

# Introduction

## *Hurricane Andrew damaged hundreds of homes in south Florida.*

In the early morning hours of August 24, 1992, Hurricane Andrew struck south Florida with high winds and heavy rains (Figure 1). Andrew destroyed tens of thousands of homes (Figure 2) and left 180,000 people homeless. The resulting property damage totaled over 30 billion dollars.

**Figure 1**  
Hurricane Andrew was a Category 4 hurricane with peak winds of over 140 mph.



### **WARNING**

The house elevation techniques described in this publication are appropriate only for houses **not** subject to the severe coastal flood hazards associated with high-velocity wave action from storms or seismic sources. See pages 2-2 through 2-4 for more information.



**Figure 2**  
Damage to houses  
and other buildings  
was severe.



The widespread destruction caused by Andrew was due primarily to high winds (Figure 3). However, flood waters contributed to the damage in low-lying coastal areas of central and southern Miami-Dade County (Figure 4).

**Figure 3**  
Wind damage.



**Figure 4**  
In low-lying areas, wind and rain damage to interior finishes and furnishings was exacerbated by flood waters.



In the repair and reconstruction efforts that followed Hurricane Andrew, owners of damaged houses had opportunities to modify their houses to protect them from future flood damage. One effective method of protecting a house from flooding is elevating the habitable areas of the house above the flood level.



#### DEFINITION

In a **slab-on-grade** house, the floor of the house is formed by a concrete slab that sits directly on the ground.

Almost all single-family homes in Miami-Dade County are constructed with reinforced masonry block walls on a **slab-on-grade** foundation. Houses of this type are the most difficult to elevate for flood protection. This publication describes how homeowners in Miami-Dade County elevated their damaged slab-on-grade masonry houses following the devastating effects of Hurricane Andrew.

**DEFINITION**

The **Federal Emergency Management Agency (FEMA)** is the independent Federal agency that administers the National Flood Insurance Program (NFIP).

Chapter 2 of this publication explains how the **Federal Emergency Management Agency (FEMA)** provided technical and regulatory guidance to Miami-Dade County homeowners concerning alternative house elevation techniques. Chapter 3 presents an overview of three common techniques appropriate for a variety of houses on different types of foundations. Chapter 4 uses eight illustrated case studies to demonstrate how Miami-Dade County homeowners used the three techniques to elevate their slab-on-grade houses. The benefits of elevating a floodprone house are summarized in Chapter 5.

For information about obtaining videotape and CD-ROM versions of this publication, refer to Chapter 6.