

# RAM International and Structural Engineers Inc. Announce Collaboration for Vibration Analysis and Design Software Solution

RAM International and Structural Engineers, Inc. recently announced an exclusive agreement to integrate the RAM Structural System™, a leading software solution for integrated analysis, design and drafting for all types of building structures, with the newly developed Floorvibe™ software.

Under this agreement, the programs will be linked so that the floor geometry

and loading in a RAM Structural System Model can be transferred directly to FloorVibe, allowing the design engineer to thoroughly investigate vibration issues and to ensure that floors are designed per *AISC Design Guide 11 for Floor Vibration guidelines*. Advanced features will be added to the RAM Structural System to idealize a floor system to conform to the

limitations of the Design Guide.

All North American users of the RAM Structural System under a current Annual Support and Maintenance Agreement at the time of release will be given a free copy of FloorVibe along with their RAM Structural System V9.0 upgrade. The fully integrated system is expected to be released in January, 2005. ■

## News and Information

### The Parkfield California Earthquake

September 28, 2004

By Ronald O. Hamburger, SE

At 10:15 am Pacific Daylight Time, an M6.0 earthquake occurred on the San Andreas fault near Parkfield California. Fortunately, Parkfield, located approximately half way between Los Angeles and San Francisco is sparsely populated and little damage occurred. There were no reported fatalities or significant injuries. However, the earthquake is of great potential scientific importance. Parkfield sits on an extremely active segment of the San Andreas fault. Moderate-size earthquakes of about magnitude 6 have occurred at regular intervals on this segment of the fault at roughly 20-year intervals. Known events include earthquakes in 1857, 1881, 1901, 1922, 1934, and 1966.

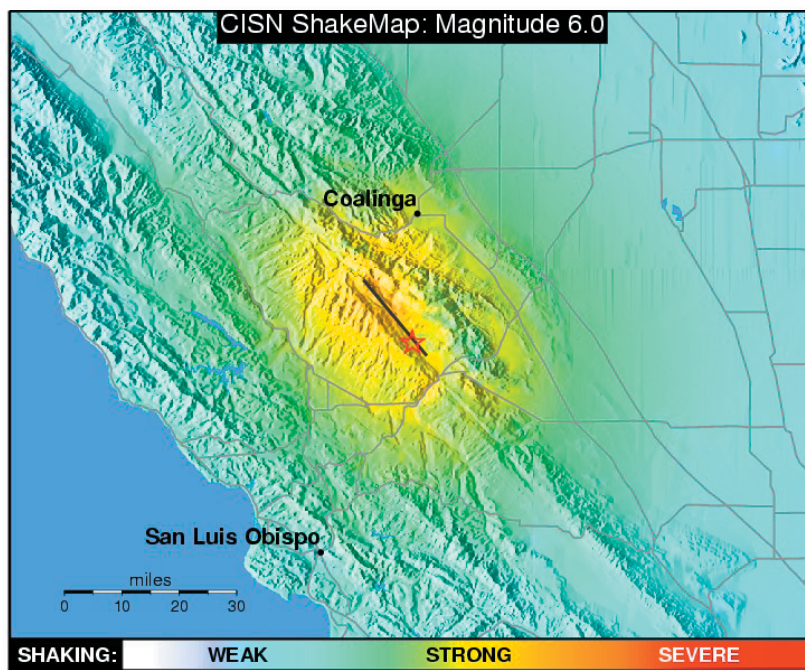
In the mid-1980s, the United States Geologic Survey, recognizing this pattern and expecting that an M6 earthquake was likely to occur in the late 1980s or perhaps early 1990s, initiated the "Parkfield Experiment" which included installation of the densest array of seismic monitoring equipment anywhere in the world. Earth scientists working on this experiment hoped both to detect indicators of large magnitude events, that could be used in prediction and also to

collect valuable data on the propagation and characteristics of ground motion in the near field. As the 1990s passed, the great hopes for this experiment waned and some of the instrumentation was decommissioned or moved elsewhere.

However, Parkfield remains the most heavily instrumented region in the United States and a wealth of valuable ground

motion data was obtained from this earthquake and will likely be analyzed for years and eventually suggest changes to the building codes to improve the seismic resistance of our built environment. ■

More information can be obtained at <http://www.consrv.ca.gov/cgs/> and at <http://earthquake.usgs.gov/recenteqsww/Quakes/nc51147892.htm>



ShakeMap for Parkfield Earthquake

# Florida in Crisis

## Four Hurricanes Wreak Havoc on the Sunshine State

It has been quite a year for hurricanes in Florida. A record four separate storms have made landfall in the Sunshine State so far in the 2004 hurricane season. The images included here provide a glimpse of some of the devastation. Amazingly, however, the devastation was not as great as it might have been... all thanks to a wake up call named Andrew.

In 1992, Hurricane Andrew—the costliest hurricane in U.S. history—wreaked havoc on South Florida. In its aftermath,



Severe damage to a building is shown in Pensacola Beach, Florida

model for construction guidelines elsewhere in the United States, the Caribbean and even Australia.

Amazingly, some of the news coming out of Florida subsequent to the recent four-storm onslaught is actually good. Engineers around the state report that the new codes are working. Newer construction fared better than buildings built before the 1998 codes.

In recent years, Florida lawmakers have continued to debate whether the new codes are too stringent... making new construction and development too costly. However, in the wake of recent Florida storms, the public has already started to question whether



A Florida state bridge inspector looks at the destroyed bridge from Gulf Breeze, Florida to Pensacola Beach

the codes go far enough. Structural engineers can and will use the storm damage to evaluate design parameters for wind. These same engineers will provide an important voice in the ongoing public debate—to what extremes can we realistically design to withstand wind as a force, at what cost, and what is the optimum balance between the two?■

*Thank you to Marc Barter, Barter and Associates, Mobile, Alabama, for these first-hand photos of devastation from Hurricane Ivan in Alabama and the Florida panhandle.*

images of exposed interiors and sparse remains of homes and businesses defined the devastation. For Floridians, the images also exposed a serious statewide problem: an antiquated system of locally-administered building codes and building code compliance and enforcement.

Building codes and their administration and enforcement became a critical, statewide issue, with statewide implications. Did Florida need a stronger code? Or was the problem compliance? Post-Andrew investigations uncovered a pattern of widespread code violations which led to catastrophic structural failures. In July of 1996, the Florida Building Codes Study Commission was established to evaluate the existing system and to recommend reform.

The Report of the Building Codes Study Commission made recommendations for reforming the building codes and centering the system on a single statewide code. The 1998 Legislature adopted the concept and most of the recommendations as part of House Bill 4181. Thorough and comprehensive, the Florida code, and the way it is administered, has become a

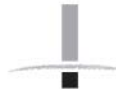


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