove why any items are not on the truck at all times.

3: The technician will turn in the form each day to the supervisor to have his/her truck inventory replenished so that the vehicle can be properly stocked for the next day.

4: You or your supervisor can then give the tech replacement material for that which was used that day so the truck will be ready for the next day. For the company records, you would then take the form and have the tech sign it to prove the tech had received all the material requested. If any item is not replenished at that time, the supervisor should issue a form to the tech indicating that the item has been back ordered. This will allow the tech to prove why the material is not on his/her vehicle. Once the back ordered material is given to the tech, the tech signs the back order form indicating the fact that he/she received the back ordered material and gives the form to the supervisor.

5: Conduct surprise inventory checks. Your staff will be cognizant that you are on top of things. This, in turn, will give them reason to be the best they can be regarding truck inventory. And you will be able to maintain properly stocked service vehicles.

6: In the instance of damaged material or tools, the tech must return the damaged material and/or tools at the time he/she is requesting replacements of same.

7: The supervisor in charge of inventory should keep all records of inventory so that he/she can be certain that in house and truck inventory coincides.

8 (optional): Some PHC shops may require technicians to supply their own hand tools. The theory is that techs will take care of that for which they must pay better than that for which the business must pay. It would be wise to allow an annual dollar amount to be given to the tech for hand tool use. The amount would be determined by the size of the hand tool inventory required by the administrators of the business. This will give the tech the financial ability to keep his/her hand tools in good condition so that he/she can perform their assigned tasks efficiently. Your supervisor should check all hand tools for condition at the time of any surprise check. At the end of a fiscal year the tech will receive the hand tool compensation dollar amount. A tech who keeps his/her tools in pristine condition is then rewarded for his/her efforts. They can keep

(Turn to Truck inventory, page 42.)

The cause of the problem is simple. It's poor inventory control. The solution to the problem will create a bit more administrative work, but is also simple.

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Circle 26 on Reader Reply Card



BY ELLEN ROHR
contributing writer

Offense and defense

In the game of business, making sales is playing offense. If you play offense well enough, you can make a few mistakes on defense and still win the game. If your sales are down, playing defense becomes more important. In business, defense is controlling costs.

The business owners I know who make money every month are willing to play defense.

There is no substitute for sales. You need a minimum to cover essential expenses. What is that minimum? That's what budgeting is for — so dust yours off. What will you need between now and the end of the year to be profitable? What do you need every month? Set goals for next year, too. For sales and expenses. And take a look at your defense.

The ball and chain

When times are tough, business owners without debt are breathing easier. A heavy debt load and interest can age you. What can you do to pay down debt? How about refinancing? Yes, the paperwork can be burdensome and time consuming. Still, dig into it. Get clear on what your debt situation really is. Comb through the balance sheet and make sure it is current and accurate. Now is the perfect time to nail down your balance sheet balances and get ready for year end. Before the year ends, you have a chance to change the situation. If this paragraph is making your stomach hurt, relax and take a breath. There is always something you can do to change the situation for the better. Think about what you want. Consider different approaches. Keeping score — up to date, accurate financial reporting — shows you what's working and what needs to be changed. Confronting your debt is the first step in managing it.

An ARC loan may be just right for you. And there are other SBA loans available. Learn more at <http://www.smallbusinesssource.net>. These loans are new, and your banker may not know how to pull one together. Be like a bee in his or her shirt and move the application through the process. This is a good time to reduce and restructure debt. Have you read *The Richest Man in Babylon* by George Clason? It was written during the depression (the other one) and it offers timeless advice for digging out of debt and expanding wealth, no matter what your current situation is.

Defense is controlling costs

Next, drill down on your expenses. Where can you lean down? There is a financial term: zero-based budgeting. It means that when you budget, you don't base your projections on past expenses. It means you go through every expense line and ask, "What do I want and need to spend on this?" regardless of what you have done in the past.

There is a joy in paring back. Move towards simplicity. We acquire so much crap. What do you really need and want? Personally, for your business, trim down without making it a sacrifice. Be Zen-like about it. See if you can find and enjoy the space as you empty the room.

You may find some pennies to save. If you are looking to save dollars, you'll have to address your biggest expense.

The #1 expense

Look over your income statement. People are the big expense. As it should be! The idea in business is to make money — for yourself, your family and the wonderful peo-

ple who work with you. People help you make money! You couldn't be in business, be of service, without them.

Keeping score allows you to see the effect of your efforts. Sell stuff for more than it costs and you make a profit. Collect the money now and you keep the cash flowing. No big mysteries here; business is easy. By paying attention to the financials, you can make better decisions about managing your labor expenses. If sales are down, and you continue to pay the same team as when sales are up, your total gross wages as a percentage of sales will spike. It's your key defensive statistic. Watch this percentage and manage it if you want to make money every month.

Track these numbers weekly...and by the end of the month, eyeball them daily.

- Total gross wages as a % of sales
- Field gross wages as a % of sales

Consider these goals:

- Total gross wages for *all* team members at 30-33% of sales.
- Total field gross wages in the range of 18-20%.

Gross wages don't include payroll taxes in these numbers.

NOTE! Your budget numbers are senior to my suggestions or any kind of industry average (our industry averages aren't so hot.) Crunch the numbers, dollars and percentages on paper and Excel first. Pull your target goals from there.

If field gross wages are in line with your goal, and total gross wages are too high, the problem may be too many people on the inside. Note that your salary is included,

Account	Category	Description		% of Sales
Sales				
4100	Sales	Service	\$1,000,000	100.00%
		Total Budgeted Net Sales	\$1,000,000	100.00%
Direct Costs (COGS)				
\$110	Direct Costs	Service Labor	\$200,000	20.00%
\$115	Direct Costs	Service Materials	\$180,000	18.00%
\$145	Direct Costs	Other Direct Costs	\$20,000	2.00%
		Total Direct Costs (COGS)	\$380,000	38.00%
		Gross Profit/Margin	\$620,000	62.00%
Operating Expenses				
\$150	Expenses	Administrative Staff (Owner & Office Personnel)	\$110,000	11.00%
\$200 thru \$999	Expenses	Other Operating Expenses/Overhead	\$300,000	30.00%
		Total Operating expenses	\$410,000	41.00%
		Budgeted Operating Profit / Margin	\$210,000	21.00%

too. There are no judgements here — just pay attention. You can make the percentages come back into line by playing offense: Better sales, raising your prices, improved marketing and sales techniques. Or consider: do you need to play defense?

It's fourth and two and the other team has the ball

When you are losing money, you may have to make some tough calls, like sending someone home. Send people home when the sales don't support the labor. You could ask someone to stay close to the phone and jump back in if a call comes in. The point is: manage your labor expenses.

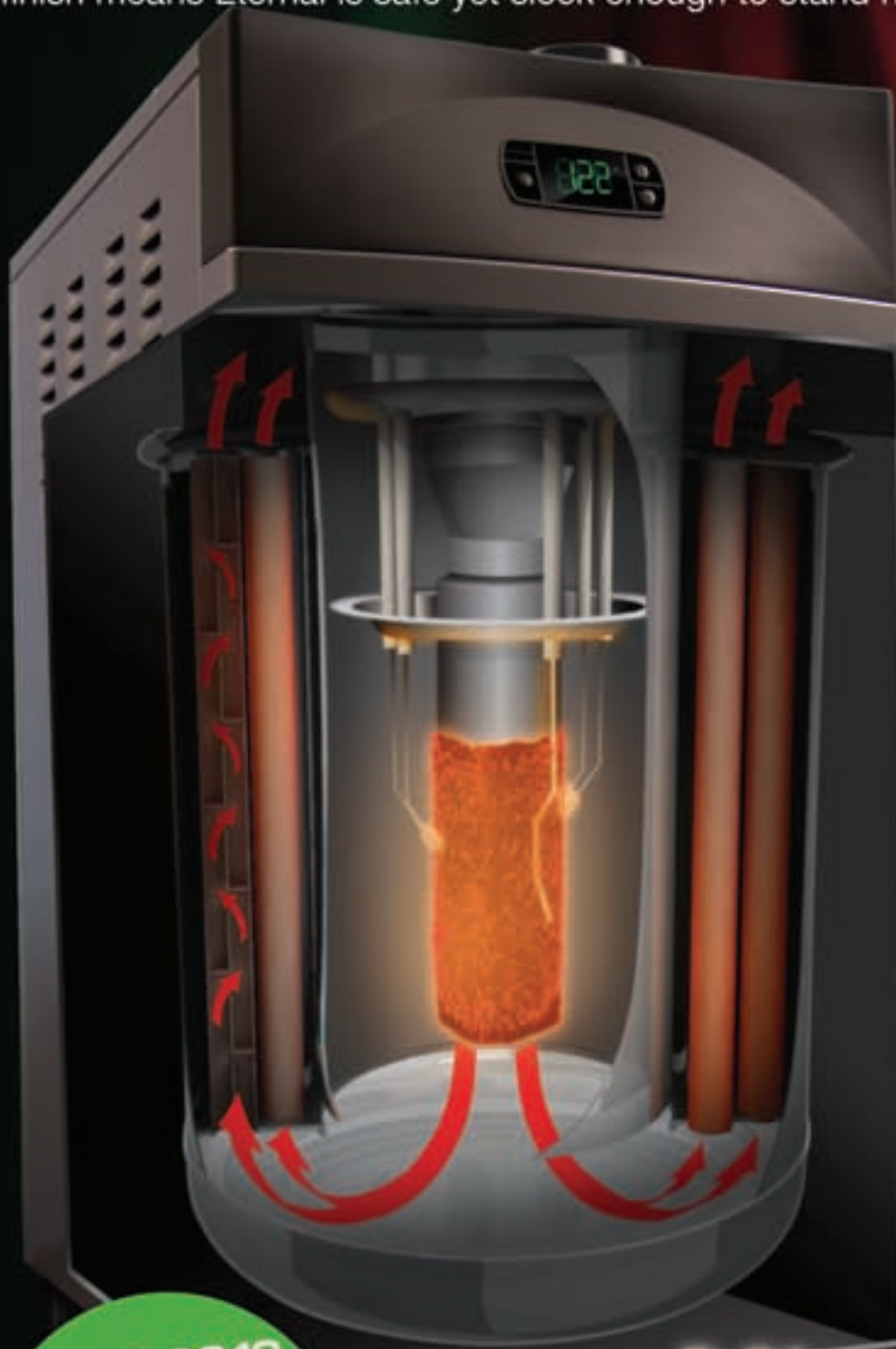
Playing defense also involves taking the blinders off. Who, on your team, is not contributing enough? Who needs to go — for good? If you really wanted to keep a job, would you do it to the best of your ability? Would you blow off the simple tasks? Would you leave work undone? Would you whine and complain about the other guys? Or would you dig in and make a difference? I hope you never get to the point where you love firing someone. But consider your responsibility to team members who are mak-

(Turn to *Offense*, page 42.)

There is always something you can do to change the situation for the better. Think about what you want. Consider different approaches.

