



Hurricane-Resistant Homes Mercedes Homes

Southeast U.S.

Project Data: Single Family Residences

Steven Winter Associates, Inc. (SWA) has been working with Florida-based home builder Mercedes Homes on the design and construction of hurricane-resistant homes as a solution for housing projects in the Southeast. Mercedes Homes started working with DOE's Building America research teams in 2000 to develop an advanced wall system to replace the concrete masonry unit (CMU) block construction typically used in Florida. After researching and prototyping a variety of systems, including pre-cast concrete, Mercedes Homes selected a cast-in-place concrete wall system.

Beginning in 2001, the concrete wall system, dubbed the Solid-Wall-System (SWS) by the builder, was rigorously examined and engineered by researchers from the University of Florida's Program for Resource Efficient Communities and Steven Winter Associates, using funding provided by the Federal Emergency Management Agency (FEMA). The results of those studies were impressive, showing a marked potential performance improvement during windstorm events, as compared to the regionally standard CMU walls. In 2001, Mercedes Homes started implementing the SWS as a standard offering.

After noticing damage on Mercedes homes due to wind-driven rain during the 2004 hurricane season, a new, truly hurricane-resistant prototype house was completed in 2005. This house offers three levels of hurricane protection: superior structural strength; greater resistance to wind-driven rain; and improved post-storm recovery.

SWA and Mercedes continue to research and develop advanced hurricane-resistant housing solutions including two-story cast-in-place wall systems, and perform testing of more conventional building assemblies. With ongoing improvements, Mercedes expects to see even less damage, and more happy homeowners, in the future.



Client: Mercedes Homes

Location: Southeast U.S.

Building Type: Residential

Building Size: 3,000+ homes

Project Status: Completed

Reference: www.mercedeshomes.com

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