

High Wind Research Structure

Helping Housing Withstand Hurricanes

The most common and most costly cause of damage to buildings is high-force winds, such as hurricanes and tornados. In hopes of reducing the loss of housing resulting from such storms, the USDA Forest Service, Forest Products Laboratory, has built a high-wind research structure in Gulf Breeze, Florida.

Located at the Gulf Islands National Seashore, this 28-by 44-ft research structure is fitted with sensors to take measurements during high winds. The sensors measure wind speed and direction and wind pressure on the roof. Also measured are the forces exerted by the roof system at the exterior walls, the area where most wind damage occurs.

The data collected at the structure are transferred to a computer at the Forest Products Laboratory in Madison, Wisconsin, for analysis. Data will be collected for a 3-year period and will be used to create a computer model to simulate the effects of severe winds on structures.

Results from this study should make a difference in the way homes are constructed in high-wind prone areas of the country. Limiting damage to buildings through this research will help save lives and conserve building resources.

Joe Murphy, a research engineer at the Forest Products Laboratory, received a Partnership for Advancing Technology in Housing (PATH) grant from the U.S. Department of Housing and Urban Development to perform this research. PATH combines the efforts of 13 Federal agencies—including the USDA Forest Service—and more than 300 industry partners to improve the development and use of new housing technologies. FPL is the lead agency for wood-framed housing through its Advanced Housing Research Center.

The project is being conducted in cooperation with the Department of the Interior's National Park Service and J.M. Harold Construction Co. of Pensacola, Florida.

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