

Hardened Fire Station Speeds Emergency Response

Hancock County, Mississippi

BAY ST. LOUIS, Miss. – When it was time to build a new fire station, Hancock County, Mississippi used lessons learned from Hurricane Katrina to dictate a number of factors for the structure.

In Hancock County, there were hardly any structures south of I-10, which crosses east and west through coastal counties, that escaped flood damage from Katrina. Nearly 60 percent of all homes in the county were uninhabitable.

The Bay St. Louis city government realized the benefits of building hardened structures that can serve as refuge for first responders in this coastal community that is prone to hurricanes and severe storms. All city buildings except Fire Station No. 1 were destroyed during Hurricane Katrina. While rebuilding, officials decided to make the fire station even better.

“The central location and hardened construction would provide our firefighters and other first responders a safe place to ‘weather’ the storm without fear of flooding, damage to the station, or damage to our apparatus,” said Fire Chief Pamela SanFillippo.

The new 13,200 square foot facility is near two major thoroughfares - U.S. 90 and I-10. In emergencies, the fire station can accommodate up to 68 first responders.

“Some of the energy efficient features are the ground source heat pump system, emergency power generators, portable water cistern, and rainwater harvesting systems to fill trucks,” said Allison Anderson, project architect.

“We were adamant about building back a more resilient community and not suffer the same damages over and over,” said City of Bay St. Louis Mayor Les Fillingame. “It took a lot of negotiations with FEMA and other agencies to make it happen.”

The city took advantage of FEMA’s Hazard Mitigation Grant Program (HMGP) that provides cost-sharing grants to State and local governments for implementing long-term hazard mitigation measures. The program is designed to reduce the loss of life and property, lessen the impact to local communities due to natural disasters, and enable recovery following disasters.

Total cost of the fire station was \$5 million. The city applied for and secured a \$2.3 million grant through HMGP. FEMA awarded 95 percent of the total grant and the city was responsible for the remaining 5 percent. HUD’s Community Development Block Grant program funded the remaining costs.

The city also relied on FEMA publication “Design and Construction Guidance for Community Safe Rooms” that describes how to build community safe room. It served as a guideline for the construction of the Bay St. Louis Fire Station and other “hardened structures” that provide life safety



and protection from extreme wind events. The publication includes building instructions on how to meet or exceed state code for shelters, such as:

- All safe room buildings should be located outside flood-prone areas and elevated above Base Flood Elevations.
- Design buildings along coastal areas of the Atlantic and the Gulf Coast to withstand wind speeds in the range of 200 to 250 miles-per-hour to provide near-absolute protection.
- Roof decks, walls and doors must resist wind-borne debris.

No such structures existed when Hurricane Katrina made its way through the Mississippi Gulf Coast and the city in 2005. The Category 3 storm destroyed many cities and communities with wind speeds of up to 110-miles-per-hour as well as flood water up to 25 feet.

The new fire house was completed in 2010 and its first test came two years later when Category 1 Hurricane Isaac inundated some of the city's low-lying communities with storm surge of more than 10 feet. The slow-moving storm deposited nearly 20 inches of rain in some areas over the course of just a few days.

Fortunately, there were no worries of flooding at Fire Station No. 1 on Main Street - it was high and dry.