



## One Little Room Provides a Big Sense of Security

### Full Mitigation Best Practice Story

#### *Harrison County, Iowa*

**Harrison County, IA** - In 1975, Dan and Dale Hoyt were living in Dale's grandparents' farmhouse in Missouri Valley, Iowa. One day in May, Dale, at home alone with her three-year old and two-month old sons, watched a television report as a tornado struck Omaha, Nebraska some 15 miles from the farmhouse. 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 a similar event happening to them by including a safe room.

"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 [now] 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 a contractor to design and install a safe room at grade level to their new home. The contractor they selected used an insulated concrete form (ICF) foundation construction technique. The basic design of the structure consists of two layers of hardened Styrofoam that enclose another layer of poured concrete, which, for the Hoyts' room, 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, creating a mesh-like pattern that lends the walls of the safe room much of its strength. The safe room door is nearly 2-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 7½ feet by 6½ 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.

The Hoyts paid \$17,000 for their concrete foundation, which included \$2,000 for the installation of the safe room. While it is easier and less expensive to install a safe room during the construction of a new building, it is very possible either to retrofit an existing room or to build an addition. Surprisingly, the cost of both of these options is only slightly more than it would be to construct the room during the initial build.

Over the years, at least three major tornado events have occurred within a short distance of the Hoyts. While they have been fortunate that their home and family were not affected, the sense of security and peace they gain from having the safe room in their home has had a major impact on them.

"It makes me feel better to know I have somewhere to go when there's a storm coming," said Dale. "And even if the house were to actually be struck, I'm confident that the safe room would hold up."

### Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region VII**

State: **Iowa**

County: **Harrison County**

City/Community: **Missouri Valley**

### Key Activity/Project Information

Sector: **Private**

Hazard Type: **Severe Storm; Tornado**

Activity/Project Type: **Safe Rooms/Community Shelters**

Structure Type: **Wood Frame; Insulated Concrete Form (ICF)**

Activity/Project Start Date: **05/2001**

Activity/Project End Date: **08/2001**

Funding Source: **Homeowner**

### Activity/Project Economic Analysis

Cost: **Amount Not Available**

### Activity/Project Disaster Information

Mitigation Resulted From Federal  
Disaster? **No**

Value Tested By Disaster? **No**

Repetitive Loss Property? **No**

### Reference URLs

Reference URL 1: <http://www.fema.gov/mitigationbp/index.jsp>

Reference URL 2: <http://www.fema.gov/rebuild/index.shtm>

### Main Points

No Main Points were entered.



Mr. Hoyt uses a ruler to demonstrate the nearly foot-thick width of their safe room walls.



Dan and Dale Hoyt stand on the porch of the safe room-protected home they built with their own hands.