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ITT

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Conversation with a plumbing industry leader in macerating systems

Phc News conducts an exclusive interview with Régis Saragosti, CEO of Saniflo, the inventor and leading manufacturer of macerating plumbing systems that allow installation of toilets, tubs, lavatories, washing machines, etc. anywhere without extensive renovation or breaking up of floors, even below the level of the street sewer.

Please provide a brief history of Saniflo.

Saragosti: Saniflo is a French company, SFA Group, established in 1958. We are the inventor and the



Régis Saragosti, CEO of Saniflo.

worldwide leader of the macerating units. We have two factories in France and more than 20 subsidiaries worldwide. Our products are sold and installed in more than 100 countries.

The story starts in 1958 in Paris. At this time, toilets and bathrooms were located in the corridor. Our



The SANICOMPACT macerating toilet is a self-contained unit that installs easily without the need for breaking the floor for a sewer line.

president thought of a solution to bring the toilet directly into the apartment. This is how this company started 52 years ago. From one idea, to six million units sold and 20 subsidiaries, our wish to provide the market with high quality and innovative products has never stopped.

How did you get started in the industry?

Saragosti: My start in the industry was a pure accident! After graduating from an elite business school in Paris, I worked for a company selling electronic locks for hotels. Then I was hired by Saniflo in Paris as an export manager. I sold macerators in more than 35 countries. Our operation in the United States required someone from our head office. I accepted this challenge, and today with one of the most professional teams in the business, the best products, and a huge potential, I'm happy to be part of our success in the United States. This is just the beginning.

Please describe your job description and your initiatives for the company.

Saragosti: As the CEO of the company, you can imagine that I'm working on everything. After improving our marketing dramatically this last two years, introducing new products, and looking for new opportunities for our products, I like to be on the field. I like to understand our customers' needs and very often, people refer to me as "the guy with the weird accent."

My experiences with more than 35 countries help me to adapt our strategy everyday.

As I said very often, if I was able to sell these products in Romania, Russia, Poland, or India, I see no reason to not succeed in the United States. Most important for me is to work hard and get the success that Saniflo deserves in United States. I'm also the link between the market here, and our factory in Paris. This helps our development a lot. Because I live here and understand the market, I can explain our needs in terms of products, advertising, etc. much better to our corporate office.

How has the economy affected business?

Saragosti: Some people might be jealous. Since the beginning of our subsidiary in the United States, Saniflo

has enjoyed a double digit increase in sales every year. 2008 and 2009 are our best year to date. There are several reasons to that. As we continue to grow we can attribute our success to many things. Not the least of which is hard work. We are working very hard to maximize our success in the field.

I think you will recognize our efforts with marketing, advertising, quality of products and the ease of doing business with Saniflo. All this combined with first-class representation in the field add up to a winning combination. I would like to thank our national sales manager, Bob Lechner, and all our reps who are working hard every single day to ensure the success of Saniflo in the United States.

Also, during this difficult time, people can't move or sell their homes. But they can improve their home by adding an additional bathroom. So don't move, improve. Saniflo is the best and cost effective solution to install a complete bathroom anywhere.

What is a macerating toilet?

Saragosti: To "macerate" is to soften, to break in pieces. Our macerating systems use a rotating cutting blade to liquefy human waste and toilet paper, that when mixed with flushing water is pumped into a sanitary sewer as fine slurry. Our macerating units give the possibility to install a complete bathroom or half bathroom anywhere you want without any major destruction.

The above-the-floor installation and pre-assembled unit make it so easy to install, that a plumber won't use another product after installing a Saniflo macerating unit.

When you think that it's impossible or when you think that you can't do it, check Saniflo first and your installation is suddenly possible. You will be pleasantly pleased that the job will be below your cost expectations and time effective.

What are some misconceptions about this particular toilet?

Saragosti: Smell, noise, installation, after-sales support are all misconceptions we deal with frequently. As a new product in United States — only 10 years compared to 52 years in Europe — people are apprehen-

sive about something with which they are not familiar. We know by experience that when a plumber installs our products, he/she will use them again on another job because they are easy to install, reliable, and with six million units sold worldwide, we are doing something right. Very often, people forget that Saniflo is the inventor and worldwide leader in the macerator business.

Another misconception is that this is a basement toilet! How many times have I heard that. But I would like people to realize that our products can be used for any situation;



The SANIPLUS system allows plumbers to install a half bath anywhere with water and electrical supplies.

basement, garage conversion, attic renovation, master bedroom, office, warehouse, etc. People forget that our macerators can pump 18 ft. vertically, but also 150 ft. horizontally!

Any new products, events, news, etc. at Saniflo?

Saragosti: We recommend checking www.saniflo.com to discover the Saniflo range. Most people know Saniflo because of our SANIPLUS, but many people don't know that we also have a complete range of gray water pumps, self-contained units, and much more to come in 2010. Saniflo will be on TV again in 2010, with two strong TV campaigns.

Describe your gray water pumping station.

Saragosti: Basically, there are no equivalents to our gray water pumps in United States. We offer a great finished look with three inlets for several hook ups, completely assembled including all necessary check valves built inside with a very attractive design compared to the other bulky relics. Our last gray water pump, The SANISWIFT, just received awards for best 100 products of 2009. This product is the best gray water pump available in its category. Nobody wants to install a huge, (Turn to Macerating... page 64.)

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ITT Flowtronex® introduces 'Cash for Pumpers' program

DALLAS — Borrowing a page from the highly successful "Cash for Clunkers" car program, ITT Flowtronex announced that effective September 30, 2009, it is offering a 10 percent factory-direct cash rebate for the replacement of old and inefficient irrigation pump systems.

For a limited time, the new "Cash

for Pumpers" program will allow customers to replace pump equipment that has been in service for 15 years or more with a new Flowtronex Variable Frequency Drive (VFD) Silent Storm packaged pump system. Flowtronex VFD technology has helped many golf courses reduce energy consumption 25 percent and water con-

sumption by 46 percent. The Silent Storm pump systems are used on 78 of the top 100 golf courses in the U.S. and in more than 72 countries worldwide. All systems are supported by 65 FlowNet service centers to help with fast and painless installations.

To qualify for the limited time only rebate, customers just need to send a photo of the existing/old equipment and fill out a simple rebate form after the purchase. The offer applies to all qualifying equipment in North America.

Morris Beschloss receives honors



Senator John Benoit and Assemblyman Brian Nestande officially awarded Morris Beschloss for outstanding dedication and service. Senator Benoit was in attendance to personally bestow the honor. Assemblyman Nestande was in Washington D.C. Presentation of the State Resolution was made by Cheryl Bisco, field rep for the Assemblyman, at the September luncheon of Rancho Mirage Republican Women; (Indian Wells Country Club) where Beschloss was the featured speaker.

Treat business as a game even if it's no 'game'

(Continued from page 34.)
ing things happen. Let the non-performers go.

Does someone come to mind as you read this? Sigh. Pull the trigger. Unless you feel like you haven't given him or her a fair shake? If that's the case, put a date on your calendar for two weeks from now. (The time limit is up to you. Make it sooner rather than later and put the pressure on. The time clock is running out.) Bring this person into your office and have a conversation like this:

"I am considering what's best for the company and for the team. It's my responsibility to make money and keep the cash flowing. I have to decide who to put in the game...who is going to help us win. I have to decide who needs to be cut. You are on the bubble. Before I decide, I am giving us two weeks. In the next two weeks, here is what has to happen:

- I will spend three days with you, side by side, and we'll look for ways for you to be more successful.
- You will demonstrate that you can and will do what is required by your Position Description.
- You'll bring your performance up to minimum standards. \$___ in

Sales per day. These ___ tasks completed on time. (Make sure to list behaviors and measurable objectives. Skip the attitude discussion.)

"I promise to help you any way I can to be successful. At the end of two weeks, we are going to have another sit-down. At that time, my decision will be clear. Fair enough?"

Then follow through

As the leader of your team, you are expected to make the tough calls. Yes, it is more fun to play the game when your offense has created some margin for error. Champions take the field and do what is necessary to win the game. Sometimes you fail. Sometimes you pull off the victory.

This business is pretty simple. Focus on the few things that make the most difference. Be willing to play offense, and defense. ■

Overwhelmed by too much to do and too little time? Join me for the Step by Step Success program. The power of one simple, focused action — one step at a time. Reach me at 417.753.1111 or contact@barebonesbiz.com. Check out the Step by Step Success program at www.barebonesbiz.com.

Truck inventory

(Continued from page 32.)
the full dollar amount. Techs that persist in using screwdrivers as chisels, or that just don't realize how to care for their hand tools, will be able to replace the hand tools in question with the compensation, but, are not rewarded as well as those who keep hand tools in good functional condition.

9, (optional): Another possible incentive for techs to have excellent inventory control would be some type of reward for passing those surprise inventory checks with flying colors.

I hope these ideas help you control your truck inventory. For my assistance or other ideas that can

help you improve your business protocols, give me a call at 845-639-5050. As always, be well and be prosperous. ■

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

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BY JOHN BARBA
guest writer

Do people really buy on price?

More than one simple factor

Now, there's an interesting question. Do they? Do YOU? It's easy to say "of course people buy on price." But that's way too general a statement to be considered an across-the-board fact. The trite answer to that question is if people truly did buy only on price, we'd all be driving Yugos. But that's stupid. Yugos were garbage cars, and no one wants to knowingly buy garbage no matter how cheap it is. Perhaps the Yugo example isn't the best example.

A better example would be this one: Why do people buy certain options on cars as opposed to buying the stripped-down version of the same car? Options cost money, right? Leather seats, DVD player, GPS, power windows and door locks, multi-zone A/C, premium sound package. These all cost money. We buy them. Why?

It's easy to say, "Well, that's what they stock at the dealer. I can't buy a stripped down version." Sure you can, if you're willing to order it and wait for it. But we want a car, and we want it now. We also want all the nice little toys that come with cars. The more stuff, the more fun the car is and the more value it will have when we decide to trade it in.

We want the car to be comfortable and convenient as well as fun, and we're willing to pay for that. The car makers know this too, and they make it easy for us to buy the options by packaging them for us, and putting the most popular packages on most of the cars they make.

They also make cars in different colors, just in case it matters to you. When I first got my driver's license, my parents had a silver Ford Granada. I drove it to my prom. My first car was a silver Subaru. My next car was silver Renault Encore. My third car was a silver Dodge Laser. By 1986 I was sick to death of silver cars and bought a black Jeep Wrangler. I don't ever want another silver car again. No matter how much it costs.

But don't people want the best deal on whatever car they decide to buy? So maybe they want to buy the car with all the extras as opposed to the stripped-down version. They're going to shop around until they find that car, or one pretty close to it, for the lowest possible price, aren't they? Some will for sure, but does everyone? Do most people? At what point do people decide that hunting for the best price isn't worth the time, effort, distance or aggravation that's required?

