

25 years after the Atlas Peak fire, an engineer tackles the challenge of building a house in a high-risk area

MAY 20, 2006 12:00 AM • BY KATHLEEN DREESSEN, REGISTER CORRESPONDENT

From the hillside vantage point of the home he's building, Rick Thornberry has sweeping views across the Napa Valley, Rector Reservoir and, on a clear day, to San Francisco. But Thornberry sees something else — the threat of wild land fire.

"You can picture a wildfire roaring up this hill," said Thornberry of a steep slope that fronts his home. "From the beginning, we planned to build this house to be fire resistant with a large defensible space."

Perhaps not surprisingly, Thornberry is president of the Code Consortium Fire Protection Engineers. His life revolves around fire protection.

Thornberry purchased the 60-acre home site 19 years ago, six years after the Atlas Peak fire of 1981. That fire burned 20,000 acres in one afternoon, stretching from Atlas Peak and what is now Silverado Highlands to Soda Canyon. Thornberry's house is off Soda Canyon Road.

"There were 12 parcels here, but since the fire had cleared the landscape they hadn't had much luck selling," said Thornberry, who purchased the property at a Sotheby's auction. "We pulled the permit in 1999, thinking we'd start building slowly. The dot-com boom hit, though, and we couldn't get contractors. We finally started in earnest last October and are hoping to be complete by July."

The house is 5,000 square feet, not counting the garage.

Conscious of the history of the area and the perils of fire, Thornberry used building materials and systems to increase the structure's resistance to fire.

"We have two 10,000 gallon water tanks that are used for vineyard irrigation and fire protection," he explained. "We have a fire hydrant with a four inch diameter. The pool water can also be used to fight a fire and it has a four and a half inch fire department outlet. The house has a sprinkler system and all the materials are cutting edge stuff."

The firewise features of the home include noncombustible exterior wall coverings, decks and trim, a minimum of exposed wood, a Class A composition shingle roof and hard-wired smoke detectors. Despite the use of specialized materials, the attractive and gracious home looks no different than any other.

One of the main components of the building is fire retardant cellulose insulation by Greenfiber. The product is blown in under the roof, sprayed into the exterior walls and garage, and as pipe penetration protection between the garage and the home for

vacuum, water, sprinkler and cable wires. It is also used as sound control in interior walls and floors.

"In my work, I've learned that some of the most vulnerable areas in a home are attic vents and eaves," said Thornberry. "Usually you need vents so the attic can breathe and not get a moisture buildup. But during a fire, embers can go through the vents and set the house on fire in the most devastating way. This product absorbs the moisture and breathes without moisture condensation, so we were able to eliminate attic vents."

Thornberry is a consultant for the Greenfiber company. Greenfiber representative, Harold Shepard, eagerly demonstrated with a blowtorch how the product chars and smolders rather than ignites, thus buying time for occupants to safely exit the building.

What about attic vents in building codes?

"We have to get a variance on the current code," said Thornberry. "I had fire marshals and building officials here and they seem receptive to the technology."

Steve Jensen, a chief building official with the city of Napa, has toured the site. "This is an interesting concept from the standpoint of urban wild land situation," said Jensen. Not having attic vents "conflicts with building code, and has to be approved on a case-by-case basis. ... This is something in upcoming code that needs to be addressed."

Outside the home, Thornberry has taken additional precautions. State code and Napa Firewise, the fire education program, recommends a defensible space around homes. The general recommendation is a perimeter of 100 feet from your home cleared of dead grass, with shrubs and trees replaced with less flammable vegetation.

"Our defensible space is 300 feet, minimum," said Thornberry. "I'm removing the underbrush and thinning the trees to make it harder for fire to climb from tree to tree."

He has also given the fire department easy access in terms of pullouts and turn-around areas on the road leading to the home.

City of Napa Fire Marshal Darren Drake is impressed with the project. "He's done a good job of defensible space, putting distance between vegetation and the home," said Drake. "This is a critical point, because it gives you a better area to defend the building. Everything we preach, he's incorporated. He's taken the theoretical and given it a practical application in his home. The construction component increases survivability."

County of Napa Fire Marshal/CDF Gabrielle Avina agreed. "He's built a model home as far as Napa Firewise is concerned," said Avina. "Wild land homeowners have to be able to survive without having the fire department there immediately. From a fire department standpoint, this is the house we want to picture in our brochures. This is a good example of the community becoming involved, which is what Napa Firewise is trying to communicate. Wild land fires are a community problem."

It's a community problem that Rick Thornberry, for one, has taken to heart.

For further information about Firewise Landscaping and other fire safety tips, check www.co.napa.ca.us/firewise.

