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Fall/Winter 2013

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Gas Goes High Tech

Plus

MEET THE KITCHEN OF
THE FUTURE

UNDERSTANDING HOME
ENERGY MANAGEMENT SYSTEMS



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Always On

Backup generators can keep your home running even when the power goes out.

When it comes to power outages, natural gas remains the most reliable fuel source – and a backup generator that runs on natural gas is a great way to ensure that your home has the power to keep your home essentials up and running. Keep in mind it may take hours, days or weeks to get power back after a widespread outage.

These days, backup generators have become more affordable and consumer-friendly, offering peace of mind in the event of power outages.

“Electricity is not a luxury,” says Bob Heller, business development manager for Generac. Being without power causes minor problems, such as losing phone and Internet connections, to larger problems like food spoilage and even property damage. Individuals relying upon electricity to operate medical devices or to refrigerate medical supplies are particularly at risk during these times.

Unlike portable generators, automatic backup generators will run continuously during outages, whether it’s a few hours or several days. Because they’re fueled by natural gas, they have an unlimited power supply – whereas as portable generators have to be refueled every eight to 10 hours, and getting the fuel can be difficult during power outages.

The cost to purchase a generator has dropped, and they now can cost as little as \$1,800 for a small generator that will power part of your home. Be sure and check on installation costs, as they will vary depending upon where the generator and gas meter are located. A generator may even improve your home’s resale value, and many insurance companies offer discounts to customers with automatic home backup power systems. ■



Hot Water Heaters Go High Tech

New innovations improve safety and efficiency.

By Tonya McMurray

Hot water heaters may seem like simple, low-tech household appliances, but new innovations are turning them into high-tech tools for saving energy – and money as well as improving lifestyle.

“Historically, the choice in water heaters has been either tank or tankless,” says David Chisolm with AO Smith. “But the last two years have seen lots of advances in technology.”

Several years ago, AO Smith partnered with the United States Department of Energy to develop a condensing water heater. The resulting Vertex™ unit is a standard water heater with a burner at the bottom and a chimney with 30 feet of coiled tubing inside. Natural gas is swirled through the tube to provide better heat transfer to the hot water, resulting in 96 percent energy efficiency, compared to 60 to 75 percent

for standard gas hot water heaters, Chisolm said.

Tankless condensing units are about 95 percent energy efficient, compared to about 80 percent energy efficiency for standard tankless units. In addition to increasing efficiency, the condensing hot water unit can provide almost endless hot water.

Some hot water heaters now incorporate microprocessors that constantly monitor and control burner operation to maintain consistent and accurate water temperature levels. For example, Bradford White’s ICON™ gas powered water heater includes high performance software with intelligent diagnostics to increase the amount of hot water provided by the unit and provide tighter differentials between water temperatures. The ICON requires no external electricity because a thermopile converts heat energy from the pilot flame into electrical energy to operate the gas control

and its electronics. That means customers can enjoy hot water even if the home loses electricity due to a power outage.

This microprocessor technology gives consumers greater hot water availability at a more accurate temperature, says Charles Smith, international sales product manager at Bradford White Water Heaters.

“Turbo charged” water heaters such as AO Smith’s Effex® model push air into the combustion chamber to create a pressurized environment. The flue design incorporates tighter baffling to slow down the hot gas as it travels through the water heater, resulting in more heat transferred to the water and less wasted energy.

Integrated mixing devices increase water heater performance while also offering health and safety benefits to consumers. Mixing devices allow water in the tank to be stored at temperatures of up to 180 degrees Fahrenheit while controlling the temperature of the hot water coming out of the faucet to ensure a safe and comfortable flow of water.

The increased temperatures in the tank will kill any potential bacteria, ensuring a safer water supply. And, an integrated mixing device can increase usable hot water by 50 percent or more, says Smith of Bradford White Water Heaters. That means a smaller sized unit can provide the same amount of hot water that once required a much larger tank.

INCREASED EFFICIENCY

Just a few years ago, tankless water heaters were really the only option to increase efficiency. But because most water heaters sold are replacement units, tankless technology is not always feasible in replacement situations. Plumbing and venting requirements need to be considered when switching from tank to tankless water heaters.



With a patented air intake system, AO Smith’s Effex® pushes air into the combustion chamber and then uses tight baffling in the flue to slow down the gas as it travels through the water heater, resulting in greater heat transfer and less wasted energy.

PHOTO COURTESY OF AO SMITH



Coiled tubing inside AO Smith’s Vertex™ condensing water heater provides better heat transfer, resulting in 96 percent energy efficiency.

