Protecting High-Risk, High-Value Properties from Storm Damage

Temporary flood protection barriers reduce risk for property owners

HOLDEN, MASSACHUSETTS, UNITED STATES, October 5, 2015 /EINPresswire.com/ -- The last decade has brought unprecedented storm damage to U.S. cities, from Hurricanes Katrina and Rita on the Gulf Coast to Superstorm Sandy in the Northeast. While some at-risk cities like New York and New Orleans have built or are evaluating large-scale storm surge protection systems such as the Inner Harbor Navigation Channel surge barrier, these systems can take years to fund and construct.

More property owners—particularly those with high-value assets such as banks or critical operations such as utilities and transportation— are looking to protect their properties and lower insurance premiums with site-specific temporary flood barriers. For owners who are considering this protection, there are three important questions:

1. What are the options?

New products and solutions appear on the market every year. Most allow for rapid deployment within the timeframe allowed by modern storm forecasting.

a. Vertical anchored columns. Vertical I-beam columns anchor to the ground, while aluminum planks or stop-logs slide down to provide flood protection. Lateral and diagonal bracing can be added for strength and stability. Advantage: Modular designs and height can be customized based on site needs. Walls are sturdy and resistant to debris collisions.

b. Membrane barriers. This common technology uses the pressure of the water on the flooded side to seal a groundsheet down. It is then connected to a lightweight vertical structure with diagonal members. Advantage: Easy storage and rapid deployment.

c. Inflatable barriers. These barriers are put into place and filled with water to provide weight and stability. Height is limited and they require more storage space than membrane barriers. Advantage: Less time to set up than traditional sandbagging.

d. Custom barriers. Customized solutions are available for transportation and underground systems. These may include gates to close off subway stairs and inflatable blockages for underground tunnels. Advantage: Reliable solutions for highly specific applications.

2. Which is right for my property?

A variety of site-specific questions must be answered before determining the appropriate level of protection. Primary decision drivers should include the potential water levels and wave heights, the risk of large debris strikes, the property owner’s budget, and capacity for storing barrier components.

3. Are independent testing and certification required?

Many insurance companies require certification of flood protection technology before offering a reduction in premium. Whether or not their property is governed by regulations that require testing, individual property owners are still wise to rely on certified products and appropriate testing to ensure that their investment will provide reliable and safe protection.

• For water elevation under 3 feet, the Association of State Flood Plain Managers (ASFPM), FM Approvals, and the US Army Corps of Engineers (USACE) National Nonstructural/Flood Proofing Committee (NFPC) have collaborated on a national program of testing and certification for flood barrier products. As a part of this program, the USACE operates a facility in Vicksburg, MS, to test temporary flood barriers for static water, wave induced hydrodynamics, overtopping, and debris impact. Look for products that have been through this process.

• For water elevation over 3 feet, custom testing is advised. In the case of the high-profile temporary flood wall at One World Trade Center/The Freedom Tower in Manhattan, owned by the Port Authority of NY and NJ (PANYNJ), full-scale offsite testing was completed on up to 8-feet-high sections of plank-type flood barrier to determine structural integrity under test conditions, provide information about system response and evaluate possible performance at higher loads. This included replication of the ground surface and soil, as well as hydrostatic and load testing to simulate debris strike, using strain gauges, temperature detector probes, position sensors, load cells, accelerometers, piezometers and high-speed video cameras.

When evaluating temporary barrier protection, property owners should consult their insurance carriers and determine what testing is required for their situation. To ensure the best return on investment, choose products that have been reliably tested at the USACE facility and work in collaboration with the chosen vendor and, when appropriate, a qualified testing laboratory.

About Alden
Alden Research Laboratory, Inc. is an acclaimed leader in solving flow-related engineering and environmental problems. The firm’s experience in mitigating storm-related threats includes testing for One World Trade Center in Manhattan, and modeling the New Orleans Inner Harbor Navigation Channel surge barrier.

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