

Tips For Building Hurricane-Proof Houses

As less fortunate residents of the devastated Gulf Coast look to rebuild, many are searching for new houses that will be able to weather the next storm.

They're studying house styles and construction techniques that might be better suited to hurricane-prone areas than the houses that were swept away in the double whammy of Katrina and Rita. And some are calling companies like Topsisider Homes.

What kind of structure could stand up to the wrath of Hurricanes Katrina and Rita?

Ask Pam Coyle and Shaun Washburn. The eye of the Hurricane Katrina passed right over their 20-year-old weekend retreat in Perkinston, Mississippi; yet the house suffered no structural damage.

"I was amazed," said Washburn, who estimated he had climbed over more than 30 fallen trees on the heavily wooded property to get to the house. "The house is glass all around, and had more than 100 trees around it. Not one pane of glass broke. From inside the house, you wouldn't even know there had been a hurricane."

Later, Washburn filed a claim with his insurance company to cover the devastation of the barn and potting shed on the property. The insurance adjustor also took a look at the minor damage to the soffit of the house, caused by falling trees.

"The insurance adjustor said, 'man, I can't believe it. It looks like the trees hit the house and bounced off,'" Washburn said.

Their house, like four owned by Hubert Spradling of Orange, TX, has a number of advantages over conventionally built houses when it comes to standing up to roaring winds and raging floods. One advantage is post-and-beam construction, believed to be the oldest wood construction method.

Post-and- beam construction is the secret to the longevity of the much-admired barns of New England. It's what has enabled those old buildings to withstand earthquakes and heavy loads of snow on the roof as well as hurricanes.

Going barn-style one better, these modern post-and-beam houses are based on the octagon. The eight-sided design makes it difficult to knock the house down. Rather, the winds blow down and around the house and over the low-slung roof.

Spradling had four such houses constructed on his property more than 20 years ago. When he built the first one, overhanging a bayou, in 1981, his neighbors were openly skeptical.

"They said, 'that damn thing will fall down within a year,'" Spradling recalls.

But when Hurricane Rita devastated much of the town of Orange on September 26, that house came through unscathed, as did two of his other Topsisider homes. The fourth house suffered some roof damage and a couple of windows were blown out by the 140 mph winds.

Spradling's daughter lives in one of the houses and another is rented out. These residents moved back into their homes when the mandatory evacuation ended. In contrast, many of the nearby neighbors' houses lay collapsed under fallen trees, and the metal building that houses Spradling's retail boat business, 100 feet away from one of the Topsisider houses, was torn apart.

Like Barns, Only Better

Builders today have a better variety of materials to work with than the farmers of 200 years ago. Topsider homes for example, are built with southern yellow pine lumber, which is the strongest of the softwoods and has a desirable amount of "give" that hardwoods lack. The laminated and solid timbers are bolted together with massive steel collars and couplings. In many cases the houses sit on thick concrete steel-reinforced pedestals, which are effective shock absorbers. The floor, wall and roof panels are affixed to create a weather-tight shell, and windows are typically made with safety glass or high-impact, missile-resistant glass.

Topsider homes, which are built virtually all around the world, start out in a factory in Clemmons, North Carolina. The components are shipped to the end location and assembled by local builders. And along with all their other out-of-the-mainstream features, every house is designed with local weather conditions, environmental factors and local building code requirements in mind.

"They do everything they were designed to do -- they're flood-proof, hurricane-proof and earthquake-proof. And they are easily maintained and very efficient," said Spradling. "We've been very happy with them."

The first Topsider homes were built on the sides of mountains and on ocean beaches, in vacation and resort areas. From the beginning, salt air, steep terrain, snowloading -- any local conditions that might present a threat -- were addressed in the design and engineering. When Spradling bought his four houses, just one model was available, and he has found that model adaptable for commercial as well as residential uses. Now the company's custom houses, in a large variety of shapes, sizes and styles, are built from Scotland to Japan, from the islands of the Caribbean to the permafrost of the Arctic Circle.

One-Stop House Shopping

For hurricane victims, like Cheryl Lukehart, whose vacation house at Pensacola Beach was totaled by Hurricane Ivan in September 2004, another advantage of these unconventionally built and unusually strong houses is that Topsider Homes offers in-house design, lender relationships, and whole departments specializing in builder recruitment and training, obtaining of building permits, and overall planning and logistics.

"When you're suddenly -- suddenly -- on the market, you don't know where to start," Lukehart said. Over the years she had owned her barrier island beach house, she had paid attention to which houses were demolished by storms and which survived. After Ivan she talked with local builders, and wasn't happy to hear that they were still putting up gable end style houses, like hers, that are vulnerable to high winds.

"You can't go into this thinking that what happened was a fluke," Lukehart said. "A few houses made it, and they were houses that had a different roof design, were built higher up, and were built to the new building codes."

When she decided to rebuild, she said, "I was going to have to find a design that had a shot at making it."

"The people we're hearing from are encouraged to find that there is an alternative building system that has a proven track record of surviving some of the nation's worst disasters," said Sheldon Storer, president of Topsider Homes.

Since the summer hurricanes, hits to the company's web site have skyrocketed, and many people whose homes were destroyed have visited its manufacturing facility to meet with its experts on design, construction, financing and the myriad considerations that go into building a house.

Cheryl Lukehart discovered this alternative approach to weathering storms when she Googled "hurricane resistant design." She visited the factory last month and said she was reassured by seeing the quality of the

materials and the construction methods. Topsider Homes provided her with a list of pre-qualified builders in the Pensacola Beach area, and she is in the process of selecting one.

Even though the design she chose has full-length glass panes facing the beach, she's confident that her new house will stand up to anything nature dishes out. And equally satisfying has been the way the rebuilding process is being streamlined.

"One of my neighbors has been working ever since the storm to rebuild, and our houses are going to be built at about the same time," she said. "I visited the Topsider factory in October and the house should be finished by the end of May. That's phenomenally fast."

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