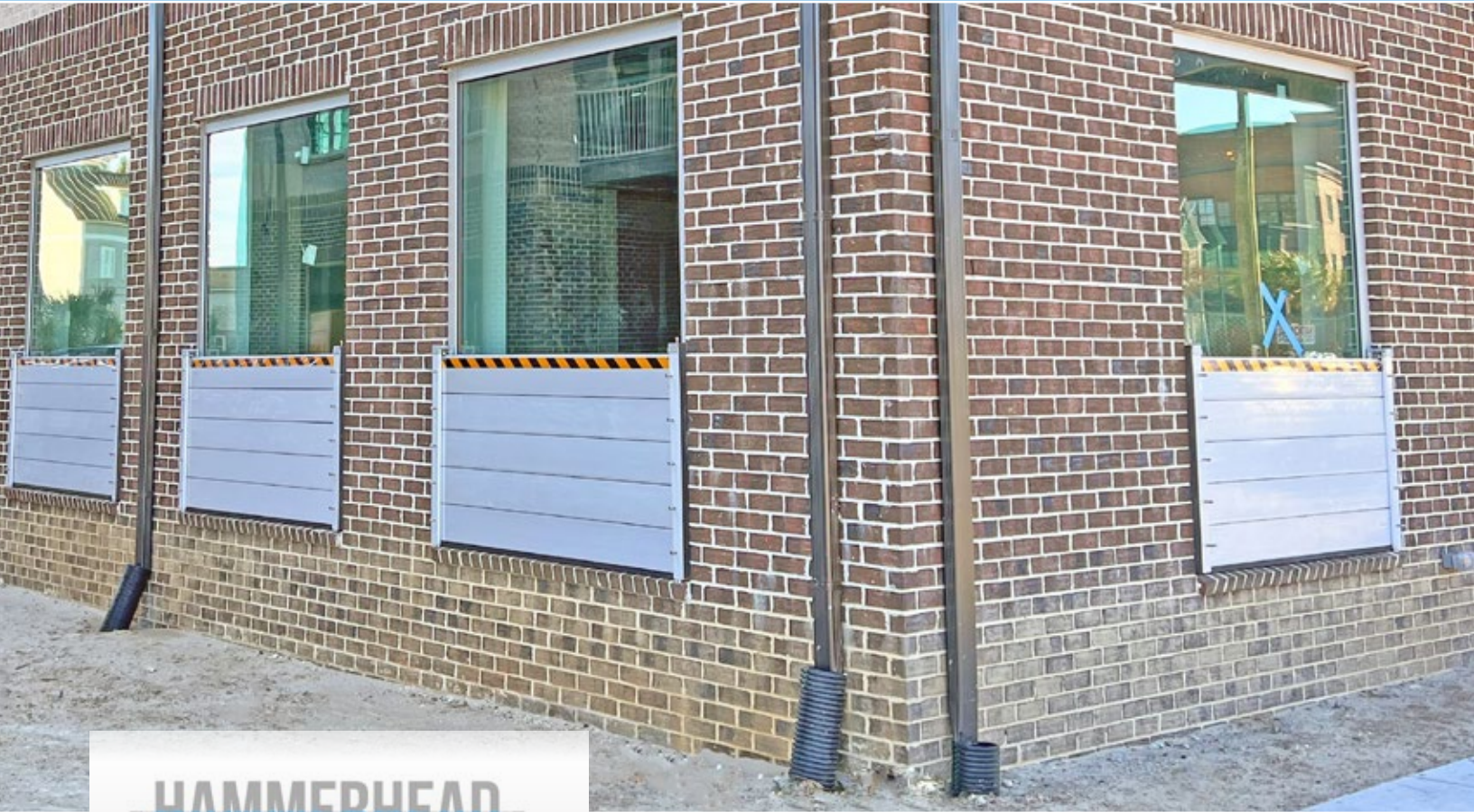


Hammerhead™

The James Lewis Jr. Eastside Apartments
Charleston, SC



HAMMERHEAD ALUMINUM FLOOD PLANKS

The Client:

Creative Builders Inc. is a well-established construction firm, located in Greenville, South Carolina. It was commissioned by the City of Charleston to build affordable housing for the City in the Eastside neighborhood of Charleston. The James Lewis Jr. Eastside Apartments consists of 400 residential apartment units as well as retail space and is designed to bring affordable housing to the Charleston peninsula as well as contribute to the revitalization of the Eastside neighborhood.

The Challenge:

The new build of this apartment complex is located in a known flood zone in the city of Charleston. Therefore, by code, the city requires a series of measures that ensure buildings within a dedicated flood zone are safe and protected. According to the city legislature, building in a Charleston flood zone requires an Elevation Certificate, Dry Floodproofing Certificate, V-Zone Breakaway Wall Certificate, V-Zone Design Certificate as well as compliance with the city matrix of FIRM (Charleston Flood Zones). Additionally, all new construction's DFE (Design Flood Elevation) must be equal to the BFE (Base Flood Elevation) plus 2ft of freeboard (City Flood Compliance Matrix). To meet the requirements, Creative Builders needed durable and effective flood barriers that would satisfy the requirements of the city to properly build in the flood zone. In the case of the Eastside apartments, the FEMA flood maps showed an AE11, meaning the DFE should be at AE13. With surveys showing ground flood elevations of 7ft-10ft, this meant that protection heights of up to 6ft would be required. Additionally, some openings included both doors and somewhat raised windows and others were double wide openings, requiring longer spans of protection.

