DOME TECHNOLOGY®

Gymnasium/Tornado Shelter

Webb City High School | Webb City, Missouri, USA

This facility provides a top quality gymnasium for both school and athletic events.

Both students and the community benefit from this ICC 500 structure that can protect 2,600 people.

The level of protection plus cost effectiveness are two advantages of domes as safe shelters.

Scope of Work:

- ● Value Engineering
- ● Structural Engineering
- ○ Mechanical Engineering
- ○ Electrical Engineering
- ○ Civil Engineering
- ○ Foundation Construction
- ○ Stem Wall Construction
- ● Dome Construction
- ○ Additional Steel & Concrete Construction

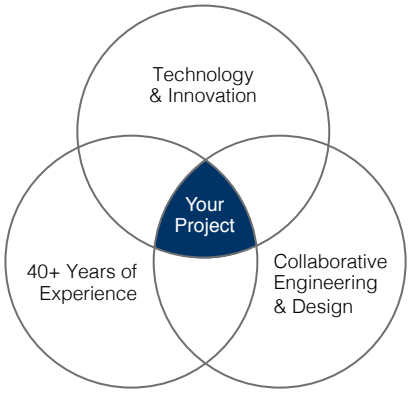
○ None ◒ Some ● All

Dimensions & Features:

- 1 Dome: 54.8m (180ft) Wide x 8m (28ft) Tall on a 9.2m (30ft) stem wall
- Low-Profile Dome Design
- Post-Tension Elevated Ring Beam
- Integrated Parapet Gutter

Qualifications:

- ICC 500 Design Standard
- Meets FEMA 361 Criteria
- Missle Impact Test (Fema 320 & ICC 500, Protocol 4, Tornado)
- All Weather Construction
- ACI Certified Shotcrete Nozzlemen
- Type 1 (Fire Resistant) Construction
- Exceeds IBC Seismic Criteria



Overview:

On May 22, 2011, an EF5 tornado ripped through Joplin, Missouri, earning the dubious title of deadliest U.S. tornado in 68 years. Since then, the Webb City High School gymnasium was built to act as a community safe shelter available 24/7 and host sporting events in the meantime. In July 2014, Dome Technology completed the shelter that meets ICC-500 specifications and can protect 2,600 people.

When planning, the school district's first priority was student and staff protection, but including the community was also a must. The district applied for and received seven FEMA grants to offset costs for seven shelters, four of which are available for community use. According to Dr. Kevin Cooper, Webb City R-VII School District assistant superintendent, the Webb City High School gym is one of the largest safe shelters in the state.

The district capitalized on the safe shelter by finishing it as a gymnasium. "The building of the gym was more of a luxury. It was not a must that we build the gym; we just had the opportunity to build a very large facility that would serve the essential purpose of community protection, while at the same time giving our students and athletes a great place for competition and for physical-education classes," Cooper said.

The gym has been used as a safe shelter three times. The first time, a tornado warning was issued with a minor touchdown two miles away; approximately 1,000 citizens and students sought shelter in the gym, and many didn't realize how aggressive the storm was because they couldn't hear the wind or feel the structure move, Cooper said. That level of protection plus cost effectiveness are two advantages of domes as safe shelters. "Depending on the needs, I would strongly recommend the dome concept. By using a dome, we are able to build a much larger facility on the budget that was provided," he said.

"Some people consider Dome Technology a construction company however we like to consider ourselves a protection company. Whether our structures are protecting grain, fertilizer, sugar, or our most valuable asset… our kids, Dome Technology engineers and builds to safeguard and protect your most valuable assets," Bradley Bateman, CEO, Dome Technology.

Read more about this project at: link.dometechnology.com/6830