Hot trends in home heat

By KIMBERLEE ROTH
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Threats of fuel price hikes are looming large in the minds of northern Michiganders.

"If you go back five or six years it seems like energy costs were down; people were concerned about operating costs, but not nearly as much as they have been the past one to two years," said Rex Ambs, co-owner of Geofurnace Heating and Cooling. "We saw a big increase in propane last year and natural gas is supposed to go up this year. We're starting to see a lot of folks getting concerned."

One fuel alternative area experts aren't seeing a rush toward is solar heat.

"It's partly because of our area," said Rick Phillips, owner of Phillips Energy. "Winter in northern Michigan isn't exactly the sunniest spot to be. There are areas where it's doing well, sure, but we haven't seen much."

One common strategy he's seeing these days is replacing old, inefficient furnaces with those that are newer and run more efficiently — into the 92 to 95 percent range. It's not uncommon for older furnaces to run in the 65 to 70 percent range, he said. He's also installing more variable burner and variable blower models, which have motors that run more efficiently at lower speeds, saving owners money not only on fuel but electricity, too.

Water source heat pumps are another alternative. Both Phillips and Ambs are seeing increasing numbers of area homeowners looking toward geothermal heat, which collects heat via a series of pipes, a "loop," from the ground or a water source and transfers it to the home. Using the same principles employed by your kitchen refrigerator, the Earth's energy is concentrated and released into the home at higher temperatures. There's no need to create heat, hence the increased efficiency. Reverse the process in summer and you have a cooling system ,too.

One of the benefits of geothermal heat, according to Ambs, includes lower operating costs.

"But we like to look at the comfort issues with both heating and cooling," he said. "You can maintain very constant temperatures in the home, as with any properly sized and installed system."

Candidates for geothermal systems include those who currently rely on oil, electricity or propane to heat their homes, since the cost of those sources tends to be higher. Homeowners can expect to spend about 20 to 30 percent more for geothermal systems, including air conditioning, than with a high-efficiency gas furnace. But they still save money, said Ambs.

"In today's world you can heat for half the cost of propane, and sometimes less than that depending on your rates."

Jerome Bufka of Maple City had his first geothermal ground water heat pump installed in 1981. A well driller by trade, "my business was water," he said.

Oil costs were high, and there was a tax rebate available at the time. He just replaced the system this past fall for about $6,000 and expects to recoup those costs, though he hasn't calculated precisely when.

"I'm sure it's a lot more efficient (than the old one). It's much quieter, and it seems to put out a lot more heat."

Bufka has a ground water heat pump at a second home too. There, he keeps the thermostat set at 55 degrees year-round.

"It's a two-bedroom house, not very big, and the electricity costs about $50 per month," he said.

To even further reduce up-front costs, Geofurnace Heating and Cooling recently patented a system that converts an existing air conditioning unit to a geothermal system. Syndex, an energy conversion module, should be hitting the market shortly.

Phillips says in addition to geothermal systems, he's seeing increasing customer interest in wood inserts, wood stoves, pellet stoves and gas stoves. Wood inserts go inside an existing fireplace and use wood as the heat source. Though not as comfortable as furnace or geothermal heat, he said, they can warm an entire home, depending on the floor plan.

Wood stoves are more efficient than in the past, said Phillips. Pellet stoves use grain-corn or pellets made from wood by-products and can work on a thermostat, shutting themselves down and relighting. Gas stoves, heaters that look like wood stoves but burn gas, are also popular, said Phillips. Customers are using them to heat the zones where they spend the most time.

Installed costs range from less than $1,000 to more than $2,000 for a gas stove; $1,500 to $3,000 for a wood stove; $1,500 to $2,500 for wood inserts; and $1,000 to $2,500 for pellet stoves.

The options consumers choose depend on their utility costs, location and the size of their home. One thing they have in common is the approach of winter in northern Michigan.

"It's best to get some of these projects done before the weather gets too nasty," said Phillips.

Kimberlee Roth is a local freelance writer.

> *"You can maintain very constant temperatures in the home, as with any properly sized and installed system."*
> **Rex Ambs, co-owner of Geofurnace Heating and Cooling, on geothermal heat**

Warm up to new and improved heating systems

The Associated Press

After the sticker shock of last year's heating season, consumers in the market for new or replacement heating systems would do well to look closely at new heating technologies.

