



Mitigation Assessment Team Report

Hurricane Ivan in Alabama and Florida

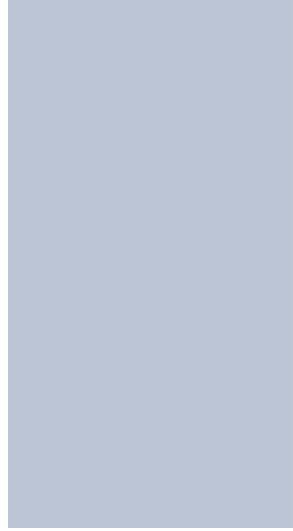
Observations, Recommendations,
and Technical Guidance

FEMA 489 / August 2005



FEMA





In response to Hurricane Ivan, the Federal Emergency Management Agency (FEMA) deployed a Mitigation Assessment Team (MAT) to evaluate and assess damage from the hurricane and provide observations, conclusions, and recommendations on the performance of buildings and other structures impacted by wind and flood forces. The MAT included engineers and other experts from FEMA Headquarters and the Regional Offices and from the design and construction industry. The conclusions and recommendations of this Report are intended to provide decision-makers information and technical guidance that can be used to reduce future hurricane damage.

About the Cover

The cover photograph is a NASA image courtesy of the Moderate Resolution Imaging Spectroradiometer (MODIS) Land Rapid Response Team at the National Aeronautics and Space Administration's (NASA) Goddard Space Flight Center. The MODIS instrument flying aboard NASA's Aqua satellite captured this true-color image of Hurricane Ivan on September 15, 2004, at 2:50 p.m. Eastern Daylight Time. At the time this image was taken, Ivan was located approximately 170 miles south of the Alabama coastline and was moving northward at 14 miles per hour. Ivan made landfall as a Category 3 storm with maximum sustained winds near 121 mph with higher gusts.

(IMAGE COURTESY OF NASA EARTH OBSERVATORY)

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Dedication

Jim Delahay was a person you did not forget once you met him. He was an outstanding engineer, a dedicated professional, and a true friend. He was also an expert in wind-resistant design, structural engineering, and building codes and standards. Although a young man, he was well-known throughout the engineering profession, and he was recognized by his peers on many occasions. Among his many accomplishments: Jim was the first engineer elected as chairman of the Structural Committee of the International Code Council; Jim was chair of the Code Advisory Committee of the National Council of Structural Engineers Associations; he was co-chair of the ASCE 7 Wind Load Task Committee; he was past president of the Applied Technology Council; and he was president and CEO of Lane Bishop York Delahay (LBYD, Inc.) of Birmingham, Alabama. In 2003, he was named a Distinguished Engineering Fellow by the University of Alabama College of Engineering, from which he earned both his BS and MS degrees in Civil Engineering.



Jim Delahay (1958-2005)

Jim made his first post-storm deployment for FEMA after Hurricane Ivan, and he was an indispensable member of the Hurricane Ivan Mitigation Assessment Team. We all learned from Jim, and this report is all the better because of him. Those who read and use this report will benefit directly from Jim's expertise and knowledge.

FEMA and the Hurricane Ivan Mitigation Assessment Team are honored to dedicate this report to the memory of Jim, who passed away suddenly on April 16, 2005.
