

## Better Building Codes Cut Property Loss

By **Harvey G. Ryland**

The most costly storm ever to strike the United States slammed into South Florida 10 years ago this month. By the time Hurricane Andrew moved off, entire communities had been reduced to little more than piles of broken lumber.

More than 200,000 homes and businesses were damaged or destroyed. Insured losses are estimated at more than \$19 billion.

We learned a lot from Andrew. We learned that powerful winds could easily tear off roofs in South Florida and that air-borne building materials could shatter untold numbers of windows and doors. We learned that shattered windows and doors could allow hurricane-force winds into a building, causing internal pressures to soar and blow the building apart.

We've also learned a lot from a recent study by Applied Insurance Research Inc., in collaboration with the Institute for Business & Home Safety.

The study shows that if all buildings in South Florida were either retrofitted or in compliance with the post-Andrew South Florida Building Code, or the new Florida Building Code that went into effect this year, another Hurricane Andrew would cause only about half as much damage to residences and 40 percent less damage to commercial property. The combined loss reduction would be about \$10.4 billion, according to the study.

The new statewide Florida Building Code is the most progressive in the nation in terms of wind-load calculation and protection of the building envelope. With this code in effect, tornadoes, thunderstorms and other natural events can also be expected to cause less damage to buildings.

This is a powerful testament to the value of building codes as loss control tools. Building codes that address the natural hazards likely to occur in an area can reduce public and private sector costs, including insurance claims payments.

This is no truer in Florida than anywhere else in the country.

In North Carolina, for instance, a recent study by Applied Research Associates of North Carolina quantified the benefits of code-required wind-borne debris protection.

The study, commissioned principally by IBHS, shows that protecting buildings along

the North Carolina coast against wind-borne debris would reduce the average losses from hurricanes up to 33 percent, depending on the type of construction used.

Though the study looked only at hurricane damage, owners of properly protected buildings could expect fewer losses from other types of windstorms as well.

ARA's study showcases the fact that a major cause of damage in hurricanes is wind-borne debris smashing through windows and glass

according to ARA.

Buildings so protected could experience average annual loss reductions ranging from 12-to-54 percent, depending on type of construction, building contents and loss of use.

All figures are based on comparisons to the North Carolina 2002 Building Code, which does not require the use of debris impact protection for residential or commercial construction. After considering the ARA report and other testimony, however, the state's Building Code Council voted unanimously to approve reinstatement of the wind-borne debris provisions at a distance not to exceed 1,500 feet from the mean high water line of the Atlantic Ocean.

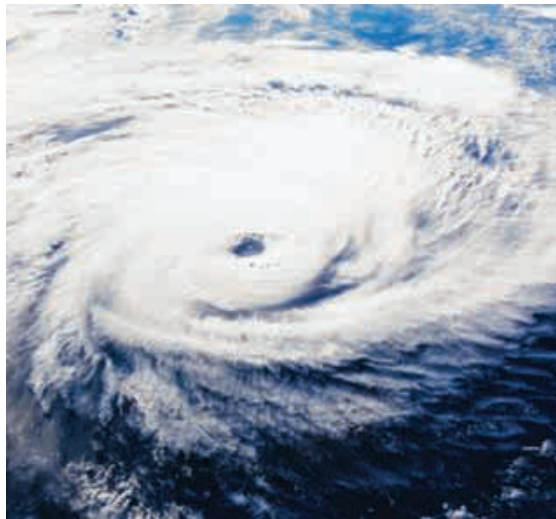
The council will vote on this issue again following more public hearings in September this year. Following another affirmative vote, the requirements should be in place as of Jan. 1, 2004.

Cost is always a concern and often a factor used to argue against stronger building codes. Even in Florida, with the record destruction caused by Hurricane Andrew, it took several years before the new codes were approved statewide.

But costs often are minimal. The ARA study showed, for instance, that the increase in cost for wind-borne debris construction options range from about 0.5-to-4 percent of the initial building cost. The higher end of that range includes use of impact-resistant windows, which offer protection that is always in place.

Expected savings from reduced damage in future storms would be more than enough to offset the higher construction costs, according to the study.

Nothing can stop a hurricane or other natural event from occurring, but building codes can help determine whether an event turns out to be a disruption or a disaster. **NU**



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doors. Once windows or doors are blown out, internal building pressures can soar, sometimes causing roofs and walls to blow apart.

Even if a building stays together, though, hurricane-driven rain can get inside, destroying furnishings, flooring, walls, ceilings, electronic equipment and other contents.

"Even if the walls are intact and the roof trusses do not fail, loss of roof deck and a few windows typically leads to losses greater than 50 percent of a building's value," according to the ARA report.

The greatest reduction in loss occurs when window openings are protected by impact-resistant windows or shutters,

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