

Mitigation best practices



FEMA

KPRC weatherman builds above Hurricane Ike storm surge

New home designed to fit into historic Galveston neighborhood



Billingsley's house, right, was built with hazard-mitigation features in 2007 but blends with the historic houses on his Galveston neighborhood.

GALVESTON, Texas — “Build high and build strong. Build back better and smarter.”

That's the advice from Frank Billingsley, chief meteorologist for KPRC-TV, to survivors of Hurricane Ike and to his thousands of viewers in Galveston and Houston and elsewhere along the Texas Gulf Coast.

“I can't control the weather, but I can be there to warn people when their lives or property are in danger, and that's what

makes my job worth it to me,” Billingsley said. “I feel like I have a chance to give back to the world.”

KPRC provided 24/7 coverage for more than a week starting before Hurricane Ike came ashore in Galveston at 2:10 a.m. Saturday, Sept. 13. During much of that time, Billingsley was on the air every half hour for 8- to 10-minute segments. From Friday to Saturday noon, he went 24 hours straight, closed his eyes for two hours, and then continued till midnight.

At a glance

Frank Billingsley, chief meteorologist for KPRC-TV in Houston, knew the hurricane risks when he chose to live in one of Galveston's historic neighborhoods, so he took special care to make his home safe and secure. He has wise advice to help others stay storm-safe, too.

A Houston weatherman since 1982, Billingsley is fiercely dedicated to keeping his viewers safe. “This is what Frank does,” reported writer and real estate agent Alice Melott in the Recovery 2008 issue of *The Islander Magazine*. “The way he provided ... a true service to the people of Galveston may well be remembered as one of the most humane acts of journalism most of us have ever seen.”

During the long hours that Billingsley was reporting on the storm — on the air, in the air, on the phone, in the street — he knew his own Galveston Island house was at risk. At the peak of the storm, flood water surged into his neighborhood from the bay.

After the storm, officials blocked re-entry to the island for 10 days for safety reasons. It was 2½ days before Billingsley knew that 30 inches of water surged into his lower-level garage, but otherwise left his house largely unaffected.

In the meantime, rumors and fears began to abound among displaced residents frantic to learn what was happening with their homes and their futures. Billingsley stepped into the information void, Melott said.

“Once he was cleared to fly there, Frank not only spent four hours reporting from over the West End, he did so with residents on the phone who were guiding him through their neighborhoods and narrating as he flew in for the close-ups,” Melott wrote.

“Over a thousand requests came in to the station that afternoon, and Frank was able to visit with about 40 property owners,” Melott continued. “As they saw their homes for the first time, each owner choked with emotion. Some homes were in remarkably good shape; a few were flattened. It was real reality TV, and it was riveting.”

Billingsley spent days walking through the devastation on Bolivar Peninsula and on Galveston’s east and west ends, reporting what he saw to anxious evacuees.

When it comes to safe building, Billingsley practices what he preaches. Billingsley’s own home includes hazard mitigation features that helped it survive the storm.

Located in the heart of the city of Galveston, Billingsley’s house blends current building technology with an old-fashioned appearance. Built in 2007, the home complies with the city’s up-to-date building codes and incorporates many flood prevention features. But it looks old, like the Victorians that line his street, survivors of countless storms in Galveston’s prized historic neighborhoods.

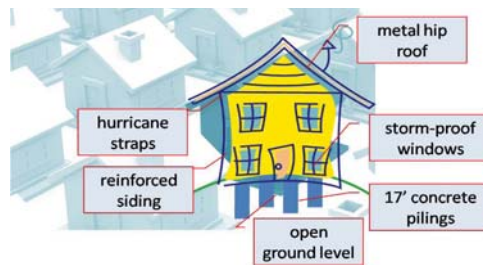
Billingsley’s first floor is 16 feet above sea level, well above the storm surge. “The surge brought 30 inches of water into our lowest level, the garage and foyer entrance, so we had to replace sheetrock and air conditioner units there,” Billingsley said. “But the rest of the house survived fine. That’s why the habitable space was built high.”

He continued, “It has a hip roof with class-4 storm-resistant shingles, hurricane straps, and small windows that are rated for 145 mph wind. These windows were not even covered, and none of them had a leak or a crack. They did great. No shingles were compromised, and there were no roof leaks.” Billingsley’s current home is the second he has had in Galveston. He built the first one in 2003, on concrete pilings, at 17 feet above sea level. “It has a hip roof with grade-4 shingles,” he said. “Hurricane shutters guard

the windows and doors. There are 1,300 hurricane straps, both outside and inside. Two feet from the corners, the studs are 8 inches on center rather than the standard 16 inches. It has breakaway walls that broke away in Hurricane Ike. Everything on the ground level washed away in Hurricane Ike, but the house is strong and sturdy, with nothing more than a few shingles missing.”

He is committed to helping others stay storm-safe and to giving survivors information they can use, as they build and rebuild, to make their homes and businesses more likely to survive.

“Don’t just follow code but think it through, yourself,” he said. “If code calls for elevation, why not use concrete pilings instead of wood? If code is 125-mph windows, why not build for 145-mph? If code is 36-inch exterior hurricane straps, why not interior also? If code is 8 feet above sea level, why not build to 16 feet?”



Sketch by Alice Melott, courtesy of *The Islander Magazine*.

Billingsley urged his viewers to “put a pencil to what building just a little stronger will do for your house, versus what repair costs will be next time.”

There will be a next time, the weatherman warned. “Learn and change – don’t think for a minute that the worst has come, because for many of us Ike could have been much worse, and we have to rebuild for even worse storms,” he said. “There’s the chance – probably a good chance – for fewer problems next time, if we build back better and smarter.”

Frank Billingsley’s 10 tips for building a coastal house

Use cement pilings. A little pricier, but they stood up to the surge.

Build 17 feet or higher above sea level (on Galveston Island). Be high enough to escape the surge plus tide and waves.

Use an unadorned hip roof. A hip roof slopes downward in all directions toward the walls, without gables or dormers. Don’t give the wind anything to grasp.

Consider using a metal roof and secure it according to Texas Department of Insurance standards.

Install storm-resistant windows. Hurricane-rated windows stand up.

Clear the ground level. Don’t finish interior spaces below the first floor, including foyer entrances, because once they are breached, the damage spreads into the living areas. It’s okay to have an outdoor closet, but nothing that connects to the first floor interior space.

Build to code – or beyond. Put hurricane straps and connections inside and outside. Follow the current codes for straps and studs, framing, sheathing and connectors.

Apply reinforced siding. Cement board or similar materials don’t warp or rot.

Elevate electrical equipment as far off the ground as possible.

Raise your utilities, such as air conditioning units. Remember – get everything off the ground.

Billingsley adds a final tip: Keep receipts for every repair you make so you can prove you made it; otherwise insurance won’t cover it again.

[Note: This list is adapted from an article by Alice Melott, Galveston writer and real estate agent, in *The Islander Magazine*, Recovery Issue 2008; used by permission.]

Story and photos by Ann Patton/FEMA