PHOTO COURTESY OF AO SMITH

Today's water heaters feature microprocessor controls, intelligent diagnostics, programmable setback controls, and a host of other high tech features to increase efficiency and safety.

PHOTO COURTESY OF
BRADFORD WHITE WATER HEATERS



Manufacturers have looked for ways to increase the efficiency of standard tank units. "Efficiency is a driving factor for new designs," says Smith. "Many new features help contribute to achieving higher efficiencies."

Some water heaters now come equipped with automatic flue dampers that close when the unit is in standby mode to reduce heat loss, while others have extra insulation to preserve heat. And some water heaters include both flue dampers and extra insulation.

Additional efficiency features can be included with the initial installation or added later. Programmable setback controls give homeowners a thermostat control so they can set temperatures for off peak and peak usage times.

With setback controls, the water falls below its normal set point during nonpeak times such as during the day when everyone is at work or school. The control is programmed to automatically reheat to the standard set point temperature at peak usage times such as during morning showers or in the evening when the dishwasher and washing machine may be running. Setback controls can result in up to a 36 percent energy savings.

KEEPING IT SAFE

Safety is also a top priority for manufacturers. "Although research and development doesn't necessarily revolve solely around safety innovations, they are incorporated into every new design," says Smith.

Some heaters have gas controls designed to close and stop gas flow when the pilot light goes out. Other heaters feature water leak detec-

tion devices coupled with automatic shut-off valves. The systems are designed to automatically shut off if a leak is detected, helping protect property by avoiding extensive water damage.

CHOOSING THE RIGHT HEATER

While water heater features have greatly increased, not all consumers are aware of the options available. "The challenge is most consumers buy a water heater every 10 years," said Chisolm. "We have to make sure they know they have options."

Choosing from the many features and models can be a challenge. Homeowners can find the products that work best for them if they consider the following:

- How much hot water do you need?
- Are several people taking showers at one time?
- Do you have space limitations?

"All of those things will determine which is the right product," Chisolm says.

Consumers will continue to have more choices in water heater features. The U.S. Department of Energy has mandated increased minimum efficiency standards for all residential gas, electric and oil water heaters effective April 16, 2015.

"New technology and new solutions raise the bar," Chisolm said. "Consumers will continue to see more choices with more efficiency and higher capacity." ■





What's Cooking?

AS TECHNOLOGY EVOLVES, THE KITCHEN HEATS UP AS THE HOME'S HUB.

By Cindy Baldhoff

Kitchens provide much more than just a place to prepare food; they often are the center of a home, the place where family and friends just naturally tend to congregate. Like every other area of the house, design trends for the kitchen change with the times as homebuilders and designers look for new ways to meet the ever-changing needs of each generation.

"The future of kitchens is in the integration of elements," explains Champion Platt, architect and designer. "More people are opting for eat-in kitchens and also combining kitchens with family rooms. The design of kitchens is becoming less functional-looking and becoming more appealing as an interior room that's connected to the rest of the house."

Brand-new Look

Because more time is spent in the kitchen these days – not only for food preparation but also for socializing – today's kitchens often feature freestanding pieces, like islands and segmented kitchen counters, instead of the boxy design and continuous kitchen counters that have been a staple of kitchen design in the past. Reinforcing the fact that kitchens are for living, not just for preparing meals, many of today's kitchen fixtures have more furniture-like qualities, creating a space that is warmer, more inviting and perfect for entertaining.

Expect to see that trend continue to evolve; in addition to the warmer environment created by the materials used for cabinets and counters, kitchens are becoming increasingly popular as a hotspot for artistic flourishes, from range hoods that seem to double as works of art to accent doors on cupboards to beautiful, creatively designed backsplashes. Many of the straight lines and sharp edges have been forsaken in favor of smooth curves and more circular corners, creating an environment that seems more welcoming and are just naturally pleasing to the eye. Fireplaces also have become a popular feature in kitchens, more as a visual element than for heating up the room. (See related story on page 10.)

Of course, all the design touches in the world won't make a difference if the equipment in the room isn't up to par. And in the kitchen of the future, that means smart, energy-saving appliances that are as stylish as the room they reside in – and work as hard as any chef.

As Seen on TV

"Television has created a huge interest in gourmet cooking and celebrity chefs, and this drives consumer interest in wanting to learn how to cook more gourmet dishes," explains Jane Crump, manager of communications and public relations for Viking Range.

"Cooking is now often viewed as a hobby that people pursue on weekends, on vacation or when they entertain."

