

Emerging technologies – rethinking the way we heat our homes

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"I love radiant floor heating," he says. "It's very comfortable. People who have visited my house have remarked on how comfortable it is. I don't know if you can understand it without experiencing it."

Mr. Lee, who is a consulting engineer on energy efficient housing, says radiant heating technology is growing. Virtually unheard of five years ago, lately he says he has heard a lot about it.

He says it's easy to install and he estimates that prices will go down as the technology becomes more common. "There's no reason why this would not be applicable to tract builders," he says. "It's a different process and contractors will need to learn how to install it, but there are no real impediments."

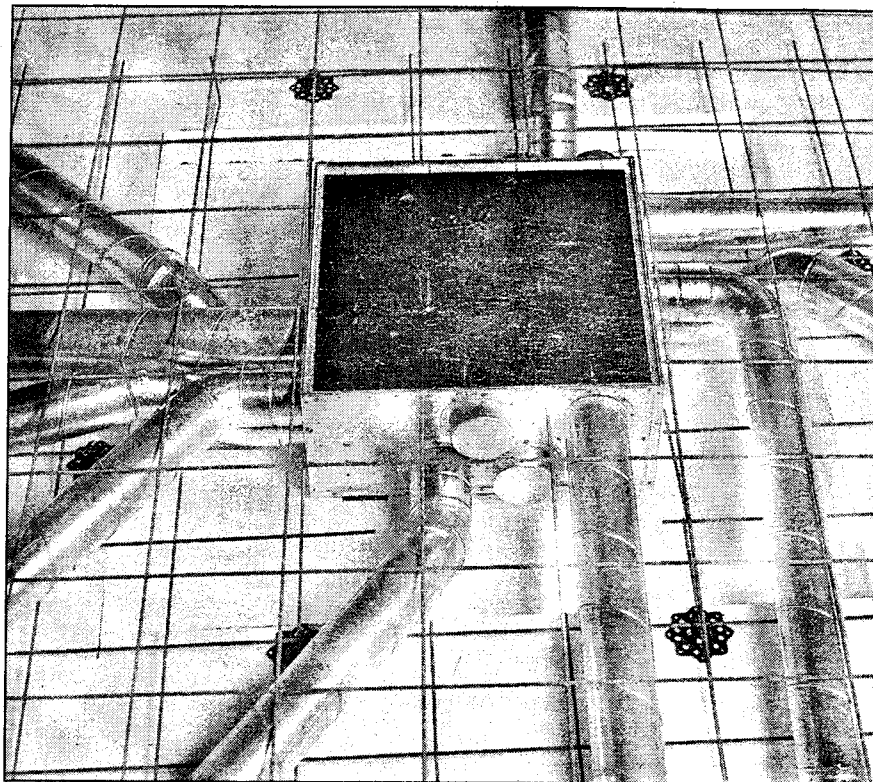
Glenn McInnes of Glengables village is also marketing a new home model with radiant in-slab heating. The Sun/Earth home in North Grenville uses oil to heat water which runs through pipes in the slab.

He says one of the reasons for the growing popularity of radiant heating is the fact piping technology has improved to a level where leaks are virtually unheard of.

But he agrees that comfort is what really sells the technology. "You can keep the temperature three to four degrees lower while still maintaining the same feel," he says. "It's also continuous heat spread out across the floor."

Intelligent furnaces: comfort and efficiency

The rebirth of radiant heating doesn't mean forced air will be disappearing from Canadian homes any time soon.



With a radiant slab-on-grade, the heater unit and connected pipes are encased in heat-retaining concrete.

Furnace manufacturers are constantly improving on traditional technology.

Mike Friedman of Dearie Contractors says that with costs dropping and building codes becoming increasingly strict, high efficiency furnaces are now found in almost all new homes.

In the future, Friedman sees a large market for 'intelligent furnaces.' While their higher cost means they have not yet caught on with many large tract

builders, their greater efficiency and ability to provide exceptional comfort levels has made them popular with small and custom builders.

Traditional furnaces are designed with one level of heat output or BTU. If you set your thermostat to 20 C in -40 C weather, the furnace will likely be on most of the time. When the weather outside is at -10 C the furnace will deliver the same amount of heat, but in shorter bursts.

Friedman explains that this is an inefficient way to heat your home. He points out that every time the furnace turns off, all of its components cool down. When it fires up again, a large amount of heat is wasted on warming the furnace itself.

With intelligent furnaces, the gas valve has a direct relationship with the thermostat. That means the thermostat tells the furnace not only when to turn on or off but how much gas the furnace should burn and how much heat it should put out. The furnace stays warm and energy is conserved.

"When it's not cold enough that the whole furnace has to be on, it brings it on half way," explains Friedman. "And why not? That way, you don't use as much energy and the (furnace components) are not heated and cooled as often."

Dave Erb of Top Hat Sales and Service, a Union Energy company that sells and installs, among other things, the Carrier MVP line of intelligent furnaces, explains that, just as a car driving on the highway is more efficient than one stuck in the middle of stop and go traffic, a furnace that sips gas is more efficient than one that burns it up in short bursts.

As well as being kind on gas consumption, the MVP also saves on electricity. Mr. Erb explains that half of the operating cost of a gas furnace is the electricity used to operate the fans and other furnace components. Like the modulating gas valve, the MVP also features a variable blower, a feature which Mr. Erb says can save MVP users up to 80 per cent on their furnace-related electrical costs.

Energy efficiency aside, Mr. Erb says

intelligent furnaces like the MVP provide a superior comfort level. They provide constant heat, he explains, meaning the home's temperature, as well as its comfort level, stays steady.

Also, the fan always starts low and increases in speed as needed. Because the furnace doesn't come on and off in short blasts like a traditional furnace, it operates much more quietly. "I have stood in front of it and I don't know if it's on or not," says Mr. Erb.

Thanks to a combination of increased environmental consciousness and stricter government legislation, Mr. Erb says the general trend in home heating is towards higher efficiency.

He says customers are more sophisticated today and are willing to take a look not only at the up front costs but the overall costs of ownership as well. "We're moving away from the disposable age," he says. "As we head into the year 2000 we are buying more products that will last, even if we pay a little more."

Mr. McInnes agrees. "I'm surprised by the amount of knowledge people have about houses and home heating," he says. "They are much more knowledgeable than they were five years ago. Not only do they know about heat but they also know about the different qualities of heat."

All that bodes well for home buyers. Mr. Erb says the added cost of energy efficient technologies like MVP is quickly recovered through reduced fuel costs. That means new home buyers can look forward not only to increased comfort and efficiency, but a lower overall cost to home ownership in the years to come.