

## **High-Tech Old-World Technology Latest Trend in Heating**

By Marge Padgitt

Sometimes old things are better than new, like old houses, historic buildings, and castles. The latest trend in home heating fits into that category. Masonry heaters have been around for hundreds of years in Europe, but are just recently catching on in the U.S. And the great thing about heaters is that they are GREEN. People needed to heat their homes in an efficient manner in olden times just as today in order to save their forests. Inefficient open fireplaces took too much of their valuable resources, so another method had to be developed. No one knows who the first mason was who came up with the idea of devising something that would retain heat for long periods of time, then radiate it into the home while using less wood, but whoever he was he was a genius.

Masonry heaters have been redesigned and altered over the years by different masons in Finland, Russia, Germany, Austria, and the United States. But heaters all have the same characteristics with complex channels to slow down and trap heat from flue gasses, and a mass of masonry to retain that heat, then radiate it to the living space over a period of up to 20 hours. By the time the products of combustion get to the exit of the flue, the smoke is white and the particulate emissions are very low. One load of wood can usually provide heating for the average size home for 8-12 hours. Compared to even the best high-efficiency wood-burning stoves on the market today, gas and oil-fired furnaces, and certainly inefficient open fireplaces, masonry heaters can't be beat.

Another benefit masonry heaters offer is that they don't require electricity, gas, or ductwork to distribute the heat. In a properly designed home with an open floor plan and the heater in the center of the home, the heat will radiate evenly throughout. Ideally, heaters are built in new home construction, but they can be added to existing homes if the layout is right. Heaters require a suitable foundation to support the massive masonry, which weighs three to six tons by the time all of the firebrick, block, cast iron doors, dampers, and exterior masonry facing is installed.

Heaters can be enhanced with heated benches to sit on, mantels, wood storage bins, and even bake ovens. Pizza and bread from a wood-fired bake oven has an incredible and unique taste that is not to be missed, and entire meals can be cooked in the oven if desired. An experienced heater mason can not only design and build the right size and type of heater for a home, but make it beautiful to look at as well. An exterior finish of soapstone, tile, sandstone, or brick can make a dramatic statement. Heater masons will work with the homeowner to come up with a custom design that suits the home, or use one of many masonry heater kits that are available from several manufacturers (usually incorporating soapstone) in a variety of designs.

Use of natural non-toxic materials and the renewable resource of wood make masonry heaters the perfect solution for a green home.

The trade is very specialized, with only a few heater masons scattered across the U.S. Fortunately, most of these masons will travel to do installations. Some have even traveled to Japan, China, and South America to build heaters. Often several heater masons will help each other out since these are big projects. In days of old, the heater masons kept their trade secret, even to the point of not leaving the room until the heater was completely finished so no one else could see how the interior was built. At that time, the livelihood of the masons was dependent on this secrecy. The trade is so skilled that the only way to learn is to do hands-on assistance with an experienced heater mason, and that is part of the reason the Masonry Heater Association was formed. The older masons do not want this to become a lost art, so they help train others. The Certified Heater Mason program was developed by the experienced MHA members in order to assure that the knowledge is not lost.

In the U.S. most people are not yet aware of masonry heaters, so it is a challenge for a heater mason to make a living out of just building heaters. Most heater masons also build other types of projects such as fireplaces, chimneys and outdoor bake ovens. Some are timber frame or log home builders or own brickyards. Most are very aware of the green building trend and are interested in sustainable living. Many heater masons will travel to build a heater because they love doing it, and because they love the satisfaction they get out of building something that is very specialized.

Pricing for heaters is what most would consider being on the high end, and a long-term investment. The average cost a homeowner may expect to pay is from \$15,000 to \$30,000, with price depending on the complexity of the heater, material costs, and labor. The expected time to get a return on your money is approximately 10 years. The time to build a completed heater may be more than four weeks, depending on how many skilled craftspeople are working. Many homeowners will elect to be an assistant on the job in order to lower their costs. In some cases, if a heater mason is traveling the homeowner will put him up at their house or a local hotel. When traveling the masons usually work long hours in order to get the project done sooner.

Mark Twain discovered masonry heaters while traveling through Europe and wrote about them: *“All day long and until past midnight all parts of the room will be delightfully warm and comfortable ... Its surface is not hot: you can put your hand on it anywhere and not get burnt. Consider these things. One firing is enough for the day: the cost is next to nothing: the heat produced is the same all day, instead of too hot and too cold by turns... America could adopt this stove, but does America do it? No, she sticks placidly to her own fearful and wonderful inventions in the stove line. The American wood stove, of whatever breed, is a terror. It requires more attention than a baby. It has to be fed every little while, it has to be watched all the time: and for all reward you are roasted half your time and frozen the other half... and when your wood bill comes in you think you have been supporting a volcano. It is certainly strange that useful customs and devices do not spread from country to country with more facility and promptness than they do.”*

Find out more about masonry heaters, including technical specifications and testing results, photos of heaters, manufacturers, and a list of heater masons, contact the Masonry Heater Association of North America through their website at [www.mha-net.org](http://www.mha-net.org) or call the executive director, Richard Smith at 520-883-0191. There is also a chat list set up for anyone interested in masonry heaters at <http://groups.yahoo.com/group/MasonryHeaters>

Marge Padgitt sits on the board of directors for the MHA and is president of Padgitt Chimney & Fireplace in Kansas City, Missouri. Her husband, Gene Padgitt, is a heater mason.