According to the Home Service Store, the heating industry has developed highly efficient heating systems that not only cost less to operate, but keep your home far warmer, as well.

Most furnaces react under orders from a thermostat that detects when a room temperature dips below the setting dictated by the homeowner. The furnace switches on full-throttle until the thermostat recognizes the increasing warmth.

The on-again, off-again cycle can endlessly repeat itself. The process is generally noisy, and every homeowner knows the blast of air from heat registers.

Now, new model gas furnaces are designed for bursts that are longer in duration with slower fan speeds. Air pushed through the system is not as hot as the traditional short bursts. The result is room temperatures that remain constant for longer periods.

Efficiency comes from reduced flame output. The flame of gas seen in most furnaces is intense; the unit must create sizable amounts of heat to be forced out quickly by high fan speeds. The longer duration of heat cycles in new equipment means less natural gas is needed to create smaller flames.

Another benefit to new heating technologies is cleaner indoor air. Air flow in new systems is slower for longer periods. Air therefore goes through filters at a reduced rate, and because air is circulated more often over a longer period, filters scrub air more frequently.

Homeowners are also giving heat pumps another look.

Besides heating air efficiently, heat pumps can remove moisture. This makes for more comfortable conditions, even at lower room temperatures.

There have been upgrades in heat exchangers, too. The heat exchanger is the device that is heated by the gas flame. The heat is then transferred to the air. A problem for metal exchangers in older model furnaces was susceptibility to rust.

Rust inhibited the exchange of heat. The furnace worked longer —and harder—to create the desired amount of heat.

Now, heat exchangers are made of nonmetal laminates that won't rust.

The downside to the new high-tech furnaces is the limited ability of homeowners to perform even cursory maintenance. Homeowners are advised to find heating experts trained in the new technologies.

Don't take your water heater for granted

The Associated Press

Admit it — when is the last time you thought seriously about your water heater?

Not enough people do and the consequence is higher utility bills and a water heater that doesn't produce as much water as you want when you need it.

"A water heater is a significant household appliance, and people just don't give it enough consideration," said Frank Blow, a trade professional with Home Service Store.

Homeowners should pay attention to the capacity of their water heater, its physical condition and location.

Gas and electricity are two common energy sources for water heaters. A flame at the bottom of the tank heats gas units. A crown shield distributes heat between the flame and tank.

Electrical units contain heating elements in the tank. Electric heaters are more efficient than gas units, but take longer to heat water. Electrical units also cost more to operate. Efficiency means a greater percentage of energy is applied to making heat rather than going to waste.

Blow says the ability of a water heater to heat water quickly is important. Gas units can heat a full 75-gallon tank in one hour. Electric units take as long as three to four hours to heat a full tank.

New model water heaters convert about 75 percent of their energy into heat, up 10 points in the past five years. Blow says it is not necessary for homeowners to wrap heaters with insulation, a dangerous practice if insulation restricts airflow to the heater. Manufacturers now use at least 1 inch of foam insulation inside the heater to keep water hot.

Efficiency is more than insulation. Heat traps prevent buoyant hot water from escaping out the top into pipes. And until recently, water heaters "cycled" water up to 18 times a day to keep water a constant temperature. Newer models cut cycle rates in half.

Blow says typical water heater capacity has risen from 30 gallons to 75 gallons. The reason is the surge in popularity of whirlpool tubs and larger homes with more bathrooms.One-hundred-and-twenty-gallon water heaters are not uncommon.

In the eastern United States, water heaters can last up to 17 years. Water heater safety is an issue. Normal water temperature ranges are 110 degrees to 140 degrees, but can reach much higher temperatures. Most units display a warning against scalding. Homeowners can control temperatures by turning down thermostats.

Water heaters need an unobstructed supply of fresh air. Chemicals such as bleach or solvents stored nearby that are not sealed will corrode the water heater and shorten the life span. Do not store flammable liquids near the heater either.

Routine maintenance to remove rust deposits is a good idea. Accumulated rust insulates against heat transfer on the crown shield and should be removed each year. Anode rods of magnesium or zinc inside the tank will attract rust through electrolysis and should be replaced regularly by a professional.

"A good professional will make suggestions to keep water heaters safe and operational while they're doing routine maintenance," says Blow.