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Goals:

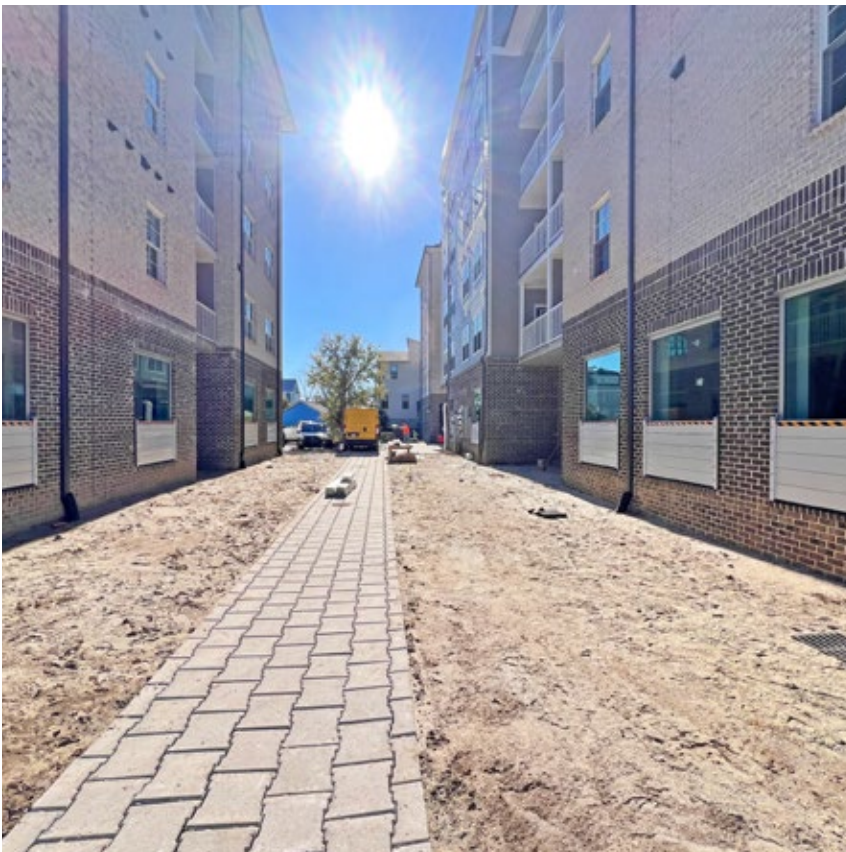
Our overall goal was to assist the team at Creative Builders by outlining and defining the perfect flood barrier solutions that would complement their overall project build. The vision for outfitting the apartment complex with flood protection was to focus on all the doors and windows that fell below the DFE and were located in the designated flood zone. Our mission was to provide a durable solution that could hold up against severe weather and potential storm surges that frequently bring severe flooding to Charleston. Additionally, the system needed to be economical, attractive, and easy to deploy in advance of expected flooding. Furthermore, due to limited storage space for the flood panel system, the large number of openings to be protected, and the limited crew available to deploy the system, the flood barriers needed to store compactly, transport easily and be lightweight.

The Solution:

We decided that the optimal form of protection for Creative Builder's efforts was Garrison's Hammerhead™ Aluminum Flood Plank system, which would assist in defending all of the doorways and windows. Using installed U-Channel posts, Hammerhead™ Flood Planks slide in and stack on top of one another to create a durable and effective flood wall. Specialized seals both between flood logs and within the support post ensure a watertight seal. The Garrison Flood Control team traveled to the build site and conducted comprehensive field measurements to ensure that the Hammerhead™ Flood Planks fit perfectly into each individual protection area.

In total, Garrison was able to provide Hammerhead™ Flood Plank systems to achieve complete ground level protection of all doors as well as windows. Specifically, 48 separate flood protection barriers were custom cut and fit to meet the specific requirements for both height and width.

For this project, Creative Builders chose to conduct the installation of the barriers, with guidance from Garrison, though complete installation services are available via Garrison for those clients unable to do their own installation work.



Summary:

Creative Builders Inc. faced a significant challenge when building the James Lewis Jr. Eastside Apartments in Charleston, South Carolina: constructing 400 affordable housing residential units and retail space in a recognized flood zone. The City of Charleston required strict adherence to several regulations, along with compliance with flood elevation standards. "We've been working hard to make it happen, the community needs it." said Geona Johnson, the Housing Director for the city of Charleston ([Post and Courier](#)).

Creative Builders sought help and guidance from Garrison Flood Control as experts in the flood protection space. The goal was to create durable and effective flood barriers that could withstand severe weather and potential storm surges. The solution provided by Garrison Flood Control was the Hammerhead™ Aluminum Flood Plank system, a robust solution capable of defending the vulnerable areas of the buildings. The Garrison Flood Control team measured on-site and the Creative Builders team installed the system, crafting 48 custom barriers to provide comprehensive ground-level protection. This ensured Creative Builders' project not only met city requirements but also provided secure and flood-resistant accommodation.

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 for use to defend against the force of common 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.
- The City of Charleston, South Carolina requires a series of certifications to ensure that flood protection is a priority for all new construction ([Charleston Flood Zones](#)).
- Hammerhead™ Aluminum Flood Planks slide into installed U-Channel posts with the ability to stack and create a durable flood barrier.
- All on-site measurements were conducted by the Garrison Flood Control team while Creative Builders conducted the installation.
- Garrison was able to custom cut and deliver 48 separate flood protection barriers that met the height and width requirements for the City and the project.



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