

BUILDING PERFORMANCE: HURRICANE ANDREW IN FLORIDA

**OBSERVATIONS, RECOMMENDATIONS,
AND TECHNICAL GUIDANCE**



**FEDERAL EMERGENCY MANAGEMENT AGENCY
FEDERAL INSURANCE ADMINISTRATION**

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COVER PHOTO:

HURRICANE ANDREW, AUGUST 24, 1992

*Courtesy of the National Oceanic and Atmospheric
Administration, National Weather Service*

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DECEMBER 21, 1992

WOOD-FRAME MODULAR BUILDINGS

Overall, relatively minimal structural damage was noted in modular housing developments. The module-to-module combination of the units appears to have provided an inherently rigid system that performed much better than conventional residential framing. This was evident in both the transverse and longitudinal directions of the modular buildings.

Two end-wall (end wall of end modules) failures were observed in a modular home subdivision. Poor connection of the tops of the walls to the roof diaphragms was evident in these instances. Some roof sheathing was observed missing from rafters, judged to be due either to building envelope breach (window and/or door failure) or to external wind and debris. Generally, the rafters themselves were left entirely intact, because of the inherent rigidity developed by the relatively short spans and secure connections. (SEE FIGURES 19 AND 20.)



FIGURE 19. Modular home. End wall of end unit separated from unit; withdrawal of nails along eave line and roof sheathing failure were also observed.

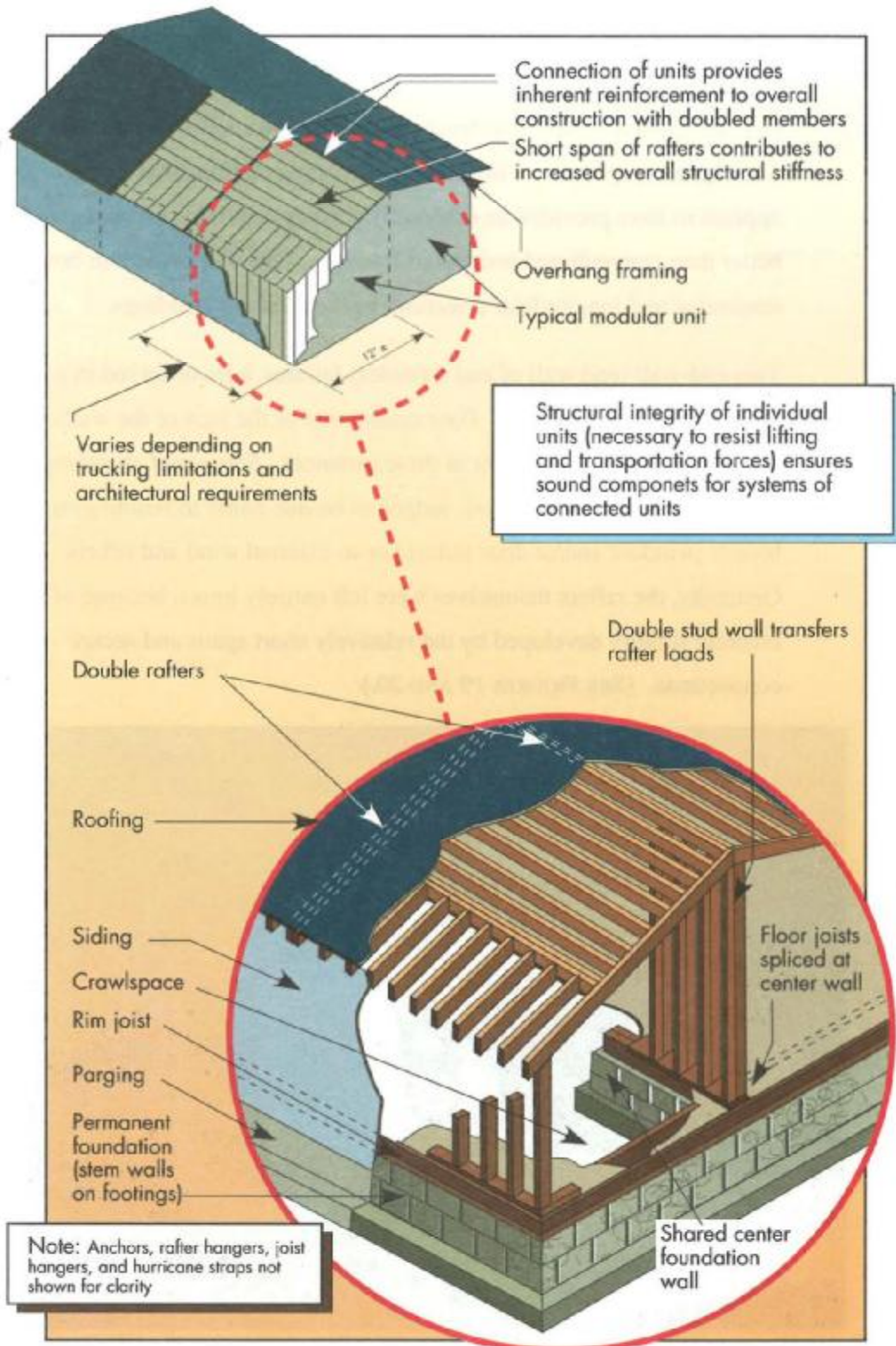


FIGURE 20. *Inherent structural strength of modular construction.*