

R A N D

Sidewalk Vault Replacement

17 Hubert Street

PROPERTY

RAND designed and administered a sidewalk vault replacement program at 17 Hubert Street, a five-story residential building located in Manhattan's Tribeca Historic District. The building, constructed circa 1900, was converted to a residential property in 1990.

SIDEWALK VAULTS

Named for its location and typical arched roof construction, the sidewalk vault is the extension of basement space beneath pedestrian walkways. Typically as high as the adjacent basements, some vaults extend only part of the width of the sidewalk, while others extend beyond the sidewalk and partly underneath the street. Vault space is commonly used for housing mechanical equipment, such as boilers, tanks, and heaters, or for storage. Many vaults are vented and some have access hatches with steps or mechanical hoists.

WATER PENETRATION

Common in New York City, particularly in former industrial neighborhoods, sidewalk vaults typically last for decades before needing repair or replacement. The most critical factor in vault maintenance, as with many building systems, is keeping water out. Because vaults are underground, water tends to work its way down into them, making them an end point for leaks. Leaks can undermine the vault's structure and damage its contents.

PROJECT OVERVIEW

RAND's structural evaluation of the sidewalk vault at 17 Hubert Street identified cracks, leaks, and signs of structural instability, as well as surface deflection along the sidewalk curbs. RAND recommended immediate shoring of the clay brick arch and complete repair/replacement of the sidewalk vault with new cast-in-place



The century-old vault was reconstructed with cast-in-place reinforced concrete. The original cobblestone roadway was preserved when replacing the sidewalk.

reinforced concrete, new waterproofing, and a new concrete sidewalk incorporating reconstruction of the adjacent cobblestone roadway.

SCOPE OF WORK

RAND specified and administered the following work:

- Demolition and removal of the entire vault space, including the sidewalk and a portion of the road
- Vault reconstruction with reinforced concrete slabs and walls
- Sidewalk reconstruction, granite curb replacement, and restoration of original cobblestone roadway
- New fire sprinkler system
- Domestic water line replacement

EXPEDITING SERVICES

RAND's Expediting Team obtained all of the necessary permits from multiple city agencies, including the New York City Department of Buildings, Department of Transportation, Landmarks Preservation Commission, Fire Department, and Department of Environmental Preservation.

ENGINEER

RAND Engineering & Architecture, DPC

CONTRACTOR

Central Construction Management

CONSTRUCTION COST

\$198,000