AUBURN HIGH SCHOOL

Auburn, Alabama

PROJECT INFORMATION

3 buildings - Academic Building, Performing Arts Building, and Athletics Building

350,000 SF

Storm shelters located in each of the three buildings

Tornado Wind Speeds - 250 mph

Shelter design based on ICC 500-2008

CHALLENGE

With an ever growing population, the City of Auburn required a new high school for students. The project consisted of a 100 acre site with three main buildings. The owner preferred to have a storm shelter located in each of the three buildings, each with their own challenges. The Academic Building shelter was located in the lowest level of the 4-story building. The Athletic Building shelter was located in the competition gymnasium. The Performing Arts Building shelter was located in the backstage area of the theater. The design challenges and the stringent requirements of the ICC 500 made this project an exciting challenge for LBYD.

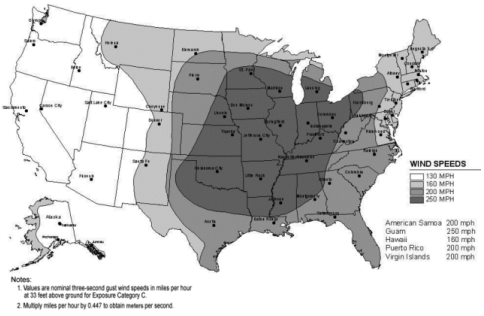

FIGURE 304.2(1) FROM ICC 500-2014

OUR SOLUTION

LBYD's experience with different storm shelter systems and the ICC 500 code allowed us to attack each of these storm shelter designs with confidence. For the Academic Building shelter, our team designed the main building shell structure to handle the extreme forces associated with the tornado. In doing so, the cost for the storm shelter itself was reduced as it did not need to be designed for the collapse load of the rest of the building structure. For the Athletic Building, we designed the 40'-0" tall shelter for the tornado loading while trying to maintain the preferred aesthetic of the architect and owner. We accomplished this by creating an efficient structure that still met the stringent requirements of the code. Finally, the Performing Arts Building shelter was designed for some unique loading associated with the backstage functions of the theater. In addition to the design of the shelters, we were able to navigate the code-required 3rd party peer review process with limited comments and revisions, along with assisting the contractor in the construction administration of the design.

LBYD ENGINEERS