Let's pretend that Car A is priced at \$23,000.00 at a dealer half-way between home and work in about as convenient a location as possible. Car B, the same make and model with most, if not all, of the same features is priced at \$21,850.00 at a dealership some 35 minutes north of you and totally out of the way of your work.

Is the 35 minute drive for service and warranty work worth \$1,150.00 to you? What other factors might go into your decision? Suppose the dealership selling Car A also has earlier and later service hours and a loaner program so you can drop your car off on your way to work, use their loaner car to get to work, and pick your car up on your way home. Does that count?

Maybe the dealer selling Car A is also offering you free oil changes for life as long as you have your car serviced there, along with free car washes. Maybe their financing terms are a little more favorable. Maybe you have friends who bought cars from this dealer and have been very satisfied. Maybe the credit manager is a hot redhead and seems to like you.

The point is there may be several other factors, beyond price, that may very well lead you to buying Car A for \$1,150.00 more than you could have bought the virtually identical Car B.

We find instances each and every day when we don't buy the cheapest stuff. If you've ever purchased anything at an airport, you've traded convenience, hunger or thirst for price.

Convenience worth the cost

I'm writing this at Logan Airport in Boston, and just a half an hour ago I bought and ate a fried clam roll for \$14.00. Now, I could have bought a clam roll somewhere else for a lot less, but that would have involved going back through airport security, getting my car out of the parking lot, leaving the airport, driving up to the North Shore and finding a clam shack somewhere, buying and eating the clam roll, and then going back to the airport, finding another parking space and going through airport security again, all in order to pay a little less for the same clam roll (maybe even a better one!).

Naaah, I don't think so. I could also have picked out a less expensive lunch, like a burger or a hot dog. But since I live in the Midwest, burgers and dogs are easy things to find. I really, really wanted a clam roll, so I forked over more money for the lunch of my desire. And it was worth it!

People will trade price for all kinds of benefits: convenience, schedule, style, quality, comfort, professionalism, service, fit or preference. All can, and often do, take precedence over price.

Buying for convenience may very well be the most common buying practice in the world. Convenience stores are the obvious example. A bag of chips and a bottle of soda are common purchases at any corner store. A 12 oz bag of chips costs \$0.99 and the 16 oz bottle of soda goes for \$1.19.

If one were to instead go to a grocery store, a 48 oz bag of chips goes for \$2.29 and a two-liter bottle of the same soda costs \$1.29. If you consider value as what you get divided by what you pay, you're getting screwed at the convenience store, aren't you?

But it's a small store, you can get in and out quickly and the portions are sized for the quick, on the go snack. That's worth something.

Just about anything purchased at an airport, ball park, hotel or shopping mall is usually a convenience buy, and we pay for that convenience. On the interstate, it's easier and more convenient to refuel at the service stops rather than get off and hunt for the bargain. You can drive from Albany to Buffalo on the back roads or on the New York Thruway. The Thruway costs more, but is a heck of a lot faster and easier than the back roads.

What about style? Do you buy the cheapest clothes you can find, even if they look ridiculous and don't fit? If I see you wearing a pink polka-dot shirt with electric green Bermudas that look like they came off the George Foreman rack even though your nickname is "Skinny," I'll believe you.

What about airfare? You can fly from Minneapolis to Boston direct, or, for a little less money, fly through Detroit, Chicago, Memphis, Atlanta, Cleveland or Cincinnati. Or through all six cities for even less money. How much cheaper does it need to be to make the six hour flight and layover a better deal than the 2 and a half hour non-stop?

This is all great stuff, but what does it mean when a customer tells you your price is too high? ■

Now there's an interesting question. Do they? Do YOU?

The incredibly shrinking dollar

“The value of U.S. commercial real estate prices of all types has plunged 39% between its peak in late 2007 and current evaluation.”

This disconcerting analysis emanating from *Moody's Investors' Service and Real Estate Analysis* emphasizes the shock that the construction industry has had to absorb in a relatively brief time period of one year or less. And the end of this deterioration may not yet be in sight, despite increasing glimmers of improvement in certain parts of the country.

Although not as well-publicized as the calamity that has befallen hundreds of thousands of residential homeowners, it will likely cast a longer shadow, as a nationwide turnaround depends on the return to normal health by the economy as a whole. This is especially dependent on personnel rehiring and capital expenditures, which are currently nowhere in sight.

Commercial real estate, which encompasses shopping centers, hotels, motels, office buildings, educational, religious and medical institutions, high rise condominiums, restaurants, etc.— has been hit with devastating price plunges across the board. In fact, the consummate total value of America's largest aggregation of fixed assets has fallen to the lowest level in more than five years. This was the base point during which this vibrant sector had jumped off to unprecedented expansion, both in prices, as well as square footage.

In assessing future potential for commercial and industrial growth, current developments seem primarily focused on health-related facilities and assisted living for the increasingly aged sector of America's population.

With government-oriented initiatives geared toward universal healthcare, renewable energy, climatological innovation and tighter financial regulation, the chances of nationwide development in most phases of commercial real estate are remote. China's avowed intent to spend billions of dollars to purchase U.S. fixed assets may generate some pricing comeback, but will do little to engender commercial expansion.

The opportunities that had seemed inherent in last year's drive toward greater energy development and conventional focus on power generation are foreclosed under the current Administration's governance. Consequently,

This is the first time since the Great Depression that a deep recession has occurred at a time of deflation.

a renewed industrial construction and energy boom does not seem apparent in the foreseeable future.

During this ongoing hiatus in new construction, there does appear to be greater emphasis on maintenance, repair, and upgrading projects. Reports from all geographical sectors allude to these developments.

This, of course, applies to the residential and original equipment sector as well. Although not a viable long-term substitute for the dynamic projects that abounded in the period leading up to the last five years, it does at least provide work opportunities for a large segment of the plumbing-heating-air conditioning and mechanical segment of the PHCP-PVF sector. But a major pickup in overall work opportunities for this important industry area will have to await progress signs not yet apparent

on our forecasting radar screen.

Incredibly shrinking dollar acquires new meaning

In a litany of repetition, successive U.S. Treasury Secretaries have consistently called for a strong dollar, no matter what the vagaries of various economic cycles implied.

Since World War II and the preeminence of America's dominant world economy, the greenback quickly climbed to the top of the global heap, replacing the British pound as the world's currency of choice. Such universal commodities as oil, copper, steel, and agricultural products have, for decades, been denominated in dollars.

This provided colossal strength to the American currency, since the monies utilized by the world's currencies had to be first converted to dollars before these multi-billion dollar purchases could be made.

In the various economic gyrations that have occurred in the past 60 years, the dollar has had its ups and downs, primarily at times of recessions, resulting from inflation caused by too few goods being chased by a surge of dollars, driving prices out of sight.

This was normally accompanied by the price of gold vaulting upward, and a wide range of producer and consumer goods galloping to record levels. This inevitably depressed the value of the dollar until such time that supply/demand regained its balance, effectively ending the recession.

But this is the first time since the Great Depression that a deep recession has occurred at a time of deflation.

This was precipitated by a near financial meltdown and a deleveraging by a bloated U.S. economy primarily built on debt leveraging that has now imploded.

The current shrinking dollar is caused by the Federal Reserve Board's flooding the arteries of commerce with literally trillions of dollars to reverse the seize-up of money flow that had threatened to bring America's \$14 trillion economy to a standstill.

With interest rates dropping to a record low, due to this new flood of excess money coursing into banks' balance sheet reserves, the dollar is now not competitive with a basket of global currencies. This time it's not higher prices, but the reverse — falling costs and income, with expanding manufacturing capacity, growing unemployment, and a surfeit of all types of goods crowding shelves of manufacturers, distributors and retailers alike. Gold is an exception because it's not dependent on economic usage, but is valued in dollars.

Although this trend aids America's growing export activities, it deflates U.S. purchasing power and makes the dollar less attractive to foreign investors, due to the disappearing investment returns.

Eventually, this will be balanced by a Fed exit strategy that will start moving interest rates back up. However, due to a deflated world economy, this will not be manifested by a stronger dollar and an inflationary trend for a long time to come.

Cap-and-Trade Senate battle heats up as Copenhagen world showdown beckons

While the healthcare plans' Congressional rhetoric becomes ever more ferocious, the Obama Administration is forcing a Senate showdown on “cap-and-trades,” as the President prepares for his second Copenhagen trip (after his failed Chicago Olympic advocacy). He is

(Turn to Shrinking Dollar page 46.)



BY MORRIS R. BESCHLOSS
PVF & economic analyst emeritus

In fact, the consummate total value of America's largest aggregation of fixed assets has fallen to the lowest level in more than five years.

Shrinking dollar

(Continued from page 45.)

ready to provide U.S. world leadership in the battle for climatological purity.

With the highly controversial cap-and-trade legislation barely passing a House vote earlier this summer, Obama must have a signed deal in his pocket when he addresses the global-warming gathering in Copenhagen in December.

This runup to the Senate vote is enlisting such utility giants as San Francisco's Pacific Gas and Electric and Exelon, the biggest operator of nuclear power plants in the U.S. These have gone so far as to quit the U.S. Chamber of Commerce over the Association's adamant opposition to the odious cap-and-trade legislation. A further split has been caused by a consortium of other business opponents suspending their membership in the American Coalition for Clean Coal Electricity

(ACCCE). This trade group for coal and utility companies is fighting a desperate battle to save its still dominant position as a major resource for America's massive electric utilities.

This split in America's business and industry has become increasingly political, as such relatively clean providers as nuclear energy and natural gas burnish their 'green' credentials in the fight for eventual resource supremacy.

Although the climatological extremists, led by Al Gore, former Vice President and film protagonist, would prefer wind, solar, and geothermal — even they are waking up to the fact that such marginal resources for power providers would contribute only a fraction of the void led by the condemnation of coal, clean or otherwise, from its present cost-effective, but highly pollutant position.

Although facing opposition in the Senate by coal state senators, and the overwhelming majority of America's small business owners and the U.S. population as a whole, the Obama Administration is working feverishly to push cap-and-trade legislation through the Senate, while the verbal war on universal health-care dominates the headlines.

Expect this showdown to reach its climax before Thanksgiving, as both of these Obama initiatives vie for a successful conclusion in the waning weeks of 2009.

Deflation holds the upper hand — for now

As the 2009 fiscal year ended September 30, with a resounding record budget deficit approaching \$1.8 trillion, you would think alarm bells would be clanging nationwide, with banner headlines bemoaning this calamity.

But the worst that can be gleaned from public reaction is a shrug of the shoulders, despite the fact that this

ignominious deficit is four times the total of last fiscal year's near \$500 billion all-time record.

And neither year has included much of the excessive spending associated with the military campaigns in Iraq and Afghanistan.

The main reason for this seeming apathy is the disinflationary economic environment that has transcended the world, reeling from the worst financial crisis and recession since the end of World War II.

Whereas all the previous recessions befalling the U.S. in the last 60 years have occurred in the throes of inflationary storms, the current disinflationary trends have put the sure-to-come inflationary tsunami on the back burner.

