

Case Studies

Zero's Flood Barrier Shield Protects Vermont Theater In Epic Hurricane Irene Floods



Zero's Flood Barrier shields, installed on five doorways of the theater, helped keep the building dry when Hurricane Irene filled the parking lot.

While floodwaters raged through the heart of Brattleboro, Vermont, in the aftermath of Hurricane Irene, the town's **New England Youth Theatre (NEYT)** remained dry. Flood Barrier Shields from Zero International installed at the theater's five doorways played a feature role in the successful flood defenses integrated in the building design by the Putney, Vermont, firm of Greenberg Associates Architects.

The theater, designed and built in 2006 is located within the 100-year flood plain of nearby Whetstone Brook. The building's floor slab is only a few inches above the flood plain.

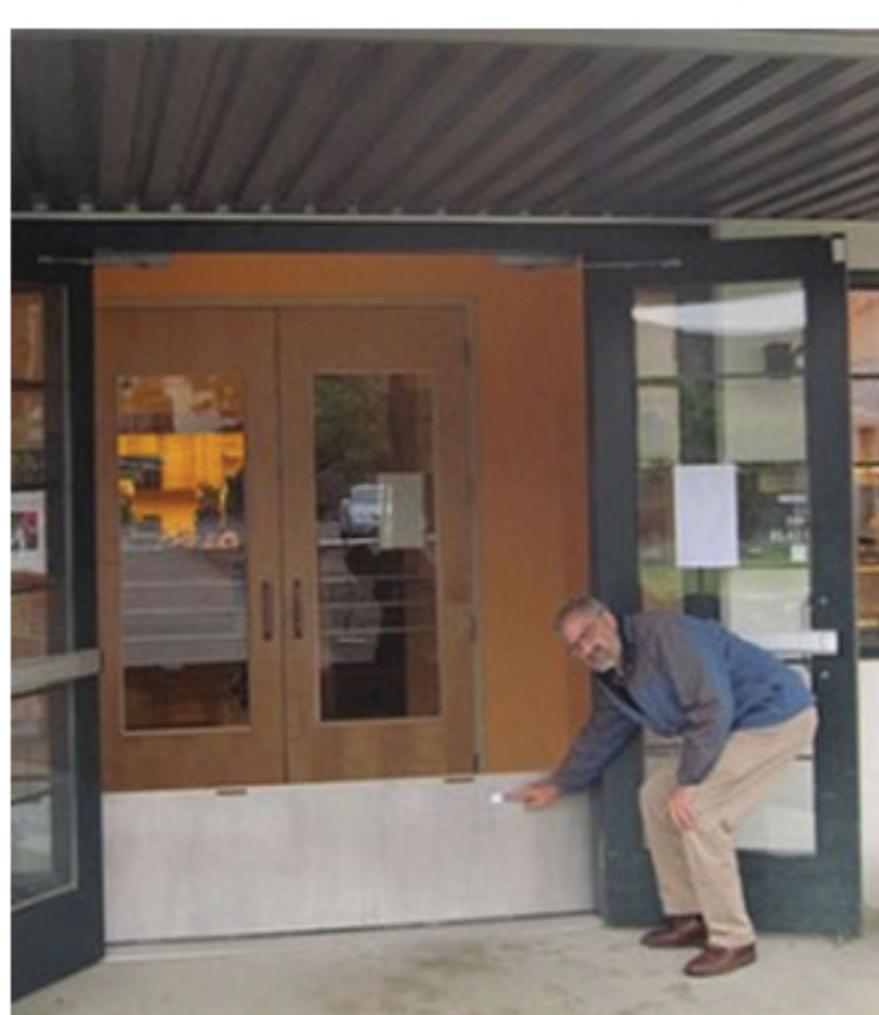
Prompted by Federal Emergency Management Association (FEMA) regulations, the building team implemented a floodproofing plan designed to keep the theater as watertight as possible. Key construction elements of this plan included: reinforcing concrete flooring to resist hydrostatic pressure; extending the concrete perimeter wall to three feet above the floor slab; added impact protection at the most exposed corner of the building; and using water-resistant materials for the bottom 12 inches of all walls and

partitions.

To protect the five doorways in the perimeter wall, Greenberg Architects principal Chip Greenberg specified a solution which he describes as "inexpensive and effective." Custom-fitted Flood Barrier Shields from Zero International were made for each door, and pre-mounted in vertical channels attached to the interior-side door frames were in place and ready for the 1/4 inch thick aluminum flood barriers to be inserted in preparation for rising waters.



The shields were easily inserted in the channels to provide a watertight barrier.



Architect
Chip Greenberg points to high-water mark.

When the flood waters receded, the debut of Flood Barrier Shield at New England Youth Theatre received accolades. The only post-Irene costs were for replacing a few square feet of damp carpet.

Although the 20-inch high flood barriers installed on the doors exceeded FEMA level requirements by almost a foot, waters from the overflowing Whetstone Brook came up just 4 inches from the top of the barrier.

"This reminded us all that a 100-year flood is only a statistical concept. NEYT is now considering extending the gates another 10" higher. While many of the control measures described were built into the foundation of the building, floodgates such as those installed at NEYT can fairly easily be retrofitted into an existing building. This may be the best insurance against 'the next one'", Architect Greenberg commented.

Zero's Flood Barrier Shields (FBS) are engineered to provide a watertight barrier that protects and prevents water ingress through doors and windows.

Midwest Spring Floods No Match For Flood Barrier Shield

Two feet made all the difference for the owners of a home in Iowa surrounded by floodwaters in March, 2010. As ice jams forced waters of a nearby creek over its banks, the couple installed a Flood Barrier Shield (FBS) to seal off the doorway between the low-lying garage and the interior of the house. As floodwaters in the garage rose to three feet – two feet above the door threshold – FBS completely sealed off the opening. The only water penetrating the limestone-constructed house bubbled up through drains and was easily mopped up.

After ordering their Flood Barrier Shield from Zero, the owners as directed had pre-installed vertical mounting channels on the frame of the door. So when the ice-jammed floodwaters began rising, they were ready. Reporting their personal experience they noted, "The river was coming up pretty fast, and we started moving belongings to higher levels. As soon as we saw water in the basement, we inserted two flood barrier panels into the channels, one on top of the other – they dropped right in place – and hoped for the best." The best turned out to be all they hoped for – virtually no water seepage through the door, a dry interior, and safe possessions.

Expressing their gratitude, the homeowners concluded by saying, "Thank Youyour flood barrier shield saved our home; your product is a blessing. We want to share with others how well it worked for us, to let them know it could prove to be the one thing that saves their possessions."

A Flood Barrier Shield installed in this doorway of a Midwest home protected the interior of the house when floodwater in the garage rose to a height 2 feet above the threshold.