She adds that today's idea of "cooking" has strayed from the traditional day-in, day-out production of meals, leaning more toward an event that is done with (and for) family and friends. "There is also a growing interest in healthier eating, so many people are beginning to search for healthier food and healthier preparations rather than eating out or picking up take-out meals every day," she says.

That change in mindset has not only changed the look and feel of the modern kitchen, but the expectations of what it can deliver. At Viking, that translates into brisk sales of its ultra-premium, high-performance gas ranges. In 1987, the company began bringing the features sought after by commercial customers into the home environment. And, in keeping with the times, they are introducing a new line of gas cooktops this fall, as well as rolling out new products later this year and into early 2014.

Overall, gas ranges are one of the most popular items for the kitchen — and new features are making them even more versatile and coveted than ever before.

"Gas cooktops have always, and will continue to, indicate the height of culinary excellence," says Katie Lee Pollack, senior associate for marketing

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at Digitas, which represents Jenn-Air. The continued interest in the kitchen has led to expanding options that incorporate the style and performance of a commercial range into residential models.

Jenn-Air's Pro-Style modular gas downdraft rangetop lets at-home chefs reconfigure their cooking surface to suit their preferred cooking style, and the indoor grill option means not having to wait for perfect weather to fire up the grill and toss on some steaks. The downdraft ventilation system also captures smoke at the cooking surface, instead of allowing it to circulate into the air.

"Additionally, their high-output burners give chefs the power needed to get water to a boil quickly or for temperature-sensitive techniques like searing and flash frying," Pollack says. And the model with a griddle and multimode convection oven offer the industry's first full-color LCD display on a range, allowing chefs to touch anywhere on the screen and control oven functions in a way that has not been possible before.

"A renewed focus on creating five-star dinners at home has made gourmet cooking much more accessible," Pollack says, adding that consumers are now buying appliances similar to those found in restaurant kitchens.

"Gas is going to continue to be the leading choice for professional and home chefs alike."

Social Networking

In addition to providing more control and flexibility in cooking options, many manufacturers are rethinking the role of the kitchen and viewing it as a social space rather than a utilitarian one – and creating appliances accordingly. The idea that people will not only cook there, but also will hang out, drink wine and coffee and mingle with family and friends is transforming how designers and consumers alike are approaching the space. Proof of the new, more socially minded kitchen is found with innovations such as the Evo Affinity 30ge Elite Cooktop, an electronically-controlled gas cooktop that provides versatile applications for both indoor and outdoor kitchens.

"It allows for a social kitchen where you can cook or entertain guests without ever having your back to them," explains Evo, Inc. founder Bob Shingler. "Typically, cooking appliances are installed

in the perimeter of the kitchen, but this is designed so you can cook and have people seated around you in a theatrical setting, creating a nice social space."

He says that today's trends lean toward kitchens that are designed for entertainment, and as part of that design, many kitchens are interconnected to other spaces in the home, opening it up further. Having artful, contemporary appliances in such a kitchen is as important as art pieces in a living area or a chandelier in a large foyer.

"Because of that, we will continue to add products that complement [the traditional kitchen appliances]," Shingler says.

Beyond the Range

Gone are the days when the standard stove/refrigerator/dish-washer combination was enough to qualify as a furnished kitchen. Today, in addition to things like built-in microwaves, the kitchen is equipped with features like built-in wine refrigerators, artfully designed range hoods and vents, and an array of sleek necessities like coffee makers, food processors and cookers to make life easier. Even kitchen faucets are stepping it up; new designs use hands-free "touch" technology – meaning you can control the water with a simple tap on the spout.

One of the hottest new trends in kitchen appliances is the addition of the pizza oven. As the name implies, it's designed to cook pizza, but according to Keith Carpenter, president and founder of Wood Stone Corporation, "You can cook anything in it. As a matter of fact, most people love these ovens because you can cook several things at the same time in the same oven but at different temperatures."

That's made possible by the different "zones" within the oven, which measure different temperatures based on how near the zone is to the gas flame. That allows for a meat zone, a bread zone, a vegetable zone, etc. — and means an entire meal can be cooked at once.

Appetite for Entertainment

As the finishing touch on the kitchen as a social space, more electronics are integrated into the kitchen than ever before. A well-appointed kitchen today will also include integrated electronics like a television, DVD player, a docking station for an MP3 player, a mounted tablet like an iPad and so much more. Combined with modern lighting that is designed specifically for different areas of the kitchen – from task lighting over work areas to more ambient lighting in social spaces – technology plays a key role in pulling the entire environment together.