The biggest gripe I hear from business owners and managers at all levels is the inability to get price increases. While wages have been at a practical standstill in the past year, continuing job losses and tight credit availability have weighed heavily on consumer demand. Production in

The biggest gripe I hear from business owners and managers at all levels is the inability to get price increases.

most cases is related to inventory rebuilding, which had dropped to irreducible minimums.

While the runaway prices of oil derivatives of the 2008 summer are becoming a distant memory, the excess of surplus labor, manufacturing capacity, and the commodities glut have superseded inflationary fears. Natural gas prices actually hit a multi-year low recently, although bouncing back somewhat in recent weeks.

Instead, capital spending for expansion and debt-leveraged consumer spending have been replaced with an emphasis on productivity by industry, and the highest savings rate in a decade by consumers.

A burgeoning U.S. national debt is just around the corner, but for now it's overshadowed by more immediate worries. ■

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

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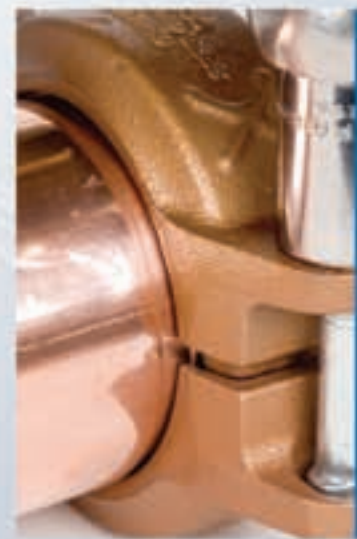
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B U I L D I N G C O N N E C T I O N S T H A T L A S T



Caroma Expands HET Product Offering: *Profile Smart with Integrated Hand Basin*

Caroma is pleased to introduce the Profile Smart with integrated hand basin. The Profile Smart high efficiency toilet (HET) incorporates a sink into the lid of the toilet tank for increased water savings opportunities in the bathroom.

The Profile Smart with integrated sink features Caroma Smart™ technology, developed and mastered over the last decade, delivering the ultimate combination of design, water savings, and performance.



a 2.5 gallon toilet, and nearly 19,000 gallons per year compared to a 3.5 gallon toilet! The amount of water savings increases when you also use the integrated sink to wash your hands.

When the Profile Smart is flushed, fresh cold water is directed through the faucet for hand washing. This water then drains into the tank to be used for the next flush. This unique water and space saving design features chrome buttons built-in to the tapware design. It also features a large trapway, nearly double the industry average, virtually eliminating blockages and overflows. The installation process is quick and easy and does not require any special instructions.



Profile Smart features

- * Dual flush high efficiency toilet: 1.28/0.8 gallons per flush (full flush/half flush)
- * Integrated hand basin for enhanced water savings
- * After flushing, fresh cold water is directed through the faucet for hand washing and drains into the tank for the next flush
- * Large trapway virtually eliminates blockages and overflows
- * Washdown technology to push waste from the bowl
- * Unique water and space saving design
- * Chrome buttons built-in to tapware design
- * Easy installation
- * Features award-winning Smartflush® water saving technology
- * WaterSense labeled

The Profile Smart is dual flush, using 1.28 gallons of water per flush (gpf) for a full flush (solid waste) and 0.8 gpf for the half flush (liquid and paper waste). This averages just under 0.9 gpf, which can save the average family of four more than 5000 gallons annually by replacing a 1.6 gallon toilet, more than 11,000 gallons compared to



Water savings using Caroma Smart technology

	5 gal (19 ltr) Single Flush toilet	3.5 gal (13 ltr) Single Flush toilet	2.5 gal (9.5 ltr) Single Flush toilet	1.6 gal (6 ltr) Single Flush toilet	1.6-0.8 gal (6/3ltr) Dual Flush toilet	1.28-0.8 gal (4.8/3 ltr) Dual Flush toilet
Water used per year*	36,162 g (137,418 l)	25,314 g (94,022 l)	18,081 g (68,709 l)	11,572 g (43,395 l)	6943 g (26,037 l)	6480 g (24,301 l)
Water savings per year using Caroma Smart toilets	29,682 gallons (113,117 liters)	18,833 gallons (69,721 liters)	11,601 gallons (44,407 liters)	5092 gallons (19,094 liters)	463 gallons (1739 liters)	

* Based on 1:4 solid/liquid usage for an average family of four and 5 flushes/person/day.



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High Efficiency Bathroom Fixtures

Saving water at the touch of a button

Caroma: Leading the way in water conservation



- 47 WaterSense labeled high efficiency toilets (HET)
- Average flush as low as 0.9 gallons per flush using Caroma Smart™ technology (full flush of 1.28-1.6 gallons for solid waste/half flush of 0.8 gallons for liquid/paper waste)
- Trap through way nearly double the industry average, virtually eliminating blockages and reducing maintenance costs
- Fast and easy installations, ideal for retrofits and new builds
- New HETs available for space-restricted areas, such as under a counter or in ADA installations with grab bars
- Considerable water savings compared to 1.6 gallon single flush toilet (assuming 4:1 half to full flush ratio)
 - * 40% savings using a 1.6/0.8 gpf toilet
 - * 44% savings using a 1.28/0.8 gpf toilet



Caroma: the world leader in dual flush toilet technology



PRODUCT INTRODUCTION: Profile Smart

The Profile Smart high efficiency dual flush toilet with integrated sink for greater water conservation

- Dual flush, averaging 0.9 gallons per flush
- Large trapway, making it virtually unblockable
- Unique design directs fresh water through the integrated faucet for hand washing



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Innovation within

A look at the innovation inside a wind manufacturing plant

From the Capitol building to the Rocky Mountain region of the United States, renewable sources of energy have become a hot topic. An economy once dependent on foreign sources of fuel is being replaced by a new economy powered by wind, solar and geothermal energy. The most recent example comes from Pueblo, Colo. where Denmark-based Vestas is building the world's largest wind tower manufacturing plant.

With more than 38,000 wind turbines in 63 countries, the manufacturing plant in Pueblo marks the largest single investment the company has ever made. No doubt, Vestas is ready to help the U.S. wind energy market move forward. With so much money on the line, Vestas needed to find a team of qualified contractors and engineers to trust with its investment. Olson Plumbing & Heating was selected to install the industrial gas and compressed air



Mike Trapp (left?), President of Olson Plumbing & Heating, and superintendent John Hill worked with Wholesale Specialties, Inc. to coordinate shipments and delivery of 1/2" to 4' pipe sufficient to complete Olson's aspect of Denmark-based Vestas in building the world's largest wind-tower manufacturing plant in Pueblo, Colo.

portions of the project.

Michael "Mike" Trapp, President of Olson Plumbing & Heating, wanted to install materials as innovative as the turbines soon to be

manufactured at the Vestas Pueblo location. Trapp knew Viega ProPress® Stainless fittings would satisfy the innovation requirement he was looking for. The problem – the engineer hadn't intended on using the Viega ProPress Stainless System. "The engineer was leery of using ProPress Stainless because it was new to him," said Trapp.

nesses that help benefit the organization. Trapp is thankful for the relationship he has in place with his wholesaler, Wholesale Specialties, Inc. "We owe a lot of credit to Wholesale Specialties. They were more than understanding during the entire construction process. They were meeting shipping loads at 5:00 am to make sure we kept the project on schedule," said Trapp.

With 50 Olson Plumbing & Heating employees working on the project, the project only took a matter of months. By prefabricating all of the ProPress Stainless connections, Trapp's team was able to pipe the 500,000-square-foot production area and 50,000-square-foot internal area of the Vestas Pueblo facility in merely five months, from January through June 2009.

John Hill, superintendent of Olson Plumbing & Heating, oversaw the installation of ProPress Stainless



Olson Plumbing & Heating uses the Viega ProPress Stainless System exclusively, as shown in this prefabricated industrial gas and compressed-air piping section waiting for installation at the Vestas wind-tower manufacturing facility.



Olson prefabbed piping sections in 40-foot lengths and installed them at the Vestas facility using the Viega ProPress Stainless System.

But Trapp explained to the engineer, "We don't use anything other than ProPress... it is a superior product... if Olson is doing the job, we are installing ProPress. It was that easy; we started placing orders for 1/2" to 4" ProPress Stainless fittings and pipe immediately."

One key to business success is partnering with people and busi-

at the Vestas facility. "The prefabricated piping lines had to be trucked to the Pueblo facility from the Olson Plumbing and Heating headquarters in Colorado Springs. We had to truck the pipe on 40' racks. It was a sight to see," said Hill. As equally impressive, was the actual installation of the prefabricated piping

(Turn to ProPress®... page 52.)



Sometimes a hands on demonstration is all you need.

The heat exchanger in a Bobcat modulating condensing boiler uses one inch wide waterways, making it much less susceptible to mineral buildup. A popular heat exchanger used by many competitive heating companies has water passages only .20 of an inch wide. In addition, theirs requires regular cleaning or it could void the warranty. One more nice thing about the Bobcat is, that it is designed and built right here in America by Slant/Fin, a company with 60 years of experience in the heating business.

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ProPress® System pipes wind-power factory

(Continued from page 50.)

runs. "We worked in two teams of three and installed 21-miles of stainless pipe. Our crew had to be hoisted as they were making the connections," said Hill.

The Vestas project might have

By prefabricating all of the ProPress Stainless connections, Trapp's team was able to pipe the 500,000-square-foot production area and 50,000-square-foot internal area...in merely five months, from January through June 2009.

been monstrous in size but Trapp's team approached the project with the same goal in mind as they do with any project — total owner satisfaction. "We complete our projects on time and within budget," said Trapp. "Without question, ProPress saved us a lot of time." Project superintendent, John Hill proudly interjected, "We finished ahead of schedule by three or four weeks. We wouldn't have been able to achieve that if it wasn't for ProPress."

Reported by the American Wind Energy Association (AWEA) in its July 2009 market report, the U.S. wind energy industry installed 1,210 megawatts of new power generating capacity in the second quarter. That figure brings the total of wind energy added this year to just over 4,000 MW — an amount larger than the 2,900

MW added in the first six months of 2008. It appears wind generation may help us through difficult economic times by creating jobs, and eliminating our dependence on foreign sources of fuel.

Colorado leaders are ready to see

the Vestas facility open. By partnering together and using Vestas' expertise in wind generation and Olson Plumbing and Heating's expertise in quality craftsmanship, the Vestas wind tower manufacturing plant will open prior to end-of-year 2009. ■



Fifty Olson employees piped the Vestas facility in just five months using the Viega ProPress Stainless System.

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Watch your CARB(s)

The California Air Resources Board wants to clear the air in the Golden State. But its efforts to establish and enforce new air quality regulations leave many fleet operators confused, especially as the struggling economy makes it difficult to invest in clean air (green) technology.

The California Legislature established the California Environmental Protection Agency Air Resources Board, also known as CARB, in 1967. The legislature granted the 11-member, governor-appointed board the authority for regulating various activities in manufacturing, agriculture and transportation that can affect air quality.

