

Panther code testing will help minimize potential storm damage

June 3 2014, by Robyn Nissim



Arindham Chowdury, right, says Panther Code Test Protocol will help determine which construction products will fare best in stormy conditions.

The National Oceanic and Atmospheric Administration has forecast El Niño conditions in the Atlantic this year, predicting smaller number than average hurricanes in 2014. But the overwhelming consensus among scientists worldwide is that storms are still going to keep increasing in both frequency and severity over the middle and long runs. And even a small storm can inflict huge losses if a structure is not strong enough.

Building code provisions, particularly for the Miami-Dade High Velocity Hurricane Zone, have been revised and tightened in the last two decades based on lessons learned from previous storms. But until FIU's Hurricane Research Center (IHRC) introduced the [Wall of Wind](#) (WOW) – the largest and most powerful university [storm](#) research facility – it was impossible to gauge just how South Florida construction would fare in the face of a major storm. By the fall of 2014, the Wall of Wind and Miami-Dade will have completed an extensive study determining exactly that, a Panther Code Test Protocol.

Currently there is a mandatory building code, a negotiated, consensus-based minimum for the level of hazards and risk that a community faces, explains Rich Olson, director of FIU's Extreme Events Institute and the IHRC. The problem is in the "minimum." "The general public thinks they're safe if the building or their home is built to code. But that begs the question: safe against what?" says Olson.

Since the code mainly targets mid-level hazards, like a Category 3 hurricane, buildings and homes are inherently at risk from anything stronger, such as a Category 4 – let alone a Category 5 – storm. Just because something is "built to code" doesn't mean that it's necessarily going to be safe or secure in a higher intensity event. And, as a hurricane is so often a "multi-hazard event," it is the combination of wind and storm surge that has the most devastating impact.

"The second part of the problem is that the events appear to be changing," Olson notes. "You're getting sliced from two sides of the same sword. Code isn't what people think it is and the hazards are increasing. So the code either has to increase or we have to have a moving target so that 'code plus' evolves upward.

"The new Panther Code Test Protocol will address some of that vulnerability," Olson says.

Miami-Dade County official Jaime Gascon recognized the level of uncertainty even in brand new construction so he began working with IHRC and the WOW to create an enhanced building code "isolating the products and the conditions that people will face."

We want to see what is working and where we need to tweak things," says Gascon. "This is the science and the research to show where it is necessary."

Arindam Chowdhury, director of IHRC's Laboratory for Wind Engineering Research, says WOW is testing new ways to ensure that structures survive natural catastrophes. "It is not enough to test winds straight on," he says. "We are looking at different wind directions combined with wind-driven-rain to see where there are vulnerabilities in a building and whether prescriptive code guidelines are actually effective." These distinctions will be critical this summer as well as in the many storm seasons to come.

After all, South Florida knows well that the NOAA 2014 forecast does not necessarily equate to calm conditions in this tropical climate. There were El Niño conditions in 1992 when Hurricane Andrew blew through the region and led to a new building code in Miami-Dade County. As the saying goes in hurricane country, "It only takes one storm if it's a direct hit."

Provided by Florida International University

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