The next step in this technology-driven market will be smart kitchens, which will include projection surfaces that allow you to play TV shows or movies on the wall, or even display the recipe you're using on the counter as you work. Facial and voice recognition technology will allow computer usage in the kitchen without the use of a keyboard or mouse, taking multitasking to a whole new level. ■

A Power Plant in the Basement

Micro-CHP Technology Generates Clean, Efficient Heat and Electricity.

By Tonya McMurray

Imagine a home with no energy bills. A housing development in Houston, Texas, is putting that idea to the test using combined heat and power (CHP) systems.

CHP offers a single reliable and cost-effective source for both heat and power. Long used within commercial environment, smaller systems – or micro-CHP – are entering the residential market.

In a typical residential micro-CHP system, an internal combustion engine generates heat, which is pumped through a heat exchanger and subsequently used within the home to heat both the home itself and hot water within the home. A generator driven by the engine provides power for the home's electrical needs.

For consumers, this results in greatly reduced energy costs. "The micro-CHP system doesn't burn much more gas (than a traditional gas furnace), so you burn the same amount of fuel, but you make electricity," explains Michael Monohan of Marathon Engine Systems. "It's like having a power plant in your basement."

Monohan estimates that, depending upon the size of their home

and their energy usage, consumers can save as much as \$350 to \$700 a month in energy costs because they don't have to purchase electricity and can sell any excess electricity generated back to the grid. Because of this, he said, the system often pays for itself within four to six years.

In addition to decreased energy costs, a micro-CHP system provides greater reliability. Because the home's electricity is produced on-site, homes with a micro-CHP system are not subject to power outages. And despite the power of the system, they are remarkably quiet.

"These systems have the decibel level of a refrigerator, sometimes quieter," Monohan said, "so you won't even know it's in the house."

Homes larger than 2,500 square feet in areas where electricity costs are high and heat is used for much of the year are the prime candidates for micro-CHP systems. The combination of high electricity costs, low gas prices and long heating seasons makes the Northeast U.S. an ideal environment for micro-CHP systems, according to Monohan, and most of the initial residential installations have been in the Northeast or other cold-weather parts of the U.S. and Canada.

A COOL ALTERNATIVE

But David Goswick, CEO of HOUZE Advanced Building Science, Inc., has set out to prove that micro-CHP technology can be affordable in any environment.

HOUZE (the ZE stands for zero energy) has partnered with the city of Houston to develop and build zero-energy, affordable homes in the historic, century-old neighborhood of Independence Heights, in Texas. HOUZE guarantees no gas or electricity payments for 10 years and boasts that the total cost of home ownership is less than renting an apartment.

