

# Mitigation best practices



FEMA

## Shutters Provided Peace of Mind During Storm

Hospice patients felt safe and secure



Hurricane shutters above windows of Patient Care Unit

**HOUSTON** – With wind gusts approaching 100 mph, Hurricane Ike roared into Houston as a Category 2 storm, peeling sheets of steel off skyscrapers, downing power lines and trees, blowing out windows and dumping mountains of debris. As the storm raged, patients at Houston Hospice were securely tucked away behind hurricane shutters.

“They say ‘run from the water and hide from the wind.’ That’s what we chose to do,” said Christine Blackmon, vice president of finance for Hospice. We bunkered in, so to speak, and pulled those shutters down so that the patients would be protected.”

Hurricane Ike’s ferocious winds hurled tree branches through the air and tore down concrete fencing at the facility. Patients remained unscathed.

Located in the Texas Medical Center in Houston, the Hospice provides inpatient and respite care at its 25-bed inpatient facility. It provides dignified and compassionate care for people in the last phase of a terminal illness so they can live as fully and comfortably as possible. The goal of hospice care is to enable patients to continue an alert, pain-free life and to manage other symptoms so their last days may be spent with dignity.

### Why Are Storm Shutters Needed?

Shutters are an important part of a hurricane-resistant or storm-resistant homes. They provide protection for glass doors and windows against wind-borne debris, which is often present in coastal storms.

### What Types of Shutters Are Available?

- Temporary plywood panels
- Temporary manufactured panels
- Permanent, manual-closing
- Permanent, motor-driven

### More Information

Mitigation Success Stories:  
[www.fema.gov/plan/prevent/bestpractices](http://www.fema.gov/plan/prevent/bestpractices)

Fema Publications:  
[www.fema.gov/library](http://www.fema.gov/library)

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Christine Blackmon demonstrates operation of roll-down shutters

Houston Hospice saw the need for hurricane shutters following damage to the Patient Care Unit, incurred from Tropical Storm Allison.

“We didn’t have any broken windows. We actually had some wind-driven rain that came in through the windows in some of the patients rooms,” said Blackmon. “It wasn’t anything severe. We were able to put towels down and get the rooms cleaned up.”

In January 2003, the hospice received a \$131,250 grant from the Federal Emergency Management Agency (FEMA) through its Hazard Mitigation Grant Program (HMGP) for the placement of storm shutters on the windows and doors of its Patient Care Unit. HMGP pays 75 percent on approved projects that will prevent or reduce damage from storms and other natural hazards. Administered by the State, these grants are made available for both public and private projects.

Hurricane shutters remain the most economical solution to protect window openings in a storm, although impact-resistant windows are increasingly popular. According to the Hurricane Research Division of the National Oceanic and Atmospheric Administration, people who live in coastal areas from Texas to Maine, and in other hurricane-prone areas, will find shutters an excellent in-



Electric roll-down shutter on door

vestment for protecting against wind and wind-borne debris. These shutters protect not only the windows and doors they cover, but also possessions and people inside. Once a window or door has been breached by hurricane-force winds, tremendous pressure is brought to bear on interior walls. Upward pressure on the building’s roof can lead to roof failure, which exposes the entire contents of the building to the storm. Shutters are a first line of defense against the hurricane. Much of the damage in Tropical Storm Allison could have been prevented by well-installed hurricane shutters over windows and doors.

“For us, the shutters were a critical need. With the winds blowing the way they were, uprooting trees, sailing tree limbs and tearing down cement fencing, the shutters provided a peace of mind,” said Blackmon. “The patients were able to feel safe and secure. They didn’t have to be concerned about things coming through the windows.”

Blackmon continued, “In some cases even watching what was going on could be very frightening for patients in that stage of their life. So the shutters gave both the patients and staff a feeling of security. We were grateful to FEMA and the State when they approved shutters.”

Story and Photos by Bonnie Hanchett - FEMA

## Shutters Styles



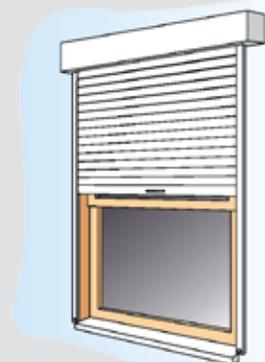
Colonial shutters



Bahama shutter



Accordion shutter



Roll-up shutter