

TULSANS  
know  
Tornadoes  
**SAFE ROOMS**  
Take Tulsa by Storm

Anyone who comes into town learns quickly that this area is prone to severe thunderstorms, high winds, flooding downpours, and tornadoes.

To make matters worse, the geology precludes most basements

Case Studies

TULSA, OKLAHOMA

When “the wind comes right behind the rain,” and tornadoes come sweeping o’er the Oklahoma plains, Tulsans are sitting ducks, and know it.

**Tulsa, Oklahoma** lies in the heart of Tornado Alley, one of the nation’s worst tornado hot-spots. Tulsa is an hour’s drive from the county that has the world’s highest incidence of tornadoes. Tornadoes with major damage have hit Tulsa on the average of every four or five years over the past 25 years. Many more tornadoes have occurred at our doorstep in the Tulsa metro area. Most of those storms have also produced multiple deaths. Most recently, the May 3, 1999, tornadoes killed 44 and decimated entire towns throughout Oklahoma.



*Rescue Specialist searches for unaccounted persons following a tornado.*

There is a need for all citizens to understand that it is possible to reduce risk and, in addition, to know what their options are. Their vulnerability also provides a rich opportunity for community education and change, because Tulsa leaders, news media, and citizens are keenly aware of the hazard and eager to embrace ways to cut disaster losses.

**A comprehensive tornado safe room program was established with a goal of a tornado safe room in every newly constructed and existing home by the year 2020.**

## The Tulsa safe room initiative is a partnership among many levels of government agencies and private citizens.

Safe rooms are anchored and armored rooms that provide shelter during tornadoes, even above ground. The concept was introduced in October 1998, by the Federal Emergency Management Agency (FEMA) and the Wind Engineering Research Center of Texas Tech University, with the release of FEMA Publication 320 *“Taking Shelter from the Storm – Building a Safe Room Inside Your House.”*



*Multi-use safe room and closet*

Under Project Impact, Tulsa brought together a coalition of partners including FEMA, the Oklahoma Department of Civil Emergency Management, the Tulsa Public Works Department, Home Builders of Greater Tulsa, State Farm Insurance, and other community partners. The coalition agreed on building and construction standards, permitting, certification and compliance procedures, and public education and awareness activities, including workshops.



*Oklahoma tornado damage*

On May 3-4, 1999, severe thunderstorms and tornadoes caused numerous casualties and extensive damage in Oklahoma. On May 4, 1999, the President declared a major disaster in response to Oklahoma Governor Frank Keating's request for Federal assistance.

In response to the human devastation experienced in these storms, the State of



Oklahoma, working with FEMA Region VI staff proposed an innovative initiative focused on saving lives through building technology. Through the Hazard Mitigation Grant Program (HMGP), Oklahoma was provided with the opportunity to take advantage of construction technology in tornado-prone areas. The state used the HMGP for a safe room initiative providing grants to homeowners to build a safe room in their house. Thousands of Oklahoma homeowners now have safe rooms as a result of this program, and Oklahoma has laid the foundation for other states to implement similar initiatives.

## Tulsa Builders Launch First Safe Room Subdivision

Eleven major Tulsa builders have launched their first safe room subdivision in a new upscale residential development called Legacy Park.

“Legacy Park’s first phase will contain 120 homes, but ultimately the 300-acre site could well include 1,000 safe room homes that will help shield owners from the devastating effects of windstorms and tornadoes,” said developer Lindsay Perkins.



*Entrance to Legacy Park Subdivision*

“It is believed to be the first safe room subdivision in Oklahoma and perhaps the first the nation financed entirely by private builders. They purchased all 120 lots and pledged to build safe rooms in all model and speculative homes,” Perkins said. He is president of the Oklahoma State Home Builders Association and active in the National Home Builders Association.

“The goal is to spread the word and help improve tornado safety,” said builder Bill Rhees. “The idea is that a two-by-four flying at 100 mph will not penetrate this shell.”



See the  
**Storm-Safe Room**  
in this home!

Sponsored by:

- Tulsa Project Impact Program
- Home Builders Association of Greater Tulsa
- Federal Emergency Management Agency
- Partnership for advancing Technology in Housing

for more information call  
the Home Builders  
Association of Greater  
Tulsa at  
663-5820

**One of the homes in Legacy Park —  
“Safe room subdivision!”**

Eleven homes in various stages of construction and containing four different safe room models were open for viewing during the dedication.

“The stormy weather we had during the dedication was fitting,” said Josh Fowler, HBA Executive Director. Project Impact and the Home Builders Association are

working to prepare citizens for emergencies such as tornadoes, high winds, and flooding, and to encourage demonstration projects showing ways to mitigate disaster losses. Fowler quoted the warrior general, Hannibal, whose army was thwarted by a mountain, “If we cannot find a way, we will make a way.”

## Volunteer Built Wheelchair-Accessible Safe Room

Area companies and associations volunteered to build a wheelchair-accessible safe room in a north side home, as part of a program to make Tulsa safer during tornadoes and other severe weather emergencies. The construction took place at the home of Jack and Aurora Helton, longtime community volunteers. Jack Helton, 72, recently lost both legs to diabetes.

The idea and design for the volunteer project came from Eric Miller, an architect with BSW International, and chairman of Tulsa Project Impact's Vision 2020 tornado project.

"The Heltons have given so much to the community over the years," said Josh Fowler, Executive Director of the Home Builders Association of Greater Tulsa who is spearheading the project. All the labor and materials have been donated. Main Street Properties donated the insulation and concrete form building blocks for the eight-by-ten ft. room.



*Above: Volunteers hang sheetrock.*

*Right: Billy Cassetty, Eric Miller, and Aurora and Jack Helton look over plans for the wheelchair-accessible safe room being built at the Helton's house.*





### The Tulsa Safe Room Project shall be deemed a total success...

- When most people in town know about safe rooms, understand that it is possible to reduce tornado losses by safer construction and other techniques, and are motivated to seek ways to reduce risk and curb losses.
- When builders, developers, engineers, architects, and other construction professionals embrace the concept of safer shelter, understand its market value, and voluntarily and eagerly offer options to buyers and remodelers.
- When the construction trades and vocational schools routinely provide training in safer construction techniques.
- When governments seek means to encourage safer shelter and construction through tax incentives or other means.
- When public institutions and private businesses enthusiastically seek ways to provide safer shelter throughout the entire community.
- When all Tulsans have equal access to safe shelter, regardless of their income, neighborhood, race, and fitness or disability.
- When safe sheltering options are incorporated routinely into multiple-use schemes such as recreation rooms, so that they not only reduce risk but furthermore contribute every day to the livability of our community.



This success will be enhanced if, in the process, we are able to provide good examples for other communities and our state and nation.