



# FEMA

## *One Little Room Provides a Big Sense of Security*

In 1975, Dan and Dale Hoyt were living in Dale's grandparents' farmhouse in Missouri Valley, Iowa. One day in May, at home with her three-year-old and two-month-old sons, Dale watched a television report as a tornado struck Omaha, Nebraska, some 15 miles from their house. With Dan away at work, Dale chose to be cautious and made her way with her children into the cement basement.

Fortunately for the Hoyts, the tornado remained localized in the Omaha area. The storm was responsible for three deaths and 200 injuries, destroyed 287 homes, and caused approximately \$1.1 billion in damage. It is still regarded as one of the costliest natural disasters in American history.

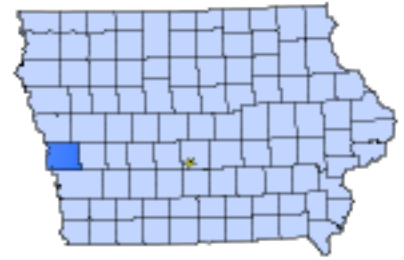
The fear and concern caused by such a devastating force of nature so close to their home and family never left the Hoyts. Years later, when they designed and built their new house, they chose to protect themselves from the eventuality of a similar event happening to them.

"When you live here in Iowa, you need protection from tornadoes," said Dale. "When we were kids, everybody just went out to their cement cellar. Because we live in the floodplain, however, we couldn't put a basement in our new house, so we needed somewhere to go to be safe."

They hired contractor Delbert Bach to lay the foundation, and design and install a safe room at grade level. Mr. Bach has been working with insulated concrete form (ICF) foundations since 1997. Using this construction technique, the basic design of the structure consists of two layers of hardened Styrofoam that enclose another layer of poured concrete, which is available in four degrees of thickness: four, six, eight or ten inches. For the Hoyts' room, they chose to go with the six-inch concrete, which when combined with the Styrofoam outer layers resulted in a wall thickness of almost one foot.

The ICFs are connected by high-impact poly-plastic fasteners. Layers of rebar rods are installed into the concrete both horizontally and vertically every 16 inches. This creates a mesh-like pattern that lends the walls of the safe room much of its strength. The door is one-and-three-quarter-inch-thick steel. It opens inward in the event of debris piling in front of the door opening, and is secured by deadbolts at the top and bottom. A peephole allows the family to see out to make sure that everything is safe.

The safe room measures seven-and-a-half feet by six-and-a-half feet. Along with a filing cabinet that holds the Hoyts' important documents and papers, they also keep the room supplied with bottled water, flashlights, batteries, blankets and other essentials that would be needed following a tornado impact. Even with these items taking space, Dale feels sure that they would still be able to fit as many as eight people in the safe room if the need arose.



Harrison County,  
Iowa



### Quick Facts

Sector:

**Private**

Cost:

**Amount Not Available**

Primary Activity/Project:

**Safe Rooms/Community Shelters**

Primary Funding:

**Homeowner**