



#### CONCRETE CASE STUDY: SAFETY

## BUILDING A STORM-RESISTANT HOME

Pass Christian, Mississippi

**Completed:** Lone survivor in a neighborhood destroyed by Hurricane Katrina in 2005

**Floors:** 3



## Concrete is resilient to the worst natural disasters.

When Hurricane Katrina slammed into the Southeastern United States on August 29, 2005, the Sundbergs were ready.

Knowing the risk of hurricanes in coastal Mississippi, the Sundbergs did their homework before breaking ground, by studying the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps to identify where in the flood zone their property was located. They also studied building codes and visited abandoned homes devastated by Hurricane Camille to determine how to best build their home to survive even the most severe storm.

### 01. The only home left standing.

The Sundberg home was nearly 85 percent complete when Hurricane Katrina hit. When the storm passed, the Sundbergs' home was completely intact except for several blown out windows. The only other things left were the concrete foundations of the wood homes in the neighborhood.

### 02. Built to withstand even the harshest winds.

The elevated home is constructed of Insulated Concrete Form (ICF) walls and reinforced both horizontally and vertically, allowing it to withstand winds between 180-220 mph and resist wind-blown debris. Hurricane Katrina hit Pass Christian with reported sustained winds of 125 mph.

### 03. Protection from floods.

The first floor living area is above design flood elevation, keeping the living area predominately safe in the event of high flood waters. Because the lower level was built with concrete, it was not damaged by the storm surge. The home withstood flood waters of 28 feet.

### 04. Starting with a strong foundation.

The home has concrete spread footings supporting concrete columns and beams of the first level that in turn support the 3,000 square foot concrete home. Concrete is a flood resistant material that can withstand flood waters and storm surge.

### BUILDING ATTRIBUTES:

Insulated Concrete Form (ICF) walls

Post tension concrete slab

Concrete columns and beams

Concrete roof

Concrete floors

