

Smart Move

A member company of IASM that installs flood vents in houses works extensively with structural movers and surveyors, saying they play an important role in floodplain mitigation projects that have been brought about by Hurricane Katrina and other disasters.

by Steven Ardito

We all know that homes near rivers and coastal areas are desirable. But many are vulnerable to the flooding episodes that seem to occur with greater frequency than ever before. This has come to light in dramatic fashion with storms like Katrina and Rita devastating the U.S. Gulf Coast in recent years. As a result of events such as these, government agencies have changed the way we look at placing homes in flood-prone areas. This involves reconfiguring floodplain maps, where surveyors play a prominent role in that, and consequently in mitigating flood damage.

Communities that participate in the National Flood Insurance Program (NFIP) require homes in mapped floodplains to have the lowest floor at least as high as the base flood elevation (BFE) indicated on the communities' flood insurance rate maps (FIRM). The BFE is the predicted high water mark of the one-percent-annual-chance flood. In the Gulf Coast region, new advisory BFEs, issued after assessments from Hurricanes Katrina and Rita were taken into account, may ultimately govern how high homes must be raised.

However, this requirement for specific home elevation hasn't always been the prevailing regulation when older homes were sited and constructed in special flood hazard areas (SFHA). Before the mid 1970s, with the onset of modern floodplain mapping and the creation of the NFIP, we did not have a good understanding of our nation's floodplains or the guidance of how to build flood sustainable structures in them. Common sense and historical flood data took precedence in determining the safest height needed for homes. This practice was applied to many thousands of homes built. Many have persevered through flood events without sustaining severe structural damage from the hydrostatic pressures inherent with floodwater.

But many homes constructed pre-FIRM have suffered repetitive losses because their habitable floors were not located at or

above the BFE, or because the foundation walls that elevated the home were not properly vented to relieve hydrostatic pressure. For every new home built today that meets code, hundreds of older structures stand in harm's way, with no mandates to bring them up to today's standards. This is an area where the licensed surveyor and the structural mover can make a difference for many homeowners located in the SFHAs.

Elevation Certificate Takes on Importance

In respect to floodplain management, the elevation certificate (EC) when completed becomes an important document for the homeowner. It may appear to be a simple recording of elevations and measurements on a particular dwelling and property, but this document is crucial to the homeowner looking to obtain other items such as a certificate of occupancy, a federally backed mortgage, or flood insurance through the NFIP. The EC is of such importance that FEMA has made several updates to it over the past few years in order to better serve the public.

With this form, a certifier is required to provide the square footage of the enclosed area beneath the elevated habitable floors, and take at least two photographs if the EC is being used to obtain flood insurance. Interestingly, statistics compiled by FEMA indicate that over 80 percent of certificates on file in any given municipality are incomplete or incorrect. This statistic is staggering in light of the many decisions that homeowners have made based on their EC. Decisions on whether to buy, mitigate, elevate, or pay the annual flood insurance premiums should only be made after reviewing a completely accurate document. Continued education of the surveyor and all floodplain management professionals will lead to a better quality of EC, which in turn will provide a greater benefit to the homeowner.

But the EC is not the only thing that needs to be addressed with our floodplains today. The aging stock of homes in our SFHAs is a growing problem. As the characteristics of our floodplains have changed, largely due to over-development, even simple runoff of

rainwater has caused flood events of greater magnitude than that of 30 – 40 years ago. The size of our mapped floodplains has grown, and the heights of the floodwaters during flood events have increased over time. Good floodplain tells us that we need to relocate, elevate, or tear down and rebuild these older homes to ensure that they meet today's strict elevation requirements.

The process to remediate these homes is costly, and it has taken a long time for the federal and local governments to work with the homeowners to effectively change their flooding predicaments. Many homeowners, after experiencing the pain of property damage and loss, have decided to elevate their homes with or without the help from governmental agencies. For some, like the residents in the floodplains along the Delaware River in Pennsylvania and New Jersey, the flooding of their homes has become an annual event they do not want to tolerate any longer.

Smart Vent, Inc of Pitman, NJ, a member of IASM, has partnered with **Raise Right Corporation**, a structural mover from Bucks County, Pennsylvania, on several occasions to literally lift homeowners' dwellings above the BFE and out of harm's way.

One such project involved Don Williams, a homeowner who knows devastation well. Having a beautiful home on the banks of the Delaware in scenic New Hope, PA, Williams and his neighbors have endured not one, not two, but three devastating floods that have all but destroyed their homes. After the second flood occurred in April 2005, with waters rising half way up the walls of his first-floor townhouse, Williams and his neighbors, whose structure consists of four townhouses occupying a historic building, decided to have their dwellings raised above the BFE. The journey did not happen overnight, as the group first needed to get approvals from the historical review advisory board, local planning board, and town council.

Moving a House...Vertically

Raise Right begins the process by disconnecting all utilities to the structure, including electrical, sewer, and plumbing. They work with IASM member **Wolfe House Movers**, who literally raise the home by running steel beams underneath the floor joists, installing wood cribbing, and actuating hydraulic jacks. The home is raised above the BFE according to the 100-year flood elevation



Raise Right – Before



Raise Right – After



code requirement. Once the structure is raised, Raise Right runs new block up to the existing elevated structure, and the lifters and steel beams are then removed, and the structure is left resting on its "new foundation". The project is finished after holes are sealed in the foundation, carpentry work is completed to make access stairs and decking, and utilities are reconnected, followed by grading, landscaping, and other finishing touches.

One of the last but most important items to be installed in the new foundation is flood vents. Smart Vent ensures that the number of vents and their placement in the foundation, relative to finished outside grade, follow all building, FEMA

and NFIP codes and regulations. These vents will relieve the excessive hydrostatic pressure that floods exert on the foundation, providing an automatic entry and exit of floodwater. Each vent has two patented floats that automatically release with rising water and open the bi-directional flood door, rotating it out of the path of the floodwater.

At Smart Vent, the main mission is to reduce the risks associated with flooding through education and pre-disaster mitigation. Smart Vent conducts educational presentations for professionals all over the country. The presentations cover flood venting codes and regulations,

and include the changes seen in the new EC. With a one hour presentation, Smart Vent is able to give one CEU / PDH to most professionals, depending on the state of licensure. State approval is usually obtained through submittal of a course outline. Presentations can be given to small groups of professionals, all the way to entire state chapter groups. **SM**



Author Bio

Steven Ardito is National Sales and Marketing Manager for Smart Vent, Inc., and a proud member of IASM. A member of the Association of State Floodplain Managers, a Certified Floodplain Manager, and member of the Flood Proofing Committee. He is a member of the New Jersey Association of Floodplain Managers, and also a local committee in Point Pleasant Beach, NJ that is undertaking FEMA, NFIP, and CRS issues.