

Mitigation best practices



FEMA

House built above building codes stood strong against the storm

Homeowners' complaints turned to thanks



Elevated home of David and Cynthia Garza.

SHOREACRES, Texas – In 2002, when David and Cynthia Garza decided to build their 2,200-square-foot dream home, they had no idea the road to achieving their dream would be paved with building codes. Initially frustrated by requirements, they later credited the city's "hard-nosed" building inspector for their home's survival during Hurricane Ike.

Their land sits in a low, coastal area less than a mile from Galveston Bay, so the Garzas decided to build on higher ground by adding

fill to the construction site. They brought in loads of dirt to create a raised pad, which they assumed was at or above the base flood elevation (BFE), the level that can be reached by a flood that has a 1 percent chance of occurring in any year.

"We had already put our form up when the building inspector walked out here and told us we were a foot too low," David said. "I asked, 'How can you tell? You are just looking.' He was really hard-nosed."

At a glance

The Garzas built above the base flood elevation and the recommend building codes during construction of their new home in Shoreacres, Texas.

The inspector then asked the Garzas whether they had obtained an elevation certificate, an important tool in floodplain management that documents the elevation of a structure in relation to the base flood elevation. David said, "When I told him I hadn't, he says, 'So you've got two choices. You can go ahead and pour the cement and be told it's too low or you can stop right now, get your Certificate of Elevation and continue building.'"

Although they were angry and annoyed, the Garzas decided to get the certificate. "Oh boy, I was mad," David said. "The additional elevation would cost more money. I also had to make certain that the land sloped so that I wouldn't flood my neighbors out."

The survey done for the certificate showed that, while the foundation formwork was at the base flood elevation, it was still a foot too low. The city of Shoreacres requires a foot of "freeboard," an additional amount of height above the base flood elevation that provides added protection and results in lower flood insurance rates.

The compacted dirt fill originally brought the ground up to 11 feet, the base flood elevation, but it was shy of the 12 feet needed to meet the freeboard requirement.

In the end, the Garzas elevated their home approximately 9 inches above the city's 12-foot requirement and well above the level needed for flood insurance.

The Garzas also became frustrated with the building inspector during the framing process.

"Although I thank him now, because my house is sturdy, I had some choice words for him," David said. "He comes up and says, 'You have to strap this, you have to tie that down, you have to wrap that.' Oh man, he was tough. He and my builder were always butting heads."

Determined not to have more problems with the inspector, the builder "went overboard," David said. "He tied down, strapped and wrapped everything. We showed him."

In September 2008, Hurricane Ike brought tremendous winds and a 12-foot storm surge to Shoreacres, dismantling waterfront properties and flooding approximately 575 of the town's 650 homes. Some of the Garzas' neighbors got more than 3 feet of water, while flood waters reached within five feet of David and Cynthia's front door.

Waterfront property destroyed by storm surge.



Floodwaters inundated neighbor's home.

Now, David has nothing but kudos for building inspectors. "We complained nonstop, but we thank them now," he said. "They knew what they were doing. Everybody who has built since us did not get flooded."

David feels strong codes enable people to live near the coast. He said, "People are saying, 'I wouldn't build down there,' and I tell them, if you build according to the codes, you will be all right. That's what the codes are there for."

Story and Photos by Bonnie Hanchett - FEMA



**"We
complained
nonstop, but
now we are
grateful to
the city of
Shoreacres
for adopting
and enforcing
building
codes."**

More Information:

For additional information please visit the following websites:

www.msc.fema.gov
www.fema.gov/nfip
www.fema.gov/fhm