Several local and state agencies, particularly urban areas with frequent air quality issues, are already closely following California's efforts. Plus, Congress and the Obama Administration are considering federal legislation that would, among other things, establish an emissions cap-and-trade system allowing companies to buy and sell environmental credits. That's why all truck fleet operators should stay ahead of the game by familiarizing themselves with CARB legislation.

According to CARB, trucks and buses account for about 30% of all statewide emissions of oxides of nitrogen and 40% of all diesel particulate matter emissions. That's why California established this comprehensive program of regulations and incentives to achieve real, quantifiable reductions in greenhouse gases with the Global Warming Solutions Act of 2006 (AB32).

To meet the global warming act's goals of limiting greenhouse gas emissions to 1990 levels by 2020, the board enacted several regulations governing the emissions from diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds. The board also approved a regulation that requires trucks or trailers equipped with transport refrigeration units (TRU) with 2001 or older engine models to meet certain air emission standards before they can operate in the state of California.

Truck operators must replace TRUs that don't meet the standards with compliant models or they must install approved aftermarket emission treatment systems. Since the board granted another six-month delay in enforcement to give truck operators more time to comply, enforcement is now scheduled to begin Jan. 1, 2010. That enforcement deadline was previously delayed six months from Dec. 31, 2008, to July 17, 2009.

The regulation establishes a timetable over the next several years that requires TRUs equipped with 2002 and subsequent model year engines be replaced or retrofitted with approved aftermarket emission treatment systems. Eventually, all trucks and trailers with refrigeration units running in California, whether they're based in the state



Because CARB provides truck operators exemptions, delays and credits for certain vehicle types, hybrid diesel-electric technology can earn fleets additional credit toward meeting the regulation's emission targets.

or out of state, will have to meet the same emission standards required of 2010 truck engines.

In December 2008, the board approved regulations that require truck operators to install exhaust retrofits that capture pollutants in emissions. The regulations also established an accelerated timetable. That timetable requires over the next several years eventual replacement of all heavy-duty diesel-fueled trucks with units equipped with engines that meet the EPA's 2010 emission standards.

The regulations also stipulate that truck owners must reduce diesel particulate matter and oxides of nitrogen emissions in order to meet certain performance standards. The regulations don't require vehicle replacements until 2013 and they don't require truck operators to replace all of their trucks in a single year.

However, by leasing diesel-electric hybrid vehicles now, fleet operators in California have a better chance of getting money from competitive state grants, including those available through the Goods Movement Emissions Reduction Program and the Carl Moyer Program.

CARB has provided three options for fleet operators to meet the California standards:

- Retrofit trucks with particulate matter filters and replace vehicles (or engines) according to a prescribed schedule based on the existing engine model year.
- Retrofit a minimum number of engines each year with a high-level particulate matter exhaust filter and replace a minimum number of older engines with newer engines that meet the 2010 new engine standards.
- Use particulate matter and oxides of nitrogen factors established by the regulation to calculate the average emissions of the fleet. Then, by a certain deadline each year, demonstrate that the fleet's average emissions do not exceed the regulation's emission targets. (For more detailed information, visit the California Air Resources Board Web site at: <http://www.arb.ca.gov/msprog/on-diesel/documents.htm>)

Hybrid diesel-electric technology can earn fleets additional credit toward meeting the regulation's emission targets. That's because CARB provides truck operators exemptions, delays and credits for certain vehicle types.

For example, if a truck operator leases a hybrid diesel-electric truck that achieves a 20% or greater fuel economy improvement over a comparably equipped standard diesel vehicle, the operator can receive double credit towards the emission targets until 2017. Those additional credits can give the truck operator more time to run high-value or unique trucks that are difficult to replace.

Leasing specialists can help truck operators take full advantage of all of the incentives, exemptions, delays and credits available from CARB, the state of California and the federal government. By doing this, truck operators can significantly lower their truck costs and reduce the impact California air quality regulations will have on their operations. ■

Olen Hunter is the national sales director for PacLease. Because of its direct relationship with truck manufacturers Kenworth and Peterbilt, PacLease can help truck operators select the right choices in hybrid truck specifications that can further enhance their operations. Also, by taking advantage of what full-service leasing can offer from a provider like PacLease, truck operators can be fully prepared for the changes California's new air quality regulations will bring in the next decade. And as more air quality management agencies adopt measures similar to those already enforced in California, PacLease can offer truck operators the ability to concentrate on what they do best instead of on the maintenance of their trucks or chasing down tax credits, incentive programs or grants from state and federal governments.



BY OLEN HUNTER

According to CARB, trucks and buses account for about 30% of all statewide emissions of oxides of nitrogen and 40% of all diesel particulate matter emissions. That's why California established this comprehensive program of regulations and incentives to achieve real, quantifiable reductions in greenhouse gases with the Global Warming Solutions Act of 2006 (AB32).

Low income apartment complex goes green with mod-con systems

It's a tough economy out there, and it was especially tough last winter near Boulder Colorado when temperatures dropped well below zero. Low-income tenants living in one 18-family unit at a Thistle Community apartment complex were really feeling the pinch when space and domestic water heating bills jumped. At exactly the same time, system performance took a nosedive.

"It was an awful coincidence, with



Denver-based Advanced Hydronics mechanical firm specializes in designing and building hydronic heating systems and was the logical choice for replacing systems at Thistle Communities.

severe weather on the way, a rate hike and dying hot water systems happening all at once," said Tom Olds, president of Denver, Colo.-based Advanced Hydronics, Inc.

"I felt especially bad because — of

Advanced Hydronics, LLC – it's all in the name

Advanced Hydronics is a Denver, Colo.-based design-build mechanical firm specializing in hydronic heating systems. The firm also gets involved in chilled water systems, high velocity and conventional AC, solar thermal, ground source heat pumps, and anything else where owner Tom Olds thinks their skills can be intelligently put to use.

Olds describes himself as "tenacious about doing things correctly" and stresses that to his guys all the time. "However, I allow them to take the time to be precise with their installation methods so that our clients receive the full value of a job exceptionally well done. I've been in hundreds of mechanical rooms and — being as objective about it as I can be — no one locally does as fine a job as we do and I am very proud of that."

The NeoTherm is a direct vent, sealed combustion boiler...zero clearance to combustibles and convenient top connections made it a good choice for the mechanical room's tight confines.

the many multi-family mechanical system jobs we do — this was the first one I'd encountered where the tenants were paying directly for metered energy use," added Olds. "Outdoor conditions greatly increased their need for heat while at the same time the old, leaking equipment had become so inefficient that there was an urgent need to replace it.

"Every dollar the tenants could save through system replacement would give them more funds for other urgent needs — food, health care, car repair or education," continued Olds. "In my book, there's no better reason to do a quality installation."

Thorny situation at Thistle

"We were perplexed about how to handle the replacement of equipment at the Parkville Apartments (a six-building complex in Longmont, Colo., 10 miles northeast of Boulder)" said Susan Andre, Thistle Communities. "We'd hoped to nurse the heating equipment along until the spring, but the need became critical when the boiler's leak worsened. We're committed to long-term capital improvements as well as proactive problem-solving for our tenants so, in this case, we had to act quickly."

According to Mary Roosevelt, CEO, the mission of Thistle Communities, a non-profit organization with about 800 qualified-income apartment units in Colorado, is to create and preserve quality, permanently-affordable rental and ownership homes for working families, seniors and people with disabilities.

All residents are "income verified." Parkville apartment units are available only to those people earning up to 50% of the area median income, though most, at only 30% median income, earn only extremely low income. "Thistle homes allow construction workers, janitors and food service employees — people who are the backbone of our economy — to live in the communities

they serve," added Andre.

"With a philosophy like that, you naturally want things to go right for an altruistic organization and hard working people in need," said Olds. "At an elevation of 5,500 feet and with a design temp of -10°F, the worst of winter conditions can happen without warning." Fortunately, a "worst case scenario" didn't develop, so the story ended happily.

Olds won the opportunity to replace the old cast iron boiler and electric water heater with a new mod-con and "side-arm" indirect. The outdoor-access mechanical room was an awful mess, complicating the mid-February replacement, but his 2-man crew had the old systems removed and replaced in four days.

"As the work progressed, we provided a temporary heat source so that we could keep tenants comfortable while the retrofit work was in progress," explained Olds.

Technology to the rescue

Olds specified a 399 MBH, 95% efficient Laars NeoTherm modulating-condensing boiler and 120-gallon Bradford White indirect water heater for the replacement.

The NeoTherm is a direct vent, sealed combustion boiler that mod-



A Laars NeoTherm modulating-condensing boiler is the heart of the system. Advance techs built a boiler control panel that recognizes each living unit, with baseboard radiation loops, as a zone.

ulates with a five-to-one turndown. Zero clearance to combustibles and convenient top connections for water, gas and combustion air made it a good choice for the mechanical room's tight confines. The natural gas or LP-fired boiler features a stainless steel heat exchanger and low NO_x emissions.

The indirect water heater's coil is constructed of 1½" carbon steel tubing and coated with Vitraglas lining, offering exceptional first-hour delivery and abundant hot water reserves. The unit also has factory installed dielectric waterway fittings, T&P valve and brass drain valve. It's also equipped with three protective aluminum anode rods.

Sadly, the mechanical room posed a challenge of its own: Its 6'x10' size (Turn to Mod-Con... page 56.)



To the rescue: Advanced techs set up shop outside the complex prior to installing a new boiler and indirect water heating system during a cold February. A temporary heat source kept residents comfortable while work progressed.

Introducing the Residential Boiler Fill Fitting from Watts



Series RBFF, Designed for the Heating Professional

Save time by eliminating up to 11 threaded joints with our new RBFF service valve. The RBFF features a 3-port ball valve design to make servicing system expansion tanks and fill valves a snap. A conveniently positioned pressure gauge is also included for easy fill valve adjustment. The integral drain port is used for relieving pressure from the expansion tank for accurate pre-charge measurement and can also be used for a variety of system draining and filling functions.



For more information,
visit our website www.watts.com/rbff

Circle 38 on Reader Reply Card

WATTS[®]
A Watts Water Technologies Company

Mod-Con boilers save scarce \$\$ for low-income residents

(Continued from page 54.)

placed a premium on every square foot. That meant Olds needed to wedge a lot of gear into the space. Working in there meant tight quarters, so, to simplify the install, his crew first designed and built a pre-fabricated hydronic control panel



The complex's 6'x10' boiler space presented a challenge to Advanced technicians, who turned this shambles into a neat, organized mechanical room.

at the shop.

When the new boiler and indirect water heater were activated, the systems fulfilled expectations quickly. The boiler's built-in outdoor reset control modulated system temperatures perfectly and the large indirect jumped in to meet domestic water needs.

Reward for a job well done

Olds explained that the new boiler control panel was built to recognize each living unit as a zone, sending heated water to baseboard radiation loops. Every tenant controls and pays for the heat they consume by analog meter measurements at each zone valve.