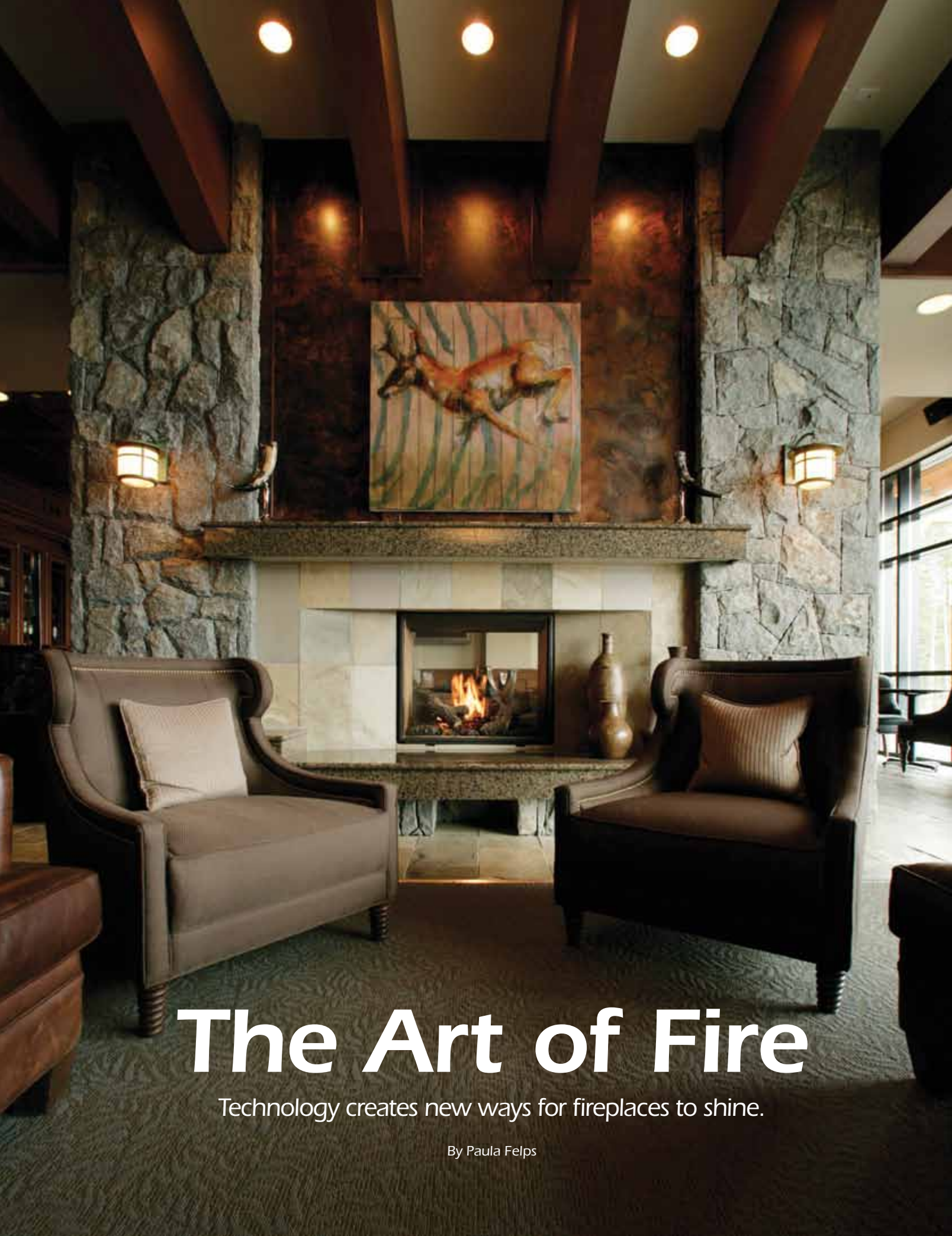
The homes feature a micro-CHP system, which is completely powered by natural gas and produces all the electricity the home needs – as well as some excess electricity that is sold back to the power grid. This money earned by selling excess electricity back to the grid pays for the cost of the natural gas to power the home.

Goswick says HOUZE deliberately chose a challenging environment to develop a proof of concept for its Zero Energy Homes. The Independence Heights neighborhood is a working class neighborhood with smaller homes in a warm climate where electricity costs are relatively low. ■



Marathon Engine Systems' ecopower micro-CHP system provides consumers clean, efficient heat and power from a single source.





The Art of Fire

Technology creates new ways for fireplaces to shine.

By Paula Felps

These days, having a fireplace isn't just about staying warm – it's about being fashionable.

"People want to do more than just heat their home, they want to make a design statement," says Greg Thomas, national sales director, USA hearth products for Napoleon Fireplaces. "The same trends that we have been seeing for the past three or four years are continuing. We've continued getting away from the square, boxy design and moving to cleaner, more linear looks. It's really becoming about having a contemporary, modern look."

The flexibility that comes with trading in messy, cumbersome wood-en logs for gas has rejuvenated the hearth industry, introducing exciting new ways for homeowners to warm their space or just create a certain ambience.

"Once the evolution of gas fireplaces began, designers really started looking at what they could do with it," Thomas says. "It was boring to look at a square box with a glass front. The Europeans started changing the market by designing more linear fireplaces, and that influence then started creeping into North America."

He says Canada has led North America in fireplace innovations and design, partly because of a more environmental mindset among home-builders, who wanted to use gas instead of wood. As far back as the 1980s, Canadian manufacturers were forsaking wood and jumping on the natural gas bandwagon. And while it has been slower to catch on in the U.S., today the market is warming up to the flexibility that accompanies natural gas, and discovering new looks and new ways to use fireplaces.

"One of the things that we see happening quite a bit, especially in high-end markets, is that someone who's building a home will put in more than one fireplace. They'll still do a traditional style fireplace in the family room, but then they'll put in some fun and funky contemporary designs in other rooms in the home."

Today, virtually every fireplace manufacturer offers contemporary alternatives to traditional fireplaces. And, according to the Hearth, Patio & Barbecue Association, about 70 percent of hearth products sold are gas-powered. Cleaner-burning, easier to use and more efficient than wood, gas is appealing to consumers from both an environmental and an economic standpoint.

