

# Backfill

## Quake-Proof Cottage

Not long after the 2010 Haiti earthquake, Florida builder Chris Kavala was approached by the non-profit Friends of the Orphans, who were interested in the steel SIPs his company distributes and builds with. The group planned to build a cottage for victims of the disaster and needed a building system that was quake-, hurricane-, and termite-resistant and could be quickly assembled with local labor.

Steel SIPs — which have skins made of stainless or galvanized steel instead of OSB — are typically used for cold-storage facilities and other industrial applications. Kavala, however, believes they're equally appropriate for residential construction — especially in areas along the hot and humid Gulf coast where moisture, insects, and weather take their toll on wood-based building components. Steel SIPs also offer the advantage of being lighter than conventional SIPs. This was an important consideration for the Haiti project, because the site was located in a remote area two hours east of Port au Prince, and the shell — including the roof — had to be erected without any lifting equipment.

As part of the deal he struck to supply the SIPs, Kavala volunteered to oversee the project. He and a couple of his carpenters traveled to Haiti and — with the help of an interpreter — showed the four-man Haitian crew how to cut and assemble the PermaTherm panels (866/280-9351, permatherm.net). It took about 120 man-hours over six days to complete the entire structure — exterior and interior walls, roof, loft floor, and windows and doors.

On the sixth day, the keys to the front door were ceremoniously presented to the new owners, a family of eight with a 13-year-old daughter who had been paralyzed when a block wall fell on her as she tried to protect her little brother during the quake. Kavala estimates that the SIP shell cost \$10,400, with windows, doors, and fixtures adding another \$4,800 to the project. — *Andrew Wormer*



Haitian workers were trained on site to install the steel SIPs, which are made of an EPS core sandwiched between 26-gauge galvanized steel skins. Here, a crew member cuts the gable profile with a Kett panel saw.



The panels have a T&G friction-fit edge profile and attach to each other and to the galvanized metal base track with screws. The cottage was erected on the existing concrete foundation of a home destroyed by the 2010 earthquake.



A pair of 8-foot ladders was the only lifting equipment on site. Fortunately, even the 24-foot-long 6-inch roof panels were light enough to be hoisted into place by hand.



Once the shell was assembled, workers cut out openings and installed the windows and door. The panels' factory-painted coating serves as the interior and exterior finish.

Photos by Chris Kavala