

FDNY ENGINE COMPANY 74

Multi-component replacements and upgrades



FDNY Engine Company 74, located on Manhattan's Upper West Side, is housed in a landmarked firehouse originally built in 1888 for horse-drawn apparatus. Designed for the pre-modern era, the narrow 25-foot-wide firehouse presented a complex challenge: how to bring 21st-century functionality to a 19th-century building without compromising its historic integrity.

The design team delivered a forward-thinking renovation that redefined what's possible within tight spatial and regulatory constraints and outdated infrastructure—most notably, the apparatus floor.



Designed for horses, yet required to accommodate a modern fire apparatus, the floor had been supported by temporary columns that were no longer sustainable, necessitating the installation of a new slab. The structural stability of the entire building relies on the steel framing below the apparatus floor, so replacement of the beams was sequenced to prevent any single weak point occurring where the building could fall in on itself. The structural system was altered by removing the center support beams to expand the usable clear-space in the cellar, which required altering the basis by which the beams worked in concert with the load-bearing walls. Lastly, the existing beam pockets in the exterior walls were enlarged and reinforced without negatively impacting the structural stability of the load-bearing walls or disturbing the upper floors.

Construction of the apparatus floor slab was complicated by the addition of a radiant heat system. This system required flexible radiant tubing and a novel slab design that could accommodate heavy vehicular and live loads—without impacting the required head clearance in the cellar or exceeding the existing first floor elevation.

New electrical, gas, and water systems were routed through existing chases and the reprogrammed cellar, which was redesigned to preserve the code-required headspace. These upgrades were executed around legacy HVAC and structural systems.

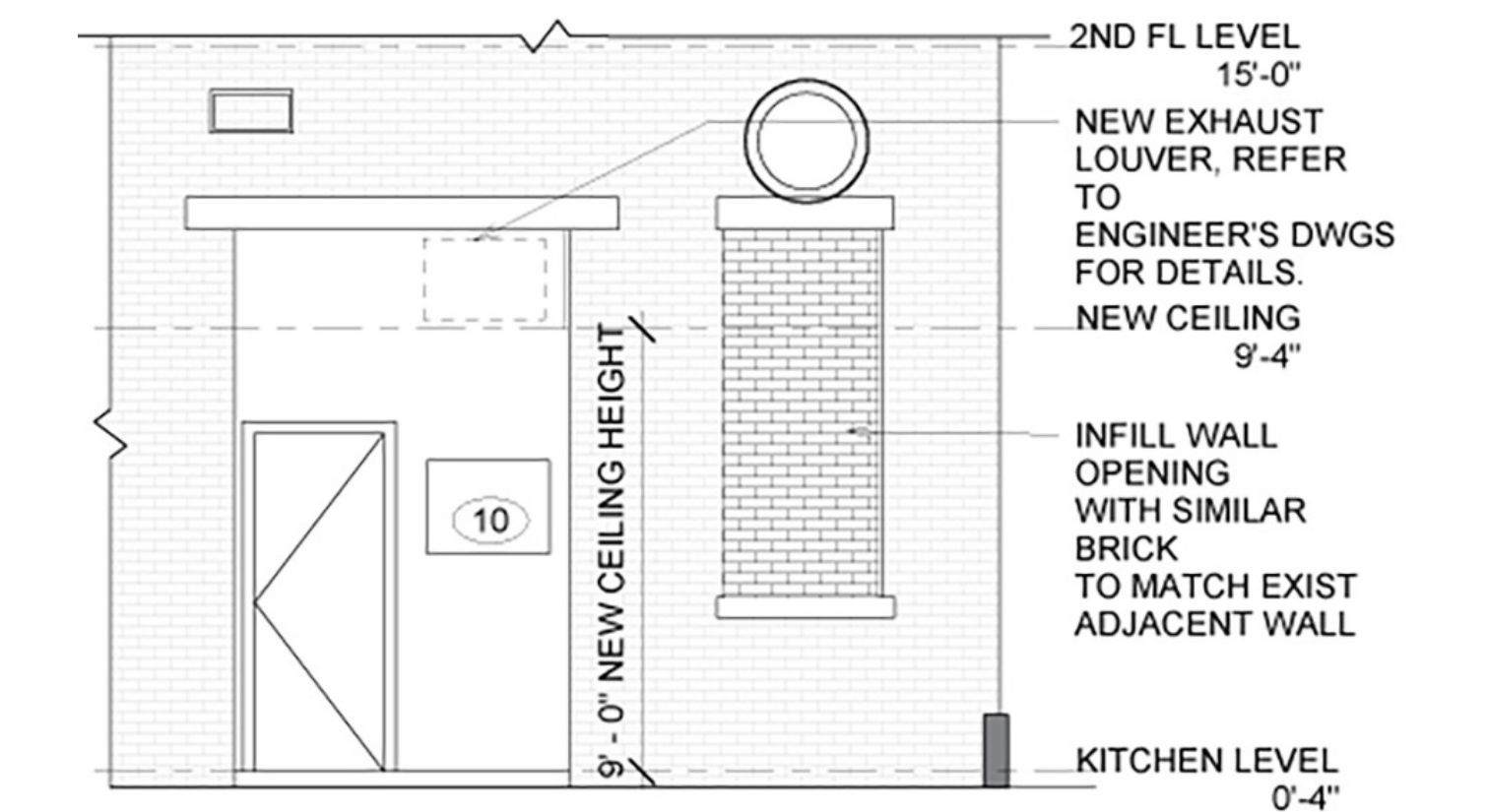