The addition of direct vent technology, which eliminates the need for a traditional chimney, has further contributed to the popularity of new fireplace options. Highly efficient, direct vent fireplaces have a completely enclosed chamber that use air from the outside for combustion, then circulate radiant heat into the room through a front glass panel.

"They provide a significant amount of heat, but unlike traditional fireplaces, you're not pulling air from the room, which you've already paid to heat, and sucking it out your chimney," explains Jeffrey McClorey, owner of Bromwell's, a luxury fireplace design and accessories retailer in Cincinnati, Ohio. "So you get the look and the warmth of a fireplace without the negative loss of air. It's much more efficient."

THE SCIENCE OF DESIGN

The evolution of technology is opening the door to innovative designs and new possibilities that are pushing the industry in exciting directions. For homeowners, it has opened up design options for the home. In a time when people are adding fireplaces throughout the house, such as in the kitchen, bedroom and bathroom, the combination of art and technology is irresistible.

"Manufacturers have been able to improve the appearance of fireplaces significantly," McClorey says. "The big trend right now is toward a clean-faced design front with no louver. All you see is 100 percent glass. People love that look."

The versatility of the systems means that manufacturers can stretch their designs into linear shapes, such as Town and Country's 54-inch clean-face design.

"It lends a futuristic look that works really well in a contemporary setting," he adds. "In the U.S., that kind of design is most popular in the west, like in California or Las Vegas, where you have a higher percentage of people with contemporary homes. In the Midwest, about 90 percent of the market still wants the wood look and the majority of people on the East Coast want more traditional looks."

However, as technology continues to expand what is possible, and designers create new ways to play with fire, he expects the market to follow.

EXPLORING POSSIBILITIES

Those who are ready to explore the cutting edge of fireplace technology already have plenty of products to choose from – and the options are continuing to expand. New designs allow the placement of fireplaces

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Rocks, not logs, provide the heat in this linear fireplace by Town and Country.

PHOTO COURTESY TOWN AND COUNTRY





Swarovski crystals have taken the place of traditional gas logs in this stunning modern fireplace by Napoleon.

PHOTO COURTESY NAPOLEON FIREPLACES

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where they simply have not been possible in the past. Through-wall fireplaces can serve as a striking room divider and, as a bonus to the modern look they create, they provide heat to two rooms at the same time. The original two-sided fireplaces now have been joined by three- and four-sided models, which further open up the possibilities for both form and function.

Just as the shape of the fireplace broke out of the boxy mold to go with a long, linear look, now it is beginning to reinvent itself in other shapes. The Solaris fireplace, made by Heat & Glo, is a stunning piece of craftsmanship that uses a 32" circle mounted into the wall in what it calls "the world's slimmest see-through fireplace." The fireplace also boasts a razor-thin burner and creates an unparalleled focal point for any room.

Napoleon Fireplaces has experimented heavily with long, slim ribbons of fire instead of a full-on roaring flame, and one of its most popular items is the sophisticated Tureen, which it first introduced seven years ago.

"That was our first fire bowl, which is a stainless steel bowl with rocks that has a flame shooting through it," Thomas explains. "Once we started experimenting with some of those designs, our customers warmed up to it quickly, and we started looking at what else we could do."

A more recent addition has been the Torch, a vertical gas fireplace with halogen lights in each corner. The slim design features a reflective prism-shaped fireplace to showcase the single flame inside.

"We've had people put them in their home theaters, because it provides accent lighting in addition to the flame. They aren't great for heat, but they make a design statement."

The new fireplaces which are built for art rather than heat open up possibilities for homeowners in warmer climates or those who are more interested in accent pieces and ambiance.

"It varies, and you do have people who are focusing solely on the fireplace's heating ability," says Bromwell's McClorey. "But most homes today have such sophisticated HVAC systems that the heat component is secondary. Many people want a fireplace that puts out less heat so they can keep it burning the whole evening and not get the room so hot that they can't enjoy it."

LOGGED OUT

If anything within the hearth industry has changed more dramatically than fireplace design, it's what is burning inside them. Traditional logs are being pushed to the back burner in favor of sleeker, more design-oriented elements.

"People are using a lot of alternative materials to get that contemporary, alternative feel," says McClorey. "It might be a minimalist-looking flame or stones or glass. We see a lot of spa-type bathrooms with fireplaces that use stones instead of logs."

