I Built a Safe Room in My Basement...No Really, I Did!
Presentation Overview

- Why would someone do this?
- What was I thinking?
- How did I do it?
- What lessons I pass on?
- Closing thoughts
Preparedness Check
Earthquake Risk?
Tornado Activity
Wind Zones

Figure 1.4. Wind zones in the United States

Wind Zones in the United States:
- **Zone I**: (130 mph)
- **Zone II**: (160 mph)
- **Zone III**: (200 mph)
- **Zone IV**: (250 mph)

Other Considerations:
- Special Wind Region
- Hurricane-Susceptible Region

Design Wind Speed measuring criteria are consistent with ASCE 7-05:
- 3-second gust
- 33 feet above grade
- Exposure C
Why?

May 31, 2012
Personal Experience

✦ April 3, 1974
  - Tornado outbreak
  - 148 confirmed tornadoes
  - Over 300 dead

✦ Childhood memories
  - Parent’s basement
  - Not really that safe

✦ Father
  - Oklahoma
  - Infant brother was killed
Take Action

❖ Build a Tornado Safe Room
  • Unfinished, walk-out basement
  • FEMA designs
  • Shouldn’t be too hard, right?

Taking Shelter From the Storm:
Building a Safe Room For Your Home or Small Business
Includes Construction Plans and Cost Estimates
FEMA P-320, Third Edition / August 2008
Getting Started

- Download *Taking Shelter From the Storm* (Pub 320)
- Determine if safe room is even appropriate
- Select a location
- Chose applicable design

![Possible safe room location](image)
Design Features

- **Walls**
  - 3 concrete walls
  - Double 2x4 studs 16” on center
  - Everything is tied together with hurricane strapping
  - Sill plate is anchored to floor, end stud is anchored to concrete
  - 3/4” plywood sheathing & 14 gage steel
Design Features

- Ceiling
  - Double 2x6 ceiling joists
  - Same plywood & steel sheathing
  - NOT connected to floor joist of first floor

- Door
  - Metal, exterior door
Time to Start Spending Money

- Building materials
  - 2x4 framing studs (regular & treated)
  - 2x6 ceiling joists
  - Anchor bolts & hurricane ties
  - ¾” plywood sheathing
  - 14 gage steel (not easy to find)

- Do I have the right tools? (of course not)
  - Framing gun
  - Hammer drill, bits, etc.
  - Step ladder
So, I Have a Safe Room, Now What?
Other Preparedness Considerations

- Loss of power
- Food/Water
- Cooking, other living needs
- Set expectations
- Inform County EMA
- How long will I need to survive?
  - 3 days
  - 2 weeks
  - Months
Lessons Learned

- Incorporate into the house design
- Measure twice, cut...never
- Take your time
- Ask for help
- Slow and steady wins the race

- Cost to date: ~$900*

*materials only
Closing Thoughts

- People that live in glass houses...
  Shouldn’t throw stones
Closing Thoughts

- People that have **tornado safe rooms**...
  ...can throw whatever they want!
Need to install a Peephole