

# Preserving Coastal Heritage

**PROJECT:** WOOD ISLAND LIFE SAVING STATION AND WATERFRONT RESTORATION  
KITTERY POINT, MAINE

**FIRM:** TIGHE & BOND  
PORTSMOUTH, NEW HAMPSHIRE

Situated on a small rocky island at the mouth of the Piscataqua River, between New Castle, New Hampshire, and Kittery, Maine, the Wood Island Life Saving Station for many years served as a base for those who went to the aid of mariners in distress in this busy shipping channel. Built in 1908, the station later was used to defend the harbor, then decommissioned after the end of World War II.

In 1973, the Town of Kittery took possession of the island from the federal government. The station had been unused and vacant since 1948 and continued to deteriorate until the Wood Island Life Saving Station Association (WILSSA) spearheaded a renovation effort.



Duncan Mellor  
Principal Coastal Engineer  
Tighe & Bond

The project includes restoration of the original station building, a dock and marine railway for lifeboats and replacement sea walls. WILSSA plans to establish a public maritime museum in the fully renovated station and build a replica lifeboat that can be launched from the station's restored marine railway.

The most recent phase of the project, completed in the summer of 2018, was the restoration of the badly deteriorated sea wall along the island's north side. Logistics were a major challenge. All equipment and materials had to be brought in by barge, timed to coincide with the tides, which made transporting concrete trucks very difficult. Because of that, the use of cast-in-place concrete was limited to rebuilding the sea wall foundation. Massive blocks of precast high-performance concrete were then placed and tied together using fiberglass rebar dowels secured with epoxy to form the sea wall.

"The sea levels traditionally have been rising about a foot every hundred years," says Duncan Mellor, principal coastal engineer with Tighe & Bond. The firm did sea wall assessments for WILSSA in 2012 and subsequently provided full permitting and design for the entire

waterfront restoration. "Because we have already had a foot of sea level rise since the original sea wall was built, and the point of the project is to protect the island for the future, we made the new wall 2 feet higher than the old one."

The Maine Army National Guard's services were instrumental to the rapid construction of the north sea wall.

"The challenging location of the project—a small island off the coast of Maine—and the type of work involved were two of the things that appealed to the guard," Mellor says.

Approximately 60 members of the guard's 136th Engineer Company spent the month of June participating in an Innovative Readiness Training to provide cost-free construction labor for the sea wall project. The guardsmen set up a temporary camp at nearby Fort Foster and worked seven days a week, donating approximately \$500,000 in equivalent wage labor. Besides rebuilding the sea wall and importing 600 tons of rock fill, they also rebuilt the historic shed and installed rough electrical and plumbing throughout the station. ■

**Tom Klemens** is a freelance writer based near Chicago and is a registered Professional Engineer in Illinois.

Large precast concrete blocks were stacked and connected with drilled-in dowels to create the new sea walls on Wood Island.

