

NEWS

Do we live in Hades? Southern California housing is built for survival in fires



In this photo taken during the Laguna Beach fire of October 1993 — A lone house stands as smoke still rises from the ashes the morning after a devastating fire in Laguna Beach claimed more than 400 homes. This house, in the Mystic Hills area, was spared due to its construction and landscape design. The house featured double-paneled glass which helps keep heat from igniting the draperies inside the house, a tile roof sealed with concrete on the ends to keep sparks out, and stuccoed eaves to hide any exposed wood. Landscaping zones of fire resistant plants also helped. They had no tall, flammable trees near the house. (File photo by Chas Metivier, Orange County Register/SCNG)



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Twenty-four years later, Southern California firefighters still talk about the Miracle House on Skyline Drive.

The Laguna Beach street was lined with ash, rubble, and solitary chimneys; all remnants of recently burned-out homes. But in the middle of the devastation stood a single white, stucco-sided home, its walls untouched and its volcanic pumice roof unscathed.



Firefighters say the the miracle house is proof that homes — even homes built in extreme fire zones — can survive the most brutal wildfires.

“If homes are built right, you can increase the chances of survival,” said Orange County Fire Authority Capt. Larry Kurtz.

Wind-driven fires engulfed Southern California last week, from north San Diego County to Carpinteria, burning hundreds of structures and consuming more than a 160,000 acres of trees, chaparral and grasslands. Several remained active as of Saturday.



Flames consume a home as a wildfire burns in Ojai, Calif., on Thursday.

It was part of the worst fire season in state history, a year when more than 8,000 homes and other buildings have been wiped out, nearly five times more than the state average. All the devastation is prompting an old and still unresolved question: Should we build in open space in Southern California?

But even as fires take homes, other pressures prompt more construction. And a shortage of housing, affordable and otherwise, pushes development into previously wild parts of Southern California.

More than 300,000 single-family homes from San Diego to Ventura counties already exist in areas deemed to have high- to extremely high wildfire risks, according to a recent analysis of 2016 property records by Irvine-based real estate data firm CoreLogic. The replacement costs for those homes are \$141 billion.

Of those, 121,426 houses with combined replacement costs of \$64.2 billion are in fire-risk zones in Los Angeles and Orange counties. Another 102,685 houses, with replacement costs of \$35.5 billion, are in similar terrain in the Inland Empire.

That's not ending anytime soon. Tens of thousands of homes are already planned in Southern California wildland, ranging from the Rancho Mission Viejo development near San Juan Capistrano to the Newhall Ranch property in the hills and farmland west of the Magic Mountain theme park, according to company officials.

California environmental groups long have opposed urban sprawl for a host of reasons, ranging from added pollution and impacts on wildlife and habitat, to lost farm land. To a lesser extent, the anti-sprawl arguments also have included risks posed by wildfire.

“We shouldn't be putting people in harm's way by putting them in high-risk situations in these back-country areas,” said Nicole Capretz, executive director of the San Diego-based Climate Action Campaign.

“We know that fire risk increases with climate change. It's all connected,” she added. “It's absolutely essential that we have urban boundary line limits.”

It's unclear how much development has grown in Southern California's fire zones over the years. CoreLogic doesn't have historical data



But climatologist Bill Patzert, who works at the Jet Propulsion Laboratory — itself built in wildfire prone foothills in Pasadena — said for at least a half century, regional development has expanded in what he described as three main Santa Ana wind corridors: The Santa Clarita River Valley, the Cajon Pass, and Banning Pass.

"In the past 60 years, the population of Southern California has quadrupled, and people have moved into these corridors," Patzert said. "They're prime properties for wildfires."

Still, Patzert and wildfire experts say risk doesn't mean that homes shouldn't be built on urban fringes — what firefighters call the "urban-wildland interface."

The solution, they said, is to build those homes right.

Housing in fire zones should be clustered, they say, and built away from the edge of ridge lines. Homeowners or local governments need to remove nearby brush, creating low-combustible buffer zones.

And the houses themselves, when built, need to incorporate fire-resistant materials and structural techniques that make them less likely to burn. Roofing should be clay, tile or metal; eaves should be boxed in (and cleared of debris) and attics should include vents that can thwart the entrance of burning embers. Wood should not be exposed and patio decks should be made of something other than wood. Even the windows — double paned to reduce radiant heat that might ignite draperies and home furnishing — should be designed to prevent combustion.