"The cost benefit of operating the high efficiency systems was immediately noticed by Thistle," said Andre. "Initially, the tenants weren't concerned about the level of efficiency offered by the system, though they expected some benefit because of it. The urgent need was for reliable heat. That happened quickly with the new system, and the residents will see the added advantage of greatly improved utility bills. They are delighted with that."

And, for Olds, more good news came by phone not long ago when he received word from Thistle Communities that a grant from the Governor's Energy Office came through to cover the cost of replacing all of the old, existing boilers and water heating equipment at Parkville Apartments, a complex of six buildings with 76 households.



Advanced techs load up an old, leaking water heater, to be replaced by a 120-gallon Bradford White indirect water heater coil.

The job Advanced Hydronics completed on the first of several projects won them the opportunity to replace five more similar systems, all within the same multi-family development. "We'll use the Laars NeoTherms for all of these jobs," added Olds. "We were very impressed with the ease of installation and operational efficiency. Gladly, they were, too." ■

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Sink job 'golden' for University of Minnesota

When the ELKAY Technology Center (ETC) came online in April 2008, one of the first major orders produced by the new sink facility included custom sinks, water coolers and fountains for the \$288.5 million TCF Bank Stadium in Minneapolis. The TCF Bank Stadium, an iconic open-air, horseshoe-shaped venue for the University of Minnesota opened in September 2009 for a Big Ten pre-season game, hosted by the Minnesota Golden Gophers.

The authorized ELKAY representative sales team of Bongard Corporation, represented by Pete Mayer, Kathy Schug, Ron Bongard and Mike Sides, worked with the local Ferguson Enterprises outside sales rep, Brian Vivier, to win the customized sink, cooler and fountain job for ELKAY.

In June 2008, Vivier and Mayer took customized sink concept renderings created by ELKAY Industrial Designer, Jonathan Chong and contract designer, Rachel Julkowski to Bruce and Kelli Akins of Innovative Surfaces, members of the firm installing the countertops for the TCF Bank Stadium project. Later that month, ELKAY custom sink concepts were passed to the official interior designers for the Stadium, and a meeting was held.

Project interior designers for the TCF Bank Stadium project, Shawn Gaither and Anne Olsen [Studio Hive; upper levels and suites], and Bob Zakaras [Architectural Alliance; lower levels] wanted fully integrated branding that would prominently display the U of M team logo in new, complementary ways. Chong was instrumental in fulfilling numerous concept drawings for the Stadium



The University of Minnesota Board of Regents approved the brand-building idea of emblazoning the university's "M" logo on a variety of sinks and water coolers for the new, 900,000-sq.-ft. TCF Bank stadium at the university.

designers, which ultimately led to the final design concept, the University of Minnesota "M" logo etched into the sinks.

In late June 2008, Gaither, Olsen and Zakaras took the final sink design concept to Mortenson Construction, official construction contractor for the project, and the University Board of Regents for approval. After the "M" sinks were approved, additional conversation also ensued about emblazoning water coolers and drinking fountains with the "M." Shortly thereafter, the new concepts for cooler and fountain customization were brought to the U of M Board of Regents, who approved this brand-building idea as well.

As with any project of this caliber, a number of resources were involved to ensure a seamless execution. In July 2008, ELKAY Plumbing Products

Division President, Steve Rogers, along with ELKAY senior vice president of sales, Mark Whittington, ELKAY regional sales manager, Steve Embree, and the Bongard rep team met with the Stadium design team, Harris Mechanical and Mortenson Construction to confirm delivery arrangements for the 149 customized ELKAY products. Subsequently, Vivier of Ferguson worked with ELKAY Technology Center engineers, Harris Mechanical staff, and

fountains were produced, shipped and installed in the Stadium.

As stated before, the entire TCF Bank Stadium project encompasses 149 customized ELKAY sinks, water coolers and fountains. Following is a breakdown of the models and placement within the Stadium.

The design cycle time for the TCF Bank Stadium project, from presentation of the final concepts to confirmed models for production was 45 days. The production time for all 149 customized sinks, water coolers and fountains was accomplished in 40 days. The 85-day timeline was well within the ETC's stated goals of compressing prototyping to production and tooling cycle times.

"Our team is proud that we have been able to achieve our cost reduction targets, provide unparalleled product variety and consistently accomplish all of this, well within the 90 day cycle time promise," comments Mike Mestousis, plant manager for the ETC in Broadview, Illinois.

ELKAY notes that onsite design and technical consulting services are available for customized, commercial ETC projects.

Mayer of Bongard reflects, "Everyone, from the project manager to the designers has been extremely satisfied with not only the final products, but the process involved for the de-



The university's "M" logo greets patrons of the stadium whenever they use the ELKAY fountains and water coolers such as these barrier-free units.

Schug of Bongard to coordinate all details for the production, transportation and installation of the job's 111 customized ELKAY sinks, and 38 customized ELKAY water coolers and drinking fountains.

In October 2008, Ferguson Enterprises officially entered the purchase order for the TCF Bank Stadium job. During the winter months of 2008-2009, the sinks, water coolers and

sign and manufacturing of the sinks, water coolers and fountains. Not a deadline was missed."

The 900,000-sq.-ft. TCF Bank Stadium is on the northeast side of the Minneapolis campus, near the site of the former Memorial Stadium.

For more information on the TCF Bank Stadium, visit: http://stadium.gophersports.com/about_quick_fact_s.html. ■



In all, Elkay custom-designed 149 sinks, water coolers and fountains with the "M" logo and completed the project in 40 days.



Faucet line

Padova faucet line combines quality and a high-end modern style at an affordable price. Padova's design is simple stated elegance in straight lines, angled handles and unique bends. The Padova line consists of kitchen and lavatory faucets, bath and shower sets, vessel faucets, bath fillers, and accessories including robe hooks, towel rings, towel bars and paper holders. The entire Padova family is available in chrome and brushed nickel versions and offers both 4" and 8" lavatory configurations. **Matco-Norca.**

Circle 101 on Reader Reply Card

Two-stage heaters

Series T 2-stage heaters offer dual output for improved rate differential. Infrared heaters are built for heavy



duty industrial and commercial applications. All units include a hi-low output capability, for quicker recovery on high-fire and economical steady operation on low-fire. Available in rates from 40,000 to 220,000 Btuh, natural gas or propane, and equipped with a 100% efficient reflector. **Superior Radiant Products.**

Circle 102 on Reader Reply Card

Stop valve trim & connector kits

Quick-Connect stop valve trim and connector kits contain everything



you need to connect a CPVC, PB, PEX or copper stub-out to a faucet or toilet. Kits require no tools, making installations a snap while providing a professional and decorative look. Available to connect and or trim a 1/2" or 3/8" CTS stub-out to a standard toilet or faucet. **Watts.**

Circle 103 on Reader Reply Card

★ Phc News product of the month ★



Geothermal heat pump adapts to weather

Prestige Series™ 27 to 31 EER geothermal heat pump — with Comfort Control System™ serial communicating feature — offers the ultimate in energy savings and flexibility. Geothermal units supply heating, central air conditioning and domestic hot water while costing less to operate than any other heating and cooling system. Prestige Geothermal heat pump is offered in package and split system configurations. Package products are available in 2, 3, 4, 5, and 6 ton capacities; split systems are available in 2-, 3-, 4-, and 5-ton capacities. Ensuring optimum comfort, pumps feature two-stage compressors and advanced variable speed air delivery that automatically adjusts to changing weather conditions. **Rheem.**

Circle 100 on Reader Reply Card



Safety shower

With an insulated fiberglass structure, superior fire ratings, and reliable chemical and corrosion resistance, this enclosed safety shower provides exceptional wash-down capability in emergency situations. Withstands harsh chemicals and environmental conditions; equipped with 100% vacuum-formed fiberglass surround construction that resists chemicals and corrosion. An exterior UV-inhibitor gel-coat protects from sunlight ultraviolet ray degradation, exposure to chemicals and salt-laden air environmental conditions. **Bradley Corp.**

Circle 104 on Reader Reply Card

Kwik-Clip™ rod, channel mount clips

Kwik-Clip, a new collection of non-metallic pipe hanger clips, has a convenient one-piece design, which results in significant time and cost



savings at installation. Additionally, it requires no tools for assembly, as it easily snaps on to any channel or any 3/8" all-thread rod. The Kwik-Clip is available for tubing O.D. ranges of 3/8" to 2 1/8". Its innovative design eliminates metal-to-metal contact with metal tubing, thus preventing costly galvanic corrosion. The channel mount clips (BPIC and BPSC) can be used with insulation, maintaining an unbroken barrier seal and eliminating sweating. **Cooper B-Line.**

Circle 105 on Reader Reply Card



The Bucket

The JG Speedfit Bucket is a practical, attractive, high-value "toolbox," that contains 47 pieces of best-selling fittings in one reusable 5-gallon bucket with a bucket seat. Offers safe, reliable pipe connections without tools or sealant, saving time and money. Fittings are lead free and meet the applicable UPC, IAPMO and NSF/ANSI code requirements, from an ISO 9001 certified manufacturer. **John Guest.**

Circle 106 on Reader Reply Card

HET dual flush toilet/sink

The Profile Smart with integrated sink from Caroma is a high efficiency dual flush toilet that averages



just 0.9 gallons per flush. This clever system directs fresh water through the integrated faucet for hand washing. This water then drains into the tank for the next flush. The Profile

Smart features 1.28 gallons per flush for solid waste and 0.8 gallons per flush for liquid/paper waste, WaterSense labeling, and a large trapway precludes blockages. **Caroma.**

Circle 107 on Reader Reply Card

Solar pump stations

Solar Pump Station for commercial



sized projects requiring up to 10 gpm and pumping power up to 30 feet of head is high head, high flow; pre-assembled and leak-tested with dual line flow and return connection, a powerful three-speed pump, adjustable flow meter, air vent, shutoff valves,

check valves, safety relief valve, expansion tank connection port, fill and purge valves, complete with 1" male union half threaded connections. **Caleffi.**

Circle 108 on Reader Reply Card



Rainwater harvesting

Rainwater harvesting technology is simple to install, operate, and maintain. Convenient; provides water at the point of consumption and operating costs are negligible. Water collected from the roof catchment is available for use in non-potable applications such as toilets and urinal flushing, laundries, irrigation, etc. Rainwater collected using existing structures, i.e., the roof, has few negative environmental impacts. Jay R. Smith Mfg. Co.

Circle 110 on Reader Reply Card

Stainless undermount sink

New line of stainless steel undermount sinks to the U.S. market is a



true 16 gauge stainless steel sink series in type 304 stainless steel. Offers features such as corrosion resistance, hygiene and resilience, non-chipping or surface staining and long-term value. MHS Sinks.

Circle 111 on Reader Reply Card

Tub assortment

The BASICS line is an assortment of tubs for situations when needs are



more simple, desires more modest or delivery schedule is critical. A variety of tubs in the most popular shapes and most commonly required sizes at a very affordable price that offers craftsmanship and quality. MTI Whirlpools.

