

Expect a Lot of Talk About Making Homes Fire-Resistant. Here's My Contribution.

The whole world has watched in horror as wind-driven fires have ravaged the Los Angeles area. According to available data, approximately one-third of the U.S. population lives within two miles of the Wildland-Urban Interface (WUI), meaning roughly 100 million Americans are situated in areas at risk of wildfires due to their proximity to wildlands. That's 45 million residences that could be destroyed quickly, given the "perfect storm" of high winds, low humidity and dry vegetation. That combination led to the loss of over 1,000 homes in the December 30, 2021, Marshall Fire.

Just like then, we are seeing pictures of homes that didn't burn amid homes that burned to the ground. One of those was a home built by architect Greg Chasen. There was even a car parked next to his house which burned so hot that the aluminum from the car flowed in a stream toward the sidewalk. A picture and video link is on our blog at <http://RealEstateToday.substack.com> which includes Chasen explaining how he designed the home to survive just such a fire.

The most important strategy in keeping a fire from consuming your house is to prevent wind-driven embers from entering the home. Most homes have ventilated attics, with soffit vents to let air in and roof vents to let the air out. Chasen's house has no attic and thus no vents.

In my Oct. 13, 2022, column (see box above right), I wrote about two homes in the Marshall Fire that didn't burn because they had "conditioned" attics with no openings for ventilation. In those homes, the ceiling

Embers will land on your roof, so a metal roof is best. There are some attractive stone-coated steel roofs that resemble wood shakes or composition shingles. Don't install plastic or vinyl gutters, and keep your gutters clear of leaves.

If you have a vented attic, you can install screens with 1/16-inch mesh that will keep 99% of embers out of your home.

Some building codes now require fire sprinklers, but it's unlikely they're installed in an unconditioned attic. If a fire enters your attic, the PVC pipes in the attic for delivering water to your top floor sprinkler heads would likely melt before those sprinklers are activated, which would be too late anyway.

Wood decks, wood fences and vegetation that touches your house can be ignited by wind-blown embers, which will then ignite your home, so consider rebuilding your deck with Class A wood, installing steel fencing, and eliminating vegetation within five feet of your home, especially junipers, which are great kindling for burning a home.

If you'll be replacing your windows, get ones with tempered glass, which makes it much more resistant to breakage from heat. And pay attention to the window frames, as I mentioned earlier in this article.

If building a new home, adobe walls are best, because "dirt doesn't burn." In my Sept. 14, 2023, column above, I reported on a Marshall Fire home that was rebuilt using "Eco-blox," a product of Lisa Morey's startup, **Colorado Earth**.

Building with dirt has a long and proven track record dating back

10,000 years, and is clearly the most proven material for building a fire-resistant home. Learn more at www.ColoradoEarth.com. Lisa built 25 homes in New Zealand before returning to the U.S. and co-authoring a book on the subject, *Adobe Homes for All Climates*. China and New Zealand are leaders, it appears, in the resurgence of this building technique. See www.EarthHomes.co.nz.

Of necessity, this article only scratches the surface of hardening an existing home or building a fire-resistant home. In researching this column, I found a website on this subject, www.WildfirePrepared.org which includes an amazingly thorough checklist of actions to take

REAL ESTATE TODAY



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My Previous Columns on This Topic (posted at www.JimSmithColumns.com)

- Sept. 14, 2023 — I Found Only One Marshall Fire Home Being Rebuilt With Fire Resistance in Mind
- Jan. 5, 2023 — Revisiting Lessons Learned from the Marshall Fire a Year Later
- Oct. 13, 2022 — Homes That Survived the Marshall Fire Were More Airtight and Had Conditioned Attics
- Jan. 20, 2022 — Here Are More Examples of Concrete Construction and Fire-Resistant Roofing
- Jan. 13, 2022 — Homes Built of Concrete Garner Increased Interest in Wake of Marshall Fire
- Jan. 6, 2022 — Last Week's Fire Disaster Is a Wake-up Call for Building More Fire-Resistant Homes

which result in the awarding of a **Wildfire Prepared Home** or **Wildfire Prepared Home Plus** certificate which is recognized by insurers in Oregon and California, but not yet in other states. Nevertheless, it is a terrific menu of actions you could take to make your Colorado home fire-resistant. A link to that checklist is one of many on our blog.

Following the 2012 Waldo Canyon fire in Colorado Springs, that city published a 50-page **Ignition Resistant Construction Design Manual**. I also added a link for that document on our blog.

In 2023, legislation created the **Colorado Wildfire Resiliency Code Board**, which is holding stakeholder meetings this January and February about their draft code. I also posted a link for that draft code on our blog.

In summary, there are two ways you could lose your home. One is from the outside, where vegetation, fences and other combustibles burn against the outside of your house. That's dealt with through the creation of defensible space. The other is from inside, where embers enter through vents, windows and other penetrations and ignite the attic or other areas of your home. Sealing those openings would help. But pay attention to both defensible space *and* sealing your home, because doing just one of those strategies won't suffice to save your home.

HB24-1091, effective Mar. 15, 2024, prohibits Colorado HOAs from banning the use of fire-resistant materials in new construction or for hardening existing homes.

PBS Show to Feature Local Net Zero Home

This coming Saturday, **January 25**, Rocky Mountain PBS will air an episode of "**Heart of a Building**," featuring John Avenson's amazing net zero home in Westminster. John's home was built in 1982 by SERI (the Solar Energy Research Institute), now NREL (the National Renewable Energy Laboratory) as a demonstration project of passive solar design, plus the limited active solar technology available at that time.



Since, then, John, a retired Bell Labs engineer, has continued to enhance the home's performance as each new technology, such as cold-weather heat pumps, was introduced.

You'll be impressed at how far John has gone to have his home be an educational installation which, by the

way, he keeps open to the public. The home has also been on multiple green home tours. On our blog, you'll find a link to the video tour I created of it.

Look for the half-hour program at **5:00 pm this coming Saturday on both Channel 6 and Channel 12**. The series is a production of Rocky Mountain PBS, but it will air nationally on all PBS stations at a later date.

Find much more on this topic, including pix & links, at RealEstateToday.substack.com

ings of the attics (the underside of the roof) were insulated with closed-cell foam — in other words, the attics were *conditioned* (heated and cooled) like the rest of the house.

Because most fires are spread by wind-blown embers, keeping a home completely sealed is essential when fire breaks out. The windows should be closed, of course, but keep in mind that the framing of *vinyl* windows could melt, allowing the glass panes to fall out. Aluminum framing melts at 1100° F, so metal or fire-rated wood framing is best. You could, by the way, install fire shutters or roll-down steel shutters, allowing you to keep your current vinyl or aluminum frame windows.

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