"If you build in chaparral, you make it a solid town, with (fire-resistant) streets and houses," said Richard Minnich, a UC Riverside professor who has studied wildfires in Southern California and Baja California.

"Asphalt, concrete and irrigated lawns are not good fuel. Ornamental vegetation and houses that are built properly: They are not good fuel."

The Summit, a Pacific Palisades development in the Santa Monica Mountains north of Will Rogers State Beach, appears to be a good example of safe development, Minnich said. Surveying the homes on Google Earth, he spotted tile roofs and roads clustered to minimize the number of homes abutting open space.

To the west, Topanga Canyon looks far less protected, both Minnich and Patzert said. Homes are scattered amid chaparral, with wood decks nestled against combustible vegetation.

"Topanga Canyon should be renamed, 'Asking For It,'" Patzert said.

"When somebody has a housing development in an area that hasn't burned for 50 or 60 years, that's called asking for it. And I feel sorry for the firefighters. They want land management."

In September, Anaheim police and fire spokesman Daron Wyatt created a FaceBook Live post from the back yard of a Corona residence that he described as a great example of fire-proof construction and maintenance.

The homeowner had recently cleared brush from behind the home. When the Canyon 1 fire came through, days earlier, that home escaped unharmed while others on either side were damaged.

"The idea here is to increase the odds of survival," Wyatt said.

Orange County adopted fire-related building standards in the late 1970s for rural homes in fire-prone areas. The rules at the time called for 170-foot wide buffers, irrigation and, in the areas closest to open space, thinned vegetation.

In 1996, after the Laguna fire, the county toughened those standards, requiring homes to be constructed with noncombustible materials, boxed-in eaves and screened vents. Developers also have to make sure roads are wide enough for fire trucks and that fire hydrants have appropriate water capacity.

A 2007 helicopter ride over fire-damaged areas of Orange County's Foothill Ranch back country illustrated the results. Flames from a then-recent wildfire crept up to backyards lining a fire-blackened gully, but died as they hit a green ribbon of irrigated vegetation that surrounded the development. Fifteen older homes in a nearby canyon were destroyed in that 28,000-acre blaze, but dozens of other in Foothill Ranch were spared.

"Noncombustible fences. Noncombustible doors. One hundred-seventy feet of landscaping. That buys us a lot," Battalion Chief Brian Stephens said at the time.

The Rancho Mission Viejo site where 14,000 homes are being built along both sides of Ortega Highway was the scene the 1958 Steward Fire, which consumed almost 70,000 acres, destroyed 20 homes and resulted in one firefighter death.



In addition to fire-oriented building materials and design, and buffer zones and drought-resistant plants, the project has banished some traditional California landscaping that also, traditionally, help fuel fires. Eucalyptus trees, pines and, yes, palm trees are prohibited, Kelly said.

Builders are taking a similar approach at Newhall Ranch just west of the 6,000-acre Rye fire. Grading for the project, which will eventually have 21,500 homes, began in October.

The development includes multiple emergency entrances, homes that back up to roads rather than open space and fire-reducing, drought-tolerant landscaping, said Steve Churm, spokesman for developer FivePoint Communities.

The homes will have stucco-enclosed eaves to reduce heat and keep out embers. Patio covers will be made from Alumawood, a faux-wood product that doesn't typically burn, Churm said.

Such steps can work.

Though the Canyon 2 fire in Anaheim Hills in October took 15 homes, hundreds of others that could have been torched weren't. During that same week, however, in the northern California community of Santa Rosa, more than 3,000 homes were destroyed.

The difference, experts say, was simple — many Santa Rosa homes had wood siding.

"They can't withstand fire," Minnich said.

Still, even the best designs and materials can't guarantee a home's survival, said Los Angeles County Fire Marshall Mark Savage, who this week was helping to fight a cluster of wind-driven blazes in Southern California.

"The wind event we just had in Southern California (was) unprecedented," Savage said. "Even all the measures you could possibly put in to defend from a brush fire, when you throw in 70 mph winds, there's no stopping any of that."

But Savage said that people always are going to want to live in scenic areas, in areas that are exposed to risks, whether it be flooding or fire. Banning construction in those areas, he added, "is not reasonable."

Most of the time, Savage said, homes built to modern codes "will be defensible."

Otherwise?

"Luckily, we don't get wind events like this that often."