



Model Houses Demonstrate Strong Building Techniques

Full Mitigation Best Practice Story

Multiple Counties, Mississippi



Biloxi, MS - In their efforts to help in the recovery process from Hurricane Katrina, the Community Education Outreach (CEO) Group of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) designed two scale model houses using the 2003 International Building Codes with input from the Mississippi Emergency Management Agency (MEMA).

The FEMA model houses demonstrate construction techniques that will help buildings withstand Category 3 hurricanes or other severe weather events.

"The mitigation model homes play an important role in educating the public about better building techniques," said Nick Russo, federal coordinating officer for Mississippi recovery. "An important goal of the initiative is to demonstrate the correct use of the appropriate materials that will make structures safer and more storm resistant," said Russo.

One design, The Waveland, is elevated and illustrates home construction that protects against storm surge and wind. It was named for Waveland, Mississippi, which was almost completely destroyed by Hurricane Katrina's wind and record storm surge.

The second is a slab-on-grade prototype model, The Hattiesburg, designed to mitigate wind damage. It is named for Hattiesburg, Mississippi, located 65 miles inland, which suffered substantial wind damage during Katrina.

Both models were designed by FEMA engineers to provide visible examples of mitigation construction techniques and materials, including hurricane ties for bracing joints and full-sized timbers angled to withstand winds.

"We're hoping that people will use these construction techniques to build back stronger," said Herman Price, who works in the CEO's Special Project division.

Local high school vocational students, home improvement stores, building officials, FEMA and the Federal Alliance for Safe Homes are involved in constructing the scale prototypes. Materials for the project have been donated by building supply companies in Mississippi.

"We want to work with students at the beginning of their careers so these mitigation practices will not be foreign to them, so they will understand that a coastal area like this needs construction built to a different standard than inland homes," said Dan Bass, a FEMA mitigation architect who has been working with Harrison Central High School students.

Mississippi coastal high schools with a focus on building construction in their vocational programs have agreed to build more mitigation house models as school projects. Currently, Harrison County Schools including D'Iberville High School are implementing the project in their vocational technical curriculum.

"The goal is to inform builders, homeowners, students and the public about the importance of building a hurricane resistant structure," said Martha Lu Nunn, FEMA Community Education and Outreach supervisor. "Students who are assembling model houses today are the builders and homeowners of tomorrow," said Nunn.

The models are being displayed throughout Mississippi counties hit by Hurricane Katrina. In July, the model was featured at the joint Alabama-Mississippi Hurricane Workshop, in Mobile, Alabama, where FEMA director David Paulison was very positive about the project. The model house was also a popular attraction at the Mississippi 2006 Governor's Conference held mid-August in Biloxi, where delegates to the conference inspected the model and asked questions about its construction. Other display venues have included Edgewater Mall in Biloxi, and Singing River Mall in Gautier, Mississippi.

Activity/Project Location

Geographical Area: **Multiple Counties in a State**

FEMA Region: **Region IV**

State: **Mississippi**

County: **Hancock County; Harrison County; Jackson County**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Hurricane/Tropical Storm**

Activity/Project Type: **Education/Outreach/Public Awareness; Training**

Activity/Project Start Date: **04/2006**

Activity/Project End Date: **Ongoing**

Funding Source: **Local Sources**

Activity/Project Economic Analysis

Cost: **Amount Not Available**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Yes**

Federal Disaster #: **1604 , 08/29/2005**

Federal Disaster Year: **2005**

Value Tested By Disaster? **No**

Repetitive Loss Property? **Yes**

Reference URLs

Reference URL 1: <http://www.msema.org/>

Reference URL 2: <http://www.fema.gov/plan/prevent/nhp/index.shtm>

Main Points

- FEMA has designed two scale model houses using the 2003 International Building Codes with input from the Mississippi Emergency Management Agency (MEMA).
- The FEMA model houses demonstrate construction techniques that will help buildings withstand Category 3 hurricanes or other severe weather events.
- Both models were designed by FEMA engineers to provide visible examples of mitigation construction techniques and materials, including hurricane ties for bracing joints and full-sized timbers angled to withstand winds.
- Local high school vocational students, home improvement stores, building officials, FEMA and the Federal Alliance for Safe Homes are involved in constructing the scale prototypes. Materials for the project have been donated by building supply companies in Mississippi.



Mr. David Ladner, Vo-Tech instructor and students built mitigation model



Director and FEMA employees at Mitigation Model