Circle 112 on Reader Reply Card

★ Phc News product of the month ★



Condensing tankless water heater vents with PVC

New T-H2 high efficiency condensing tankless water heater allows installers to vent with PVC instead of stainless steel. It features a front panel LED screen that displays temperature settings and codes for easier maintenance and troubleshooting, a thermal efficiency around 92% and a maximum flow rate of 9 GPM. Four units can be linked without an additional control box, making the T-H2 ideal for light commercial and heavy residential applications. Takagi.

Circle 109 on Reader Reply Card



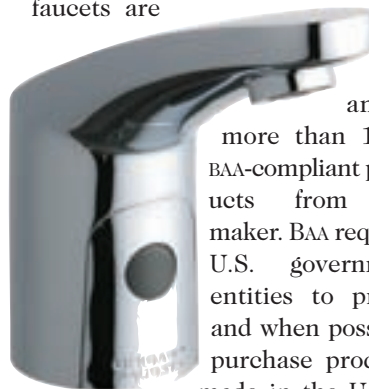
3-speed circulator

The maintenance-free SuperBruteXL for residential and commercial applications features a proven 3-speed wet-rotor design and is available in cast iron and stainless steel. Offers flexibility, ease of installation, and reduced inventory. Flow range of 0 to 65 GPM and a head range from 0 to 46 feet. Handles fluid temperatures from 36°F to 195°F with a max working pressure of 145 psi. Grundfos.

Circle 113 on Reader Reply Card

Electronic faucets

Company has more than 95% of its products that comply with the Buy American Act (BAA). HyTronic™ and E-Tronic™ (pictured) electronic faucets are



among more than 1,700 BAA-compliant products from the maker. BAA requires U.S. government entities to prefer, and when possible, purchase products made in the United States. To comply with BAA, the cost of a product's domestic components must equal more than 50% of the cost of the complete product. HyTronic faucets include traditional and contemporary style deck-mount lav faucets, and wall-mount and deck-mount Gooseneck faucets. Many E-Tronic deck-mount lav faucets also comply. Chicago Faucets.

Circle 114 on Reader Reply Card



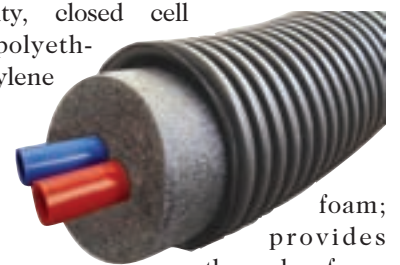
Hand shower

New ActivTouch touch-activated hand shower combines innovation and functionality to create a unique and invigorating shower experience. ActivTouch allows consumers to relax and control their shower with one hand and three simple buttons. It is designed with sleek style and made to have durable, dependent performance for years. Alsons.

Circle 115 on Reader Reply Card

Insulated PEX pipes

THERMOFLEX® is a line of highly efficient insulated PEX pipes. GTPEX® or GTPEX-R® pipes for potable and radiant heat systems handle the most intensive environments and climates. Insulated with almost 5" of high quality, closed cell polyethylene



foam; provides thermal performance and protection against water migration. Up to 300 feet long; can be customized to your specifications to increase or decrease the number of PEX pipes, or internal diameters, require specific colors or need to have electrical wires added to the system. GTGlobe Industries.

Circle 116 on Reader Reply Card

Manual Flushometers to sensor operation

The new "Sloan Retrofits Make the Road to Conversions Easy" brochure shows how manual Flushometers can be quickly converted to electronic operation to provide hygienic, touch-free convenience. Choose from solar-, battery- or AC-powered Flushometer retrofit kits for water closets and urinals. Dual-flush kits for toilets also provide an easy way to automatically save water. Sloan Valve Co.

Circle 117 on Reader Reply Card





Soil Pipe Cutter

The Press Snap™ soil pipe cutter expands the capabilities of the manufacturer's standard press tools by providing a fast and easy way to cut cast iron soil pipe. Eliminates manual ratcheting; to make a cut, the Press Snap cutter is attached to the press tool, the chain wraps around the pipe, and the user presses the trigger to make the cut. Cuts most 1½" to 4" no hub and service weight soil pipe. **RIDGID.**

Circle 119 on Reader Reply Card

Dust removal system

The TE DRS-B dust removal system lets you spend more time working

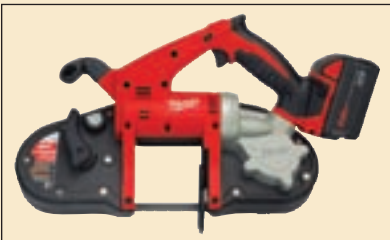


and less time doing non-productive prep and cleanup. Clips easily onto all recent demolition hammers and combihammers. Reduces the operator's exposure to fine dust. No need for plastic walls or ventilation for dust containment. Quickly assembles to the tool with a simple belt clip, no screwdriver needed. **Hilti.**

Circle 120 on Reader Reply Card

Compact band saws

Up to 45% lighter than deep cut band saws, the new compact band saws



are ideal for cutting in-place, overhead, or in tight spaces. Feature a 3¼"×3¼" cut capacity that covers the most frequent applications performed by plumbers and mechanical contractors, including single pass cuts on 3" copper, 3" angle iron and 2½" conduit. **Milwaukee Tools.**

Circle 121 on Reader Reply Card

★ Phc News tool of the month ★



Gen-Eye POD™ & MINI-POD™

The new lightweight, Gen-Eye POD™ and MINI-POD™ combine camera, reel, and monitor in an all-in-one package. You get a large 5.6" LCD color monitor protected by a padded case. It's mounted on a rugged yet flexible gooseneck that swivels to give you the best viewing angle, wherever you're working. The full size Gen-Eye POD™ features a self-leveling camera and 200 ft. of Gel-Rod® for trouble-shooting 3" to 10" drain lines. The MINI-POD™ carries 125 ft. or 175 ft. of push rod and the color mini-camera is small enough to trouble shoot 2" to 4" lines. A video out connection lets you record on an external device. **General Pipe Cleaners, a division of General Wire Spring.**

Circle 118 on Reader Reply Card

Infrared camera

The new FLIR i7 couples RESNET-compliant 1205120 (14,400) pixel infrared resolution with 2% accuracy and 0.1°C thermal sensitivity — a robust combination of capabilities to quickly detect moisture issues, missing insulation, HVAC leaks, electrical problems, thermal leaks, and numerous energy-audit-related problems. The compact FLIR i7 reveals abnormal temperature readings with crisp images displayed on a large 2.8" (71mm) high-resolution color LCD. The camera leverages the manufacturer's extensive user input with a fully-automatic design, intuitive menu navigation, and focus-free lens that make it easy to use even for newcomers to thermal imaging. **Flir Systems, Inc.**

Circle 122 on Reader Reply Card



Spring-loaded tubing cutters

Everyone needs a handy cutter (or two) like this spring-loaded tubing cutter. Easy-to-grip, snaps easily



onto copper tubing for a quick, clean cut. Just turn the cutter in the direction of the arrow and the cut will be complete in seconds. The cutter wheel self-feeds with consistent pressure as the tool is turned. Compact C-shape with no handle swing space required means this cutter is great for low clearance areas. Each cutter fits just one popular size of copper tubing and the cutter wheel is replaceable. **Reed Mfg. Co.**

Circle 123 on Reader Reply Card



Loaders

The new T650 compact track loader and S650 skid-steer loader are now available for order through local dealerships. Part of the M-Series line of compact loaders and excavators launched earlier, the loaders feature the most significant design changes undertaken by the company; enables the operator to accomplish more work through performance and durability enhancements that provide more power and keep the loader working longer, while increasing operator comfort through improved visibility and a more spacious and comfortable cab. **Bobcat.**

Circle 124 on Reader Reply Card

Drill/driver

As the latest tool in the 18v PowerMasterSeries of lithium-ion cordless power tools, the economical BS18 LT drill/driver provides advanced ergonomics plus the performance and capacity advantages of lithium-ion batteries. Fitted with the Li-Power Plus 18V, 2.6AH battery, the tool charges faster and lasts longer than other charging technologies. Air-cooled charging technology cools the battery pack to an optimum temperature level during charging reduces charging times by 30%. **Metabo.**

Circle 125 on Reader Reply Card



Camera inspection system

The EelCam EC-SSD camera inspection system is highly portable and rugged; features a digital recorder that records video of the inspection directly onto a secure digital (SD) flash card. Control unit is housed in a compact, rugged carry case which weighs only 10.4 lbs. and includes controls for microphone, lights, camera test port, and secondary video and audio outs. Date, distance and time are displayed on screen, and a keyboard for adding text is included. **Electric Eel Mfg. Co., Inc.**

Circle 126 on Reader Reply Card



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PRESSING TOOL FOR
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SERIOUS PLUMBING TOOLS™



Circle 40 on Reader Reply Card

Rainwater harvesting makes green home 'greener'

(Continued from page 16.)

storage tank would be a pivotal component of the system. The Gerachis' had planned for an elaborate backyard garden, so the capacity of the concrete storage tank needed to meet their irrigation needs. In the end, a 2,000-gallon capacity tank was buried in the ground to leave the entire backyard open for gardening.

All of the rainwater collections piping trenches

were dug and the piping was installed to the vortex filter and into the storage tank. The system was then tested and trenches were backfilled.

To prevent the concrete storage tank from "floating," a one-foot layer of concrete and a one-foot flange were poured before dirt was backfilled over the tank.

The harvested rainwater is used strictly for outdoor needs. It provides water for two hose bibbs and



High-clay-content soil created rainwater runoff problems for the homeowner; a rainwater harvesting system solved that problem and provides plenty of "free" water for a drip irrigation system to water their gardens.

several hundred feet of drip irrigation lines. Proper design for the intended use is always important in rainwater harvesting applications. As Cathy Gerachis said, "We looked at several alternatives, but they were all so wasteful. We could have drilled a well, but that would have exceeded our demand, and personally I did not like the idea of wasting water."

There are many benefits of using rainwater:

- It is free; the only cost is installation and use.
- It lessens demand on the municipal water supply.
- It saves money on utility bills.
- It makes efficient use of a valuable resource.

A 2,000-gallon capacity tank was buried in the ground...

- It diminishes flooding, erosion, and the flow to stormwater drains.
- It can be used to recharge ground water.
- It reduces the contamination of surface water with sediments, fertilizers and pesticides from rainwater run-off resulting in cleaner lakes, rivers, oceans and other receivers of stormwater.
- It is good for irrigation and plants thrive because stored rainwater is free from pollutants as well as salts, minerals, and other natural and man-made contaminants.
- It adds life to equipment dependent on water to operate, as rainwater does not produce corrosion or scale like hard water.
- It can help you achieve LEED® Green Building Rating Credit under Water Use Reduction, Water Efficient Landscaping, and Storm Water Management.

