

An Architect's Assessment on Storm Shelters

"Do it right – whether you're an owner or architect, people are relying on you."

When it comes to storm shelters, skimming building codes and cutting corners are not actions you want to take. We talked to an architect in the industry to learn more about storm shelters and their applications in K-12 schools.

Q: What resources would you suggest to help people learn about the importance of storm shelters in K-12 schools?

A: [ICC 500 Standards](#) for the Design and Construction of Storm Shelters and [FEMA P-361 Standards](#) for Safe Rooms for Tornadoes and Hurricanes are great places to start.

You must meet the FEMA P-361 Standards if you're using [FEMA funding](#) for your storm or safe room shelter.

Q: Are there any educational programs for people interested in learning more about storm shelters in schools and businesses and the codes that surround them? How about for people using, installing or maintaining storm shelters?

A: There currently aren't any formal trainings for storm shelters and their installation and upkeep. However, a few organizations have created seminars and webinars to help educate architects and building owners on the importance of storm shelters and their requirements.

Q: What guidance do you offer designers of schools and storm shelters before, during, and after storm/hurricane season?

A: Storm shelters and doors must be in working condition all the time. Don't put a storm shelter door in a position where it has to cycle frequently each and every day. This can lead to damage or a door not being operable when you need it to be in an emergency. Also, get up to speed on what the codes and wind zone (and wind load requirements) are for your location.

Q: Are there any changes to the ICC 500/FEMA P-361 standards you feel are relevant in the latest iteration?

A: There were many changes to the latest edition of the ICC 500. The required peer reviews had the most proposed revisions. Chapter 4 had several revisions, Chapter 5 was reworked completely, Chapter 6 includes exceptions for the fire separation requirement, and Chapter 8 directly addresses rolling and sectional door testing, just to name a few.

Q: What do you think is often overlooked or missed in storm shelters for K-12 schools?

A: An understanding of just how important following the codes and standards in ICC 500 and FEMA P-361 is. These standards aren't created just for FEMA funding. These documents were created to guide architects and building owners in order to save lives.

Additionally, people don't often think about the three phases involved with storm shelters:

- Pre-event
- Actual event
- Post-event

During the pre-event, you have to consider how you're going to get your building occupants to the shelter and what they'll have to do to get there. We frequently see storm shelters that aren't connected to the main building and are a separate structure entirely. Think about teachers guiding students who may be scared to begin with to the storm shelter, and then put that together with the fact that they potentially have to navigate there through torrential rain, large hail, and strong winds. It would be better if the storm shelter were connected to the main building to avoid putting people through more stress before the event.

The post-event may be even harder than the event itself. Whether it's a hurricane or tornado, you have to picture what the aftermath will look like. There could be live electrical lines down on the ground. Debris such as glass and nails from damaged structures could be everywhere. School officials often have plans in place for what happens before and during a storm or other severe weather event, but no plans for shelter occupant evacuation.

Q: Any closing thoughts?

A: My advice is to do it right. Whether you're an owner or an architect, people are relying on you and your storm shelter to keep them safe in an emergency. Understand what your role is in protecting people, because it's a big one. If you don't want to do it right or don't know how, either seek help from an experienced storm shelter designer or leave it to someone else.

To learn more about storm shelters and their requirements, visit our ebook: cornelliron.com/docs/default-source/e-books/stormshelter-e-book.pdf