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# Here Are More Examples of Concrete and Fire Resistant Roofing in Home Building

My previous two columns about reducing your home's vulnerability to wildfires generated a lot of reader response, providing even more to write about on this important subject.

Fire resistance is personal for Rita and me, since we live in a wood frame home backing to open space which would be ready fuel for a wildfire.

I've been told that following an 1863 fire, Denver passed an ordinance requiring masonry construction. Somewhere along the line, that requirement was dropped. I wouldn't be surprised to see building codes changed once again restricting wood construction.

While there's a trend toward requiring fire suppression systems inside homes, they are designed to suppress fires which originate *inside* a home. If a fire originates externally, such systems may be of limited effectiveness in saving a structure.

Last week I wrote about ICFs — insulated concrete forms. Concrete is poured into a form which has insulating EPS (expanded polystyrene) on each side. This produces a concrete wall which has insulation pre-installed on each side of it.

A couple readers made me aware of the opposite approach, a concrete wall in which the "sandwich" has concrete on the *outside* and the expanded polystyrene on the inside.

Reader Lynn Greene invited me to visit her home in Perry Park (see picture below), southwest of Castle Rock, which was built with Ther-

momass® walls and concrete floors developed by Composite Technologies Corporation of Boone, Iowa.

Lynn's tenant told me that the energy costs peak out at about \$70 per month to heat the house with radiant floor heating built into the concrete floors. That heat is provided by a high efficiency boiler using natural gas. Large south-facing windows provide a lot of free winter time heating. (Notice the large overhangs shading the windows in summer but not in the winter.)

The Thermomass walls were poured in place, less expensive and more attractive than walls built of uninsulated concrete block. It also allowed electrical and other conduits to be built into the walls instead of surface mounted afterward.

Another "sandwich" approach is sold by a company called **RSG 3-D**, but they create panels which are assembled onsite instead of being poured in place. Also, their polystyrene interiors (which are wider) have steel connectors instead of the plastic connectors used in the Thermomass walls. That reduces the insulating quality of the wall, since metal is a conductor. I have posted some links for both these systems at [www.GoldenREblog.com](http://www.GoldenREblog.com).

Another reader reminded me that the making of concrete is a major source of carbon dioxide, a greenhouse gas. According to Wikipedia, "The cement industry is one of the two largest producers of carbon dioxide (CO<sub>2</sub>), creating up to 8% of worldwide man-made emissions of this gas, of which 50% is from the chemical process and 40% from burning fuel."

On our blog, I have posted a link to an article from *The Guardian* about the development of "green concrete" in Australia that sounds very promising. As you may know, "concrete is made from approximately 10% Portland cement, 3% supplementary cementitious inclu-

sion (for example fly ash), 80% aggregates (such as gravel and sand), and 7% water." Then it is reinforced with steel, which has its own huge carbon footprint. By replacing the steel with recycled plastic, that impact is mitigated, and according to article from *The Guardian*, the Australian company **Wagners** has created **earth friendly concrete** using blast furnace slag — an industrial waste from steel production — along with fly ash, a waste from coal power generation, as a replacement for Portland cement.

To make a concrete home truly resistant to wildfire, it is necessary to make the windows and doors and other openings fire resistant too. There is glass (with frames) rated for 20 to 180 minutes of fire resistance. See [www.fireglass.com](http://www.fireglass.com).

Lastly, one must deal with roofing. Another reader made me aware of the synthetic roofing by CeDUR which was installed on her Wheat Ridge home and which is also on Woody's Wood-Fired Pizza, above.



It looks just like a wood shake roof and is installed the same way in individual shakes, but it has the highest rating of fire resistance (Class A), earning homeowners a substantial discount on their homeowners insurance. Learn more at [www.cedur.com/fire-safety](http://www.cedur.com/fire-safety).

There are vents of all kinds not only on your roof but on soffits, foundations, eaves and gables, and they need to be protected from flying embers. **Vulcan Vent** sells vents for all those openings, "built to create a barrier against wind-blown embers and flames in the presence of intense heat." Learn more about them at [www.VulcanVents.com](http://www.VulcanVents.com).

(All links are active on our blog.)

**REAL ESTATE TODAY**



By **JIM SMITH, Realtor®**



**Golden Chamber Hosts Ribbon-Cutting at Golden Real Estate's New Downtown Office**

**Left to right:** Raheem Raji, Jim Swanson, Wendy Renee, Chuck Brown, Jim Smith, Ty Scrable, David Dlugasch, Anapaula Schock, Nola Krajewski

## Just Listed: Brick Ranch in Arvada

Few brick ranches in excellent condition like this one with a finished basement at **5930 Garland Street** are currently on the MLS. Its features include an oversized painted & finished garage, plus a 10'x20' screened patio in back. Interior photos and a narrated video tour can be viewed at [www.ArvidaRanch.info](http://www.ArvidaRanch.info). The location of this home is appealing, within biking or walking distance of Olde Town Arvada. The newly updated Ralston Creek Park is just 1/2 block away, and extensive Ralston Road shopping is also nearby. **Open house will be on Saturday, Jan. 22nd, 11am to 1pm.**



### Ground-Floor 2-BR Condo With Attached Garage

Just listed this week is **6273 Kilmer Loop #103** in Westwood Villas. With 2 bedrooms, 2 full baths, a den, a private patio and a garage accessed from the unit, this unit is perfect for a buyer looking for a home with no stairs at all. See pix and video at [ArvidaCondo.info](http://ArvidaCondo.info).



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