"From The Drawing Board"

Hurricane Season

"Preparation through education is less costly than learning through tragedy."
- Max Mayfield, Director, National Hurricane Center

Hurricane Preparedness Week is May 21-27, 2006. In honor of this, I thought I'd share some thoughts and tips, since, as the National Hurricane Center confirms, "History teaches that a lack of hurricane awareness and preparation are common threads among all major hurricane disasters. By knowing your vulnerability and what actions you should take, you can reduce the effects of a hurricane disaster" (www.nhc.noaa.gov).

My first *real* exposure to a hurricane on the Outer Banks was Hurricane Isabelle in September of 2003. Just a day before Isabelle made land fall I was on the beach helping with storm preparation (primarily boarding up windows). When I returned after the storm, I was amazed to see the impact that a hurricane can have on the buildings and landscape that lay in its path. Less than two years later Hurricane Katrina, the costliest and one of the deadliest hurricanes in the United States' recorded history, struck the Gulf States. Katrina is estimated to be responsible for $75 billion in damages. This and the fact that the storm killed more than 1,600 people make Hurricane Katrina one of the worst natural disasters in the history of the United States.

As dangerous and damaging as hurricanes can be, there are measures we can take before, during, and after storms hit to help alleviate their impact.

According to the National Hurricane Center, there are four major hurricane hazards: Storm Surges, High Winds, Tornadoes, and Flooding. What we – as a community and as individuals – do to prepare for these hazards can potentially lessen the storm damage our buildings incur.

Current building codes mandate that buildings in hurricane flood and wind zones are designed to withstand a minimum load; these loads are determined by the geographic location and history of a specific area. These codes are continually changing, since, as history has proven, often they are inadequate. With this understanding in mind many builders and design professionals strive to exceed the current code requirements; in fact, many insurance companies mandate designs that exceed code [in order to insure these buildings and their content].

Aside from conservative building codes and conscientious design and engineering, there are a number of things that home and business owners can do to help ensure that buildings and their contents survive a hurricane. First, conduct a visual inspection of the building: Once a quarter, walk around the structure and inspect it for loose siding and trim, undermined pilings, rusted or missing tie-down anchors, etc. If you see any suspect items, have them repaired or replaced as soon as possible. Second: Consider investing in storm shutters. These can be metal shutters from a company that specializes in these systems or basic plywood panels (5/8" minimum thickness) cut to fit your windows. After hurricane Isabelle, I saw a lot of wasted custom-fitted plywood that had been used at the last minute to board-up windows. Once the hurricane passed, the plywood (which was hastily screwed to the siding and window trim) was discarded—at great expense to the homeowner. A more cost- and eco-effective system: numbered plywood panels that are secured to windows and doors via a simple, less invasive anchoring system that allows the panels to be reused. A third precaution: Install high-impact glass. Marvin Window and Door Company now offer hurricane-resistant, high-impact glass, designed to exceed winds in excess of 140 mph. These windows are engineered to maintain their integrity while absorbing the impact of flying debris (ie: tree limbs, building materials, etc.). Lastly, consider installing a "safe room." Though these rooms are generally built for the secure storage of items that may not be removed easily in the event of a hurricane evacuation, they can also provide temporary shelter if safe evacuation is not possible. Dupont has developed The Storm Room, which is designed to be retrofitted into an existing structure or to be incorporated into the design of a new one. It's constructed mainly of reinforced Kevlar and is engineered to withstand wind speeds of up to 250 mph.

After hurricanes hit, the best way to recover is by assessing and repairing the damage and re-establishing a sense of normalcy. If your home has been severely damaged, this can be difficult. A possible solution under such

circumstances: The Katrina Cottage. The Katrina Cottage is a 308-square-foot house (14 by 22 feet plus an 8-foot-deep porch with bench seating). It's the same size and price as a temporary Federal Emergency Management Agency (FEMA) trailer but offers permanent housing, dignity and the possibility of adding on later. This is just one of the many models of that were developed in the wake of Hurricane Katrina. If nothing else, it has helped generate a necessary discussion about hurricane preparedness and response, as well as the potential of affordable housing solutions for, among others, residents of low-income or resort communities (such as the Outer Banks) around the globe.

Jeffrey W. Jahnke, AIA practices architecture in NC, CT and elsewhere.
Aside from designing custom homes, he is currently working on designs for affordable, hurricane-survivable structures on the Outer Banks.