

Hammerhead™ Aluminum Flood-Log System: Village of Island Park Firehouse



HAMMERHEAD ALUMINUM FLOOD PLANKS

The Client:

The Island Park Firehouse, on Long Beach Road, is the center of emergency operations for the Village and it houses critical resources for disaster response.

Island Park is a charming village located in Nassau County on the southern part of Long Island, in New York State. Incorporated in 1926, the village covers an area of about 1.5 square miles and has a population of slightly over 2,000 people. Island Park is known for its close-knit community. Its idyllic location near the coast offers beautiful scenery and a variety of water-related recreational activities.

Island Park is adjacent to Long Beach, Lido Beach and Point Lookout, all popular seaside destinations.



The Challenge:

Due to its proximity to the coast, Island Park has experienced severe flooding in the past. Specifically, both Superstorm Sandy and Hurricane Irene brought significant flood damage to the community. These major storms caused damage to the Village and the firehouse that took significant time to recover from.

In addition to these storms, King Tides and microburst storms of heavy rain threaten Island Park's infrastructure.

Island Park sought a solution to protect their firehouse as it serves as critical infrastructure during future storms and serves as a base of operations for Island Park's emergency response. Since being renovated following Superstorm Sandy, the Village needed a cost effective and easy to deploy dry floodproofing system to protect the firehouse against damage in the event another flood event were to occur.

Based on the latest forecasts, the risks of high impact flood events are increasing for Island Park. As recent as December of 2022 nearly 85% of the Village's roadways were under water due to storm flooding ([Long Island News](#)). With warming oceans and melting glaciers contributing to rising global sea levels, there is now a 68% risk of at least one flood over 6ft taking place in the community between 2023 and 2050 ([Risk Finder](#)).

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Goals:

Garrison Flood Control aimed to enhance the resiliency of the community and the firehouse by delivering an innovative and efficient flood protection system. The ultimate objective was to safeguard all firehouse's doorways, windows, and bay doors against floods, thereby ensuring the security of the structure. Our approach involved deploying a system that was cost effective, rapidly deployable and stored compactly, yet provided durable protection against severe floods.

The Three Critical Criteria Were:

Ease of Deployment: The flood protection system had to be user-friendly, quick to set up, and straightforward enough to be installed by people of varying physical abilities and skill levels. This was a crucial aspect, especially during emergencies when every second counts.

Compact Storage: Recognizing the limitations of space in many buildings, Garrison aimed to provide a system that could be conveniently stored without occupying much space. This would allow for easy organization which eliminates clutter and streamlines the deployment process.

High Protection Level: The proposed system needed to provide robust flood protection, specifically for heights up to 6.5 feet. By setting this as a benchmark, the system would cater to a wide range of flood scenarios, thereby significantly reducing the risk of water damage and ensuring the protection of the firehouse.

Solution:

To meet the specific needs of Island Park's firehouse, Garrison Flood Control provided the Hammerhead™ Aluminum Flood Plank system. This decision was driven by the ability to protect against flooding while aligning with the essential requirements of ease of deployment, compact storage, and high protection level.

The Hammerhead™ system utilizes sturdy, aluminum planks that are easily slotted into pre-installed U-Channel posts and tightened down against neoprene seals, quickly forming a reliable flood barrier. Planks contain internal ribbing for additional strength and are manufactured using a durable 6063-T5 aluminum. Posts incorporate neoprene seals, tightening bolts and caps that apply downward pressure to the system, enhancing the seal between planks.

Hammerhead™'s design, using a series of roughly 8" tall planks, is easy to transport as planks weigh only 2lbs per linear foot and can be moved by one person. Aluminum planks are conveniently stacked and stowed away when not deployed, meeting the need for an efficient use of space in the firehouse.



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Furthermore, the Hammerhead™ system delivers robust flood protection up to the required height of 6.5 feet. Hammerhead™ was deployed at the main entrance, various windows, the back patio door, and, most importantly, the four oversized fire truck bay doors. To bolster the support against hydrostatic pressures for these larger doors, removable center posts with concrete anchor plates, and additional kicker supports were added. This ensures that the flood barrier system can handle the hydrostatic pressures expected during a typical flood.



Summary:

Island Park, a scenic village in Nassau County, New York, found itself in need of an effective flood protection system for their firehouse. Following Superstorm Sandy, Island Park's firehouse underwent significant renovations. Since then the threat of flooding has been escalating, with recent storm flooding in 2022 submerging nearly 85% of the village's roadways.

The firehouse was identified as a critical infrastructure facility and emergency response hub as the firehouse serves as Island Park's base of operations for emergency management. The client required an easy-to-deploy and store system, capable of withstanding flooding up to 6.5 feet, to protect doorways, windows, and fire truck bay doors.

To address these challenges, Garrison Flood Control provided the Hammerhead™ Aluminum Flood Plank system to shield the firehouse's main entrance, various windows, the back patio door, and four fire truck bay doors against floodwaters. For the larger doors, additional support against hydrostatic pressures was incorporated through removable center posts with anchor plates inserted into the concrete and additional kicker supports added.

By deploying the Hammerhead™ system, Garrison Flood Control delivered a solution that bolstered Island Park's resilience against the increasing flood risks, significantly improving the village's key emergency response infrastructure.

Takeaways:

- Hammerhead™ flood logs are made of durable 6063 T-5 Aluminum that provide many benefits over other solutions.
 - **Strength:** 6063 T-5 aluminum has a high tensile strength, which means it can withstand a lot of force without breaking. This makes it ideal or use to defend against the force of severe storm surges.
 - **Lightweight:** 6063 T-5 aluminum is much lighter than steel, which makes it easier to transport and install. The aluminum flood planks take up minimal space while providing a quick and easy deployment process.
 - **Corrosion Resistance:** 6063 T-5 aluminum is resistant to corrosion, because flood water can be contaminated with salt, mud, and other corrosive materials, but 6063 T-5 aluminum will not corrode in these conditions.
- Island Park's firehouse underwent significant renovations following Superstorm Sandy and required additional flood protection measures to prevent future damage.
- Recent flooding in December of 2022 left nearly 85% of Island Park's roadways submerged under flood water, highlighting the need for dry floodproofing.
- Hammerhead™ Aluminum Flood Planks easily slot into installed U-Channel posts to create a durable flood wall.
- Hammerhead™ was deployed at the firehouse's main entrance, back patio doorway, various windows and the four fire truck bay doors.
- Removable center posts with concrete anchor plates were installed to withstand the expected hydrostatic pressure documentation.
- [View Hammerhead Testing](#)

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