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news

Field Manual Proves Timely in Wake of Ivan

By Mark Fitzgerald

After Hurricane Ivan tore through Gulf Shores, Alabama, in mid-September—uprooting trees and ripping off roofs—thousands of residents were left wondering whether it was safe to return to their homes. The City of Gulf Shores wondered how its small staff of building inspectors would be able to meet the demands of the large number of property owners who would be needing safety evaluations. It wasn't long before the town hired two Alabama engineering firms, LBYD, Inc., and Barter & Associates, Inc., to assess some 1,400 residences in the Barrier Islands and Lagoons—the major regions in Gulf Shores ravaged by Ivan.

Of course, it also helped that just one month before the hurricane the Applied Technology Council (ATC)—a nonprofit corporation that explores the ways in which technology can be used to mitigate hazards—released its manual ATC-45, *Safety Evaluation of Buildings After Wind Storms and Floods*, 132 pages of procedures and guidelines for evaluating the safety of buildings subjected to floods or wind- storms. "This was a long-anticipated publication," says Jim Delahay, P.E., LBYD's president, noting that the ATC had worked on the document for six years. "We were real lucky that the manual came out when it did. I grabbed a hundred copies and gave them to everyone involved in the assessments, so we were prepared with documents in hand before the storm ever got here."

Influenced both by an earlier ATC publication, ATC-20, *Procedures for Post-earthquake Safety Evaluation of Buildings*, and by a project (known as ATC-26) that sets forth methods for evaluating the safety of U.S. Postal Service facilities after disasters, manual ATC-45 places buildings in one of three categories. After a building has been

examined, inspectors will post a green, yellow or red placard to denote the structure's condition. Green placards, which read "Inspected," indicate that the building is safe to occupy "and no apparent structural hazard has been found." Yellow placards specify that the building is under a "Restricted Use" order and prohibits access to certain parts of the building. Buildings that have been determined "Unsafe" receive red placards stressing that "entry may result in death or injury."

"The yellows were the hardest," explains Delahay, who helped with the assessment efforts. "The greens and reds were easier because you can usually tell pretty quickly if a house didn't get much damage, and then you see houses that are down on the ground or badly torn up— what we would call an easy red. But what if a house is leaning slightly? You're afraid it will continue to lean over while someone's in it. That's a 'hard yellow' and you have to spend some extra time on your evaluation."

The two firms completed the housing assessments in Gulf Shores in less than a month. The Federal Emergency Management Agency (FEMA), which had hired a team of engineers to assess Ivan's devastation along the Gulf Coast, is currently preparing a report that will draw on and synthesize the forensic discoveries. "The FEMA report should be very interesting," adds Delahay, who expects the results of the team's investigation to be finished by late winter. "Because that's where the meat of what's wrong and what needs to be fixed is going to be."