



Key Achievements

- Despite the challenges of working right on the Potomac River adjacent to Alexandria, VA's historic buildings, and the discovery of an old ship's wooden hull within the excavation, Hayward Baker Inc. (HBI) successfully constructed a watertight TRD earth retention system on time and with minimal movement to surrounding structures.

The project

Robinson Landing is a \$185 million, mixed-use development that covers a full city block on the Potomac River waterfront in Alexandria, VA. Soils across the site consisted of interbedded layers of silty sand and gravels, soft lean clay, and stiff fat clay. The site is adjacent to the Potomac River and accordingly the natural groundwater table is very near surface.

The challenge

The project involved excavating two levels of below-grade parking for construction of a riverside, five-story above-grade condominium building. A "bathtub" cut-off structure was needed to ensure no impact to surrounding properties through dewatering-induced settlement or migration of contaminated groundwater. HBI had already mobilized to the site when an historic ship's hull was detected that lay partially within the 50,000 sq. ft. footprint at 25-ft below working grade.

The solution

HBI installed an internally-braced, vertical, soil-cement TRD perimeter cut-off extending to a depth of approximately 80 ft and keyed into the underlying marine clay. The TRD wall was designed to function as both a permanent cut-off and temporary ERS and eliminated the need to design for uplift pressure or for external perimeter dewatering. Following detection of the ship's hull, HBI worked with the client to redesign the shoring to facilitate inspection and safe removal of the hull without impacting the project schedule.

"The wall was completed within schedule...and resulted in a finished product that exceeds the design criteria and is performing admirably."

Jon Sandberg, Senior Project Manager, Donohoe Construction Company

Application

Earth retention & shoring
Groundwater control

Technique

Wet soil mixing

Market sector

Residential

Owner

EYA, RTS South Associates LLC, RTS Condo Associates LLC, and RTS Homes Associated LLC

Main contractor

Donohoe Construction Company

Engineer

GEI Consultants Inc.

Keller business unit (s)

Hayward Baker, Inc.