

## Concealed Roofs

For [www.fireengineering.com](http://www.fireengineering.com)

by Gregory Havel

Photo by Author

During the past few years, we have all heard of firefighters attempting the vertical ventilation of a pitched roof; making the opening through the roof; and being unable to push down the ceiling below, because the roof from which they were working had been added above the original flat roof which was not removed.

When residences and business buildings are remodeled and renovated multiple times, the original roof over the original single-story building can be concealed under a complete second story. This creates combustible void spaces that are nearly impenetrable to firefighters, and that are channels for the travel of smoke and fire to other parts of the structure.



The photo was taken during the latest (fourth) addition to a multi-million-dollar lake home. The eaves of this part of the home and the wall were removed so that a small courtyard could be enclosed as part of an enlarged living room overlooking the lake. The original ceiling joists are shown, with paper-faced “USG Red Top”® brand insulation between them. To the right of each ceiling joist, the end of the original rafter from the original roof is visible. To the right of each rafter end the bottom of the stud (white-colored 2x4) for the second-story wall is visible. Behind this row of studs is the horizontal line of the edge of the original roof boards, which are still covered with wood shingles.



Above the opening, the trim board and rain gutter for the new roof and sun porch are visible, concealing the joists for the added second floor.

Any manufacturers or brand names noted above are used only as examples, and the websites only as sources of additional information. Reference to them is not an endorsement of either product or manufacturer.

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