Reader Feedback
The following excerpts are taken from comments in response to the JLC articles referenced.

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Letters

"METAL SIDING AND ROOFING – 10 REASONS IT'S AWESOME," BY MATT RISINGER (ONLINE, 9/11/15)

Kirk (online, 9/13/15): Metal siding is much less resistant to impact and hail damage. It also provides no thermal resistance, and on siding, the greater flexing as the material expands and contracts with the ambient temperature is more likely to create problems with weather-sealing.

Penetrations for vents and plumbing and other services require multiple hole cutters, one for the metal and another for the shear-wall material, unlike with wood or CDX plywood siding. Metal for siding offers no advantages over other materials; though for roofing, it does provide distinct advantages, and companies making solar-panel installation products have developed new attachment mechanisms specifically for metal panel roofs.

It is also misleading to talk about added fire protection with metal siding, as fire enters homes through the windows or by starting a roof on fire, with windows the primary point of entry. The siding does not have a material impact on fire resistance and is certainly not superior to fiber-cement siding in this respect.

Clayton DeKorne responds: Your assertions about the impact resistance of metal roofing are unfounded. Most 26-gauge steel roofing will qualify for Class 4 impact resistance, the highest available. While flat metal panels can be deformed by hail, the corrugated panels used on Risinger's project add stiffness; dents are rare and difficult to see.

As for thermal resistance, the combination of a light-colored panel with the radiant barrier created by an air space behind the panel over foil-faced foam significantly reduces solar gains. This is as important for exposed walls as it is for roofs—and the same rules apply. And while it's true that the thermal response for metal is higher than for wood or fiber cement, the corrugation absorbs any movement across the panel width. Panels can expand and contract in length, but this is where installation over purlins (those used to create a rainscreen and air space for the radiant barrier) come into play—the purlins deflect and rotate slightly as the panels expand and contract, causing little or no harm to the roof or siding system.

The rainscreen system behind the metal siding also means that penetrations through the siding are easier to seal. No matter how much you caulk or seal the face of your exterior skin, water will get past it. But with the rainscreen, if water gets behind the metal skin, it simply drains away.

As for fire resistance, I'm guessing you don't live somewhere prone to wildfire. Certainly embers landing on a combustible roof are a leading cause of ignition to a building from wildfire. But we're talking about metal siding *and* roofing here. And it's true, glass can explode, primarily due to a difference in temperature between the interior and a raging wildfire, particularly at the edge of glass. The University of California's Wildfire Mitigation Guide recommends installing dual-pane windows (these are pretty much standard in most climate zones now). The outer pane often serves as a thermal shield to protect the inner pane. The guide explains that "the inner pane is allowed to heat up more slowly and uniformly, and therefore may not fail even if the outer pane does."

The University of California guide also identifies the siding as a factor in mitigating wildfire:

"A common way for combustible siding to ignite by flame is contact from burning vegetation, combustible mulch, or other combustible materials (firewood, lumber, etc.) stored near the home. All of these adjacent combustible materials very likely would have been ignited by embers.

A potential contributing problem with wood and wood-based siding products is fungal decay, particularly when present along the bottom edge. When dry, decayed wood is more easily ignited."