

# The Safe Room: Building Just One Part

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Just this week, sixteen people died in the American Midwest from tornados. The design of safe rooms and disaster resilient structures are quickly becoming an increasing concern in the construction of new homes in areas of the country where these types of storms are known to occur. Including a safe room in a new residence is still not common for many builders and architects, but there are suggested plans and details that can be found through the Federal Emergency Management Agency (FEMA). A design-build studio that occurred in the summer of 2013 utilized the safe room as the starting point for a series of constructions that sought to understand not just the suggested details and configuration of a typical safe room, but also to suggest other opportunities to deploy the room throughout a new or existing house. This project also addressed several different questions about the nature of the typical design build studio.

Often, the projects associated with design-build studios in the academy focus on the construction of a completed building, the penultimate result of student efforts. For several reasons this may not be a reasonable deliverable, especially when time and money are concerned. There are other ways that design-build projects can be instrumental in a larger construction process. It can focus on the process, on a component or even on an assembly. How this smaller element is then incorporated into a larger construction process, or can be repeatable is a potentially important strategy.

This design build studio spent five weeks working on the design and construction of three prototypes for safe rooms to be utilized in an existing house. The first task was to understand the FEMA standards, what is the goal of the shelter? How large should the shelter be to accommodate an average family? Are there other locations in the house where it makes more sense to locate the shelter? Interestingly, there were several design problems that needed to be addressed in both drawing and model. The studio settled on a base shelter, an 8' x 8' x 8' cube. The other two options studied a more compact under stair shelter and an exterior, partially underground shelter. Students created drawings and proposals, and then built mock-ups of all three versions of the shelter detached from an actual building. The building phase of the project allowed for mistakes to be made, details to be understood in three dimensions and construction sequencing to be resolved. As a form of applied research, the safe room design has been incorporated into two other proposals for competitions and has the potential to expand outward into other projects.

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