House Built to Code Survives Katrina

Full Mitigation Best Practice Story

Hancock County, Mississippi

Bay St. Louis, MS – John and Allison Anderson moved back into their home 50 days after Hurricane Katrina struck their community on August 29, 2005, with a 29-foot storm surge and reported winds of 130 miles per hour (mph). Their house was standing and soon inhabitable, unlike many others in the community, because the couple had followed building practices and mitigation techniques advocated by the Federal Emergency Management Agency.

When they decided to build their new home on the Mississippi Gulf Coast, the Andersons wanted to build a house that was safe and storm-resistant. They built to the 2003 International Residential Code. Bay St. Louis and Hancock County have since adopted this code. “My house is a testament to the building code,” asserted Mr. Anderson.

The Andersons describe the code as tying all structural elements to the earth in a continuous path. Mr. Anderson credits the survival of his house primarily to the 2-by-6-inch exterior wall framing. He also used 2-by-4-inch horizontal timbers, or purlins, to attach the corrugated metal decking to the roof.

The home was built to withstand minimum wind gusts of 130 mph. A grass roof above the carport added weight to the structure, which was another mitigation technique. Other benefits of green roofs include a reduction in storm water runoff, enhanced thermal insulation, and increased roof life span.

Located half of a mile from the coastline in Bay St. Louis, the Andersons’ house is a two-story, 3,125 square-foot contemporary structure with a fiber cement siding exterior. The house is located in a C-zone, as designated by the National Flood Insurance Program (NFIP), which means that the area is outside of the 500-year floodplain and at low to moderate risk of flooding.

The Anderson family called it a “mandatory vacation” when they were required to evacuate as Hurricane Katrina approached the coast. They calmly waited out the storm at a relative’s house in Hattiesburg, Mississippi. Later, they sat in disbelief as they learned about the destruction that had taken place in their hometown.

Anxious to see their home, the Andersons returned as soon as it was safe to enter their neighborhood. They discovered that seven feet of water had entered their house, but it was still standing. Although mud covered the first floor, they were glad to find everything intact in the upstairs rooms.

Four windows were destroyed on the first floor. Other windows survived the high winds and debris impact because Mr. Anderson had boarded up the windows with exterior half-inch oriented strand boards before evacuating. Kitchen appliances and walls below the water line were damaged, and there was minor damage to the roof, but there was no other structural damage.

The Andersons immediately began cleaning and repairing their house, but could not live in their home for 50 days because there was no electricity, water, or telephone service. Mr. Anderson’s decision to use polished concrete for flooring on the first level proved to be a wise idea, because clean up and repairs were easier and cheaper than if it had been necessary to remove and reinstall carpet.

Hurricane Katrina demonstrated that building strong can save homeowners money. Mr. Anderson pointed out that the cost of building the new house was $115 per square foot, while repairs to the damaged first floor cost only $55 per square foot.

“There are other mitigation techniques I may eventually incorporate. Hurricane shutters would be nice because the boarding up process takes a lot of time,” Mrs. Anderson said. “The walls are really tall and it would be really nice to push a button and have the shutters come down.”

The Andersons were happy to be back in their home. Many of their neighbors have not been able to return because their houses sustained substantial damage or were destroyed.

“It’s really hard on everyone especially the older [people] in the neighborhood who lost their homes,” Mrs. Anderson said. The couple stressed that with proper mitigation techniques, homes in hazard-prone areas can survive.

Activity/Project Location

Geographical Area:	**Single County in a State**
FEMA Region:	**Region IV**
State:	**Mississippi**
County:	**Hancock County**
City/Community:	**Bay Saint Louis**

Key Activity/Project Information

Sector:	**Private**
Hazard Type:	**Hurricane/Tropical Storm**
Activity/Project Type:	**Building Codes**
Activity/Project Start Date:	**01/2005**
Activity/Project End Date:	**07/2005**
Funding Source:	**Homeowner**

Activity/Project Economic Analysis

Cost:	**Amount Not Available**
Non FEMA Cost:	**0**

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster?	**No**
Value Tested By Disaster?	**Yes**
Tested By Federal Disaster #:	**No Federal Disaster specified**
Year First Tested:	**2005**
Repetitive Loss Property?	**No**

Reference URLs

Reference URL 1:	**http://www.fema.gov/rebuild/mat/mat_fema499.shtm**
Reference URL 2:	**http://www.msema.org**

Main Points

- To help make it storm-resistant, the Andersons built their house to the 2003 International Residential Code.
- The home was built to withstand minimum wind gusts of 130 mph.
- All structural elements are tied to the earth in a continuous path.
- The first floor flooded during Hurricane Katrina, but the family was able to make repairs and move back into their home.

The Andersons' house in Bay St. Louis, MS.

Neighbor's house was destroyed by Katrina.