The Gerachis' home backyard now features a multitude of beautiful plants. They have vegetable, herb, and flower gardens along with various flower beds, shrubs, and trees. ■

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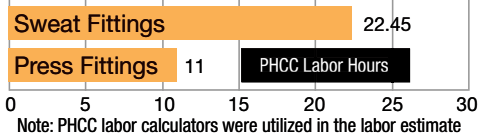
viega

Press technology... the inside story.

Why use Press Fittings over Sweat Fittings?

In the study below it took 75% less time to install a typical restaurant bathroom with press technology over sweating fittings. This will allow for jobs to be completed quicker, on time or ahead of schedule.

Press Fittings vs. Sweat Fittings

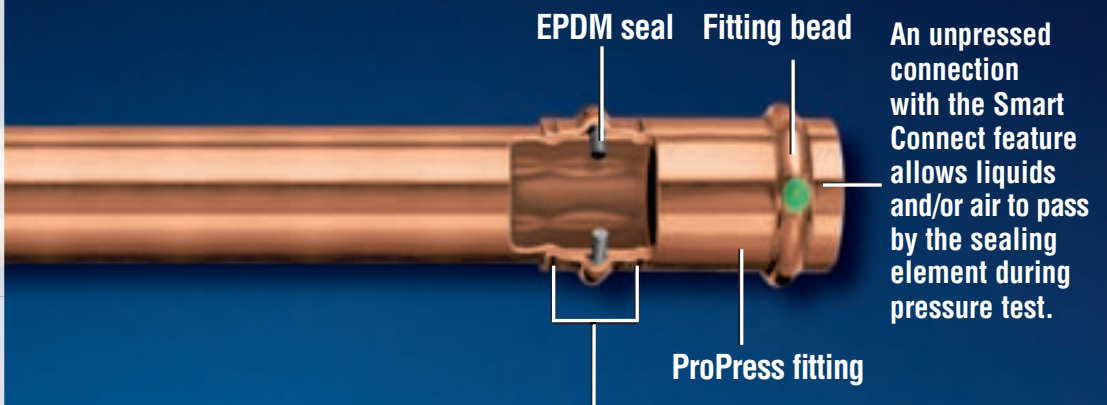


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For more information see our white paper on back or contact us at **1-800-976-9819**.

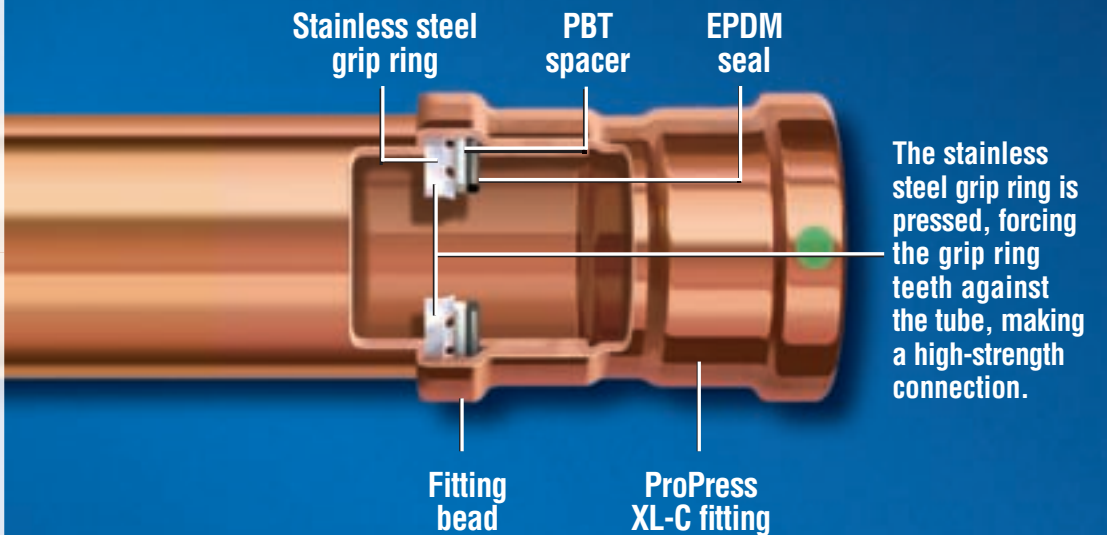
ProPress 1/2" to 2" fittings.



An unpressed connection with the Smart Connect feature allows liquids and/or air to pass by the sealing element during pressure test.

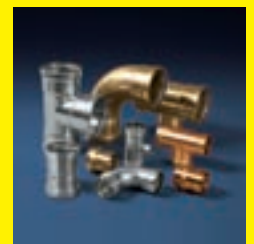
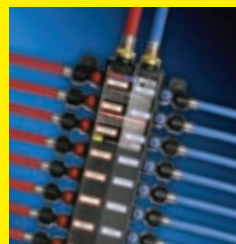
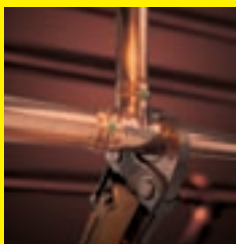
Pressed connection is pressed in front of, on top of, and behind the seal making a gas or water-tight seal. The Smart Connect feature is sealed during pressing.

ProPress XL-C 2-1/2" to 4" fittings.



The stainless steel grip ring is pressed, forcing the grip ring teeth against the tube, making a high-strength connection.

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Macerating systems, manufacturer explained

(Continued from page 38.)

ugly bucket with a noisy pump inside, which requires assembly and only has one inlet. It is just so old-fashioned. Our greywater pumps, like our macerators, are revolutionizing the market by their modern design, compact size and high efficiency.

How does Saniflo contribute to green building practices?

Saragosti: In the Saniflo range, we have two very unique products. The SANICOMPACT and SANISTAR are two self-contained macerator toilets, which gives you the ability to install a half bathroom anywhere, without

any major construction or destruction of your home. Our green toilets only use 1 gpf! With the boom of the green products all around the world, Saniflo has placed itself as one of the most innovative companies, and we know how to speak green!

Do you feel it is important to

create strong relationships within the wholesale channel? Why?

Saragosti: We are the experts in macerating toilets and wholesalers are the experts in distribution. We build it; they sell it. There is a strong relationship between wholesalers and manufacturers. Basically, one without the other won't exist. According to our distributors, Saniflo is one of their only manufacturers to have an increase in their sales every year for the past five years.

Saniflo is one of the only companies to support their wholesalers and distributors with huge advertising campaigns, strong promotions, and one of the most important reasons, a constant innovation of our products. You will see more in 2010.

Installation of Saniflo products seems to be fairly easy; convey the benefits and ease of installation of such products (pumps, toilets, etc.)

Saragosti: First and foremost you can have an operational bathroom in less than a day's labor. All our products use small diameter pipe installed above the floor. This means a big labor savings. Typically, plumbing a water supply to an area where you would like a new bathroom installed is not difficult. Getting rid of the sewage is the challenging part of the job. In some cases it may be impossible. We make that challenge or impossibility a reality without major construction. You can have the toilet, sink and bathtub or shower all tied into our system. With our systems all you need is a water and electrical supply.

Do macerating systems need to be winterized?

Saragosti: As with any plumbing fixtures, caution has to be used to prevent any freeze damage in cold climates. Winterization is quick, easy and inexpensive.

What is the useful life of a macerating system?

Saragosti: We periodically pull a unit from our assembly line to test the life expectancy. Our minimum standard is 50,000 cycles. To compute the math, if you use the toilet and sink 12 times per day, every day of the year, you can expect roughly 12 years of use from this pump. Of course, this is minimum standard. I know of units still working flawlessly after 15 or 16 years of use.

What is the warranty on these systems and can they be voided somehow?

Saragosti: Our warranty is one of the best in the plumbing business. We have a two-year warranty on all of our pumps. Abuse and improper usage will void our warranty. ■

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Say what? The more forms of communication, the less we actually ‘communicate’

BY JOHN MEISENBRINK, editor

In today’s fast-paced, high-tech world we live in, and with all the forms of communications out there, the irony is: how much do we really communicate?

Let’s see: we have cell phones, pagers, emails, texts, wireless, Bluetooth, Tweets, Facebook, LinkedIn, etc., but I feel that we actually do less communicating now than we ever have. When was the last time you had a fruitful conversation with a client, business associate or even a family member?

Sure texts and emails are fast and do the trick to a certain extent, but honestly, I haven’t really talked to some of my good friends for months, it seems. Perhaps that’s my own fault. But when we can rely on swift forms of communication, who needs the pomp and circumstance of actually verbalizing to one another, or heaven forbid, meeting face to face? Perhaps I’m a little old fashioned, but to me, it is always refreshing to get a live person on the phone instead of somebody’s voice-mail or an automated answering machine. And let’s not forget about caller ID. Ever been screened?

Gosh, remember the days when a lunch or dinner date were the norm, when hard work was done and ideas were etched on a cocktail napkin?

Remember when a handshake and eye contact actually meant something?

I was reminded of this and started thinking about the power of the “intimate conversation” theme when I was New Orleans at the PHCC Connect Show.

I ran into so many great people in this industry and thoroughly enjoyed everyone’s company.

Don’t underestimate the power of a trade show. I know the economy is forcing some financial decisions as far as traveling is concerned, but pick and choose one or two that best suits you and the ones of which you would find the most use. PHCC and QSC shows are great for contractors. This month’s Greenbuild show is always a hit. Next January, AHR hits Orlando — one of the best shows of the year! RPA is a can’t-miss for radiant gurus. And NAOHSM is the show for the oil guys. K•BIS and IBS are shows that suit the remodeler or builder. And there are a handful of very good solar shows out there — just GOOGLE them.

To reiterate: How vital is face-to-face communication? Last month I joined some of my contractor friends in Boston for a Red Sox and Patriots game. What can I say? I brought them good luck. The point here is that my host, Mark Perrone, J.C. Cannistraro, Watertown, Mass., was gracious enough to show Dick Smith, Nagelbush Mechanical, Fort Lauderdale, Fla.,



From l to r: Mark Perrone, Dick Smith and Sean McGinnis talk shop in the Plumbing Museum.

Sean McGinnis, JJM Plumbing Co., Glendora, N.J., and me, his place of employment. And we spent some good quality time in the adjacent Plumbing Museum talking about the trade. Can’t do that in a text! ■

Letter to the editor

Dear Tom Brown,

I just had to drop you a note after reading your “Don’t count magazines out,” July 2009, editorial to say, “You Rock!”

You know how I feel about print; you said it all, and then some.

Sappi, the manufacturer of coated printing paper, did a great brochure on print awhile back that had this statement:

“What makes the magazine such a perfect device? Being so targeted to a specific audience, magazines are able to speak to readers on an individual level, making it seem like — from cover to cover — it’s completely and personally devoted to the one who holds it.”

It’s much the same argument you made in your column.

And you are right: your readers DO read it. We know, because as you know, we follow up for our clients by calling your readers. They tell us what you told your readers in your editorial — that magazines reach a specific audience in a way that electronic media can only hope to.

Thanks for being a print guy!

Sincerely,
Jim Nowakowski,
President, Interline Creative Group, Inc.

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