Gas alternatives to logs can include glass beads, gemstones, cones, cylinders, spheres and sticks made of nickel that have been welded together to create a specific design. The use of clear tempered glass has grown to include colored beads like red, blue, amber and black – and now they're being used in different combinations to create individualized effects. Some companies are creating their logos in gas-burning shapes using a variety of elements, opening the door for consumers to begin making their own design statements inside the fireplace. And while the traditional gas log insets are being overshadowed, manufacturers are experimenting with other logs.

"People are also getting into different kinds of logs, like driftwood logs in a beach home," says Napoleon Fireplace's Thomas. "Or you could use them in an outdoor fire pit for a completely different look."

As the way fireplaces are viewed continues to evolve, Thomas sees other subtle changes. They have moved outside with the growing popularity of outdoor living areas, and they also have moved higher up on the wall as their role has changed. As the designs have become more visually appealing, there's a greater push to give them a prominent spot in the home.

"We've added LED lights inside the fireplace, so you can have this as accent lighting, too," Thomas says. "It's not a traditional hearth appliance any more. It has moved from the traditional living room or family room into bathrooms and bedrooms and kitchens. This isn't just about a fireplace any longer. This is art." ■



Inspired by the setting sun, the Solaris direct vent gas fireplace takes an innovative approach to the traditional fireplace.

PHOTO ©HEATANDGLO

Counting the Cost

Home systems take the guesswork out of managing energy costs.

By Cindy Baldhoff

Energy conservation is no longer simply a matter of economics, it's also an environmental issue. And, as energy resources become even more precious in the future, learning how to better manage usage will become key for homeowners.

"For the moment, the world's energy system is working fine, but prices will go up eventually, and the environmental consequences of dirty energy from things like coal power plants are going to need to be addressed," says David Bercovich, vice president of the North American branch of AlertMe, which provides cloud-based smart home systems. "A significant amount of energy is consumed by our homes, and as a whole, we have no idea of what's driving the vast majority of that usage. A home energy management system gives people the tools to understand how their energy is being used and lets them make better choices."

Today's home energy management systems (HEMS) come in a variety of platforms and prices, and the savings they offer varies as well. The most common systems are:

Stand-alone HEMS. These are systems that are not connected to an outside network or smart grid, including do-it-yourself systems like AlertMe's Iris home control system. According to a report on home energy management from Pike Research, this segment will experience tremendous growth over the next decade. While they will be extremely popular and affordable, Pike predicts, they also are less effective than higher-end models, offering about a 5 to 9 percent energy savings.



In-home displays. Displays that are connected to a home network through Wi-Fi or ethernet can provide information on water, gas or electricity consumption, as well as monitoring how energy from an alternative source, such as solar, is producing. These displays can typically save the homeowner 10 to 12 percent on energy costs when used properly, and some can communicate with two-way smart meters being installed by utilities.

Networked HEMS. According to Pike Research, these systems are the most effective, delivering as much as a 20 percent savings in energy. The systems receive electricity pricing signals from the utility and are the costliest of the available systems.

Customers can reduce energy bills by as much as 30 percent by using a HEM, and experts predict that in the future, utility companies will introduce innovative programs that will offer economic incentives for consumers to reduce or shift energy consumption. Current platforms allow users to program the energy settings for certain times of the day, or can set it to be at certain temperatures based on what rooms are occupied. Web-based applications allow settings to be monitored and adjusted remotely.

"Home energy management systems offer someone control of their HVAC system, but it's also exciting that now someone can change the temperature from their smart phone without leaving the couch," he says. "There is clearly a market and a need for this, and we're in the early days of it. This is the path people are going to take to eliminate waste and take control of energy management."

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THERE'S AN APP FOR THAT...

Another way to manage your home's energy usage is with an app that can be used on your smart phone or tablet. Some of the available options include:

iGo Vampire Power Calculator. We've all heard about so-called "vampire energy," the energy that is consumed by an appliance when it's turned off but plugged in. The iGo Vampire Calculator calculates how much electricity you might be wasting in each room of your home. (iPhone)

Thermostat apps. Taking programmable thermostats to the next level are models like Nest and Ecobee (see sidebar), and one of the benefits is that each one comes with an app that allows users to control their home's temperature from their smart phone. (Nest: iPhone; Ecobee: iPhone, Android)

Energy UFO+. This app allows for real-time energy monitoring that offers a visual display of electricity consumption and its related cost with the goal of helping curb use through creating awareness. (iPad, iPhone)

Of course, new apps are constantly surfacing on the market, allowing users to find ways to better manage their energy usage. Some are designed to work with specific appliances, such as General Electric's Nucleus system, which is designed for homes with smart meters. Nucleus' home manager plugs into any standard electrical outlet, then wirelessly gathers power usage information from your home's smart meter. All of this information can then be viewed and managed from a computer or iPhone.

IN THE ZONE

Monitoring energy usage is one thing; managing it is another. When done properly, using a zoned system in your home can help save up to 30 percent on a typical heating and cooling bill, according to the U.S. Department of Energy.

Zoning involves having multiple thermostats wired to a control panel. The thermostats are constantly reading the temperature of their zone or areas of the home, then adjust the temperature accordingly. It's a great way to save energy by heating or cooling individual rooms based on usage, and also can be effective in controlling temperatures in rooms that may not have had a consistent temperature in the past. For example, a sun room that is cold in the winter and hot in the summer could receive extra heat or cooling as needed without having to boost or lower the thermostat for the entire home.

One of the biggest advantages of installing a zone control system is that it can be integrated into your home's current HVAC system. You can decide how many zones you want and what type of thermostat should be installed in each area. (Wireless thermostats will provide more flexibility for creating different zones within your home.) To further boost energy savings, you can program each thermostat to automatically adjust the temperatures in each zone to suit your schedule and personal preferences. ■



PROGRAMMED FOR SAVINGS

Programmable thermostats lower bills, increase energy efficiency.

In the average single-family home in North America, about half of its annual \$2,200 energy bill will be spent on heating and cooling costs. For those looking to save money, a programmable thermostat is one of the easiest ways to cut energy costs. This device, which was first introduced in the 1970s, can be found for as little as \$20 at your local home improvement store, and when used properly it can save as much as \$180 a year on your energy bills.

One of the biggest problems with programmable thermostats is that users have failed to learn how to program them properly, which prevents them from getting the full benefit of the device. Learning how to use it is the only way to truly reap the benefits of the thermostat.

The newest addition to the array of programmable thermostats is the sophisticated Nest Learning Thermostat, which has ushered in a new level of programmability. Nest uses the latest technology to study your heating and cooling patterns for a week, then creates a schedule to automatically turn down heating and cooling while you're away—and finds more energy efficient temperature settings without sacrificing your comfort level. An Auto-Away feature uses sensors to detect when no one is home, then adjusts the thermostat accordingly.

The thermostat can also be controlled remotely by a laptop, smart phone or tablet when connected to your home's Wi-Fi.



Gary's Turkey Burritos

INGREDIENTS

- 1 pound ground turkey
- 2 (7 ounce) cans hot tomato sauce
- 1 (15.25 ounce) can whole kernel corn, drained
- 1/2 small onion, diced
- 1 (16 ounce) can fat-free refried beans
- 1 (16 ounce) container fat free sour cream
- 3/4 cup shredded reduced-fat cheddar cheese
- 6 (10-inch) flour tortillas

DIRECTIONS

- 1 In a large skillet over medium high heat, brown ground turkey. Stir in tomato sauce, corn and

onion. Reduce heat to medium and let simmer, stirring occasionally, until liquids reduce (about 20 minutes).

- 2 In a separate medium skillet, heat beans over medium-low heat. Prepare sour cream and cheese for sprinkling into burritos.

- 3 One by one, heat tortillas over stove burner for 1 to 2 minutes, flipping a few times. Top with beans, then meat mixture, then sour cream and cheese. Fold over and serve while still warm.

SOURCE: ALLRECIPES.COM



Curried Pumpkin and Coconut Soup

Makes 6 to 8 servings.

INGREDIENTS

- 1 tablespoon vegetable oil
- 1 small onion, diced
- 1 clove garlic, minced
- 1 teaspoon fresh minced ginger
- 1 tablespoon red Thai curry (panang) pasta
- 2 (15-ounce) cans pumpkin puree (not pie filling)
- 1 (16-ounce) can coconut milk (reduced fat, if preferred)
- 2 cups chicken broth
- Juice of 1 lime
- 1 teaspoon brown sugar
- 1 teaspoon Thai fish sauce

DIRECTIONS

- 1 Heat oil in a small soup pot over medium heat. Sauté onion, garlic and ginger for one minute.
- 2 Add the curry paste, pumpkin, coconut milk and chicken broth and stir to combine. Bring to a boil, then reduce heat and simmer 10 minutes.
- 3 Purée with a hand-held blender. Add lime juice, sugar and fish sauce.

Note: If you're not in a hurry, you can substitute oven roasted fresh pumpkin, butternut squash or kabocha squash.

SOURCE: BEN HUTCHINSON, GREEN HOUSE TRUCK



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