WJE

National September 11 Memorial
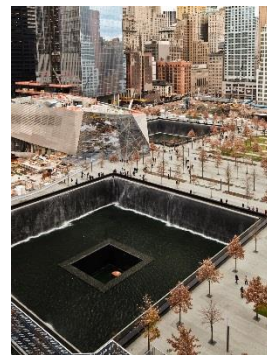
Waterproofing Consulting | New York, NY

CLIENT
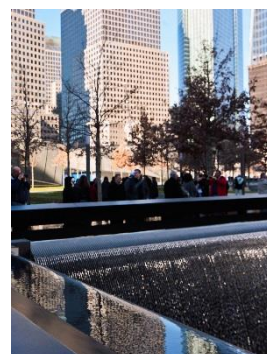
Davis Brody Bond Architects

BACKGROUND

Unveiled to coincide with the tenth anniversary of the terrorist attacks, the National September 11 Memorial is a solemn tribute to the lives lost in 1993 and 2001. The concept for the memorial, "Reflecting Absence," was selected from an international competition and focuses on two reflecting pools that sit within the footprints of the fallen Twin Towers. The pools—each nearly an acre in size—display the largest manmade waterfall fountains in North America and are enclosed by bronze parapets inscribed with the names of those who died in the 1993 and 2001 attacks. The eight-acre Memorial also includes an elevated plaza with a canopy of 400 mature swamp white oak trees and a subterranean museum.

Considered one of the most complicated and challenging waterproofing projects in the world, Davis Brody Bond Architects engaged WJE to join the project team and design the waterproofing systems for the plaza, fountains, and sub-grade areas of the memorial.

SOLUTION

WJE architects and engineers researched waterproofing schemes and produced several conceptual design options. The final plaza solution consisted of a hot-rubberized, asphalt waterproofing assembly with a concrete protection slab and approximately six feet of overburden, including stone paving, growing medium, and mature oak trees. Structural attachments for the overburden occurred in the protection slab without compromising the waterproofing assembly, and penetrations through the waterproofing were limited.

The fountain waterproofing consists of a cold, fluid-applied, asphaltic-urethane membrane. Except for some plumbing lines, all other penetrations within the fountain—including electric conduit for the fountain lighting, tubes used to circulate water, and fountain weirs—occur above the waterproofing membrane. WJE also provided construction observation services throughout the course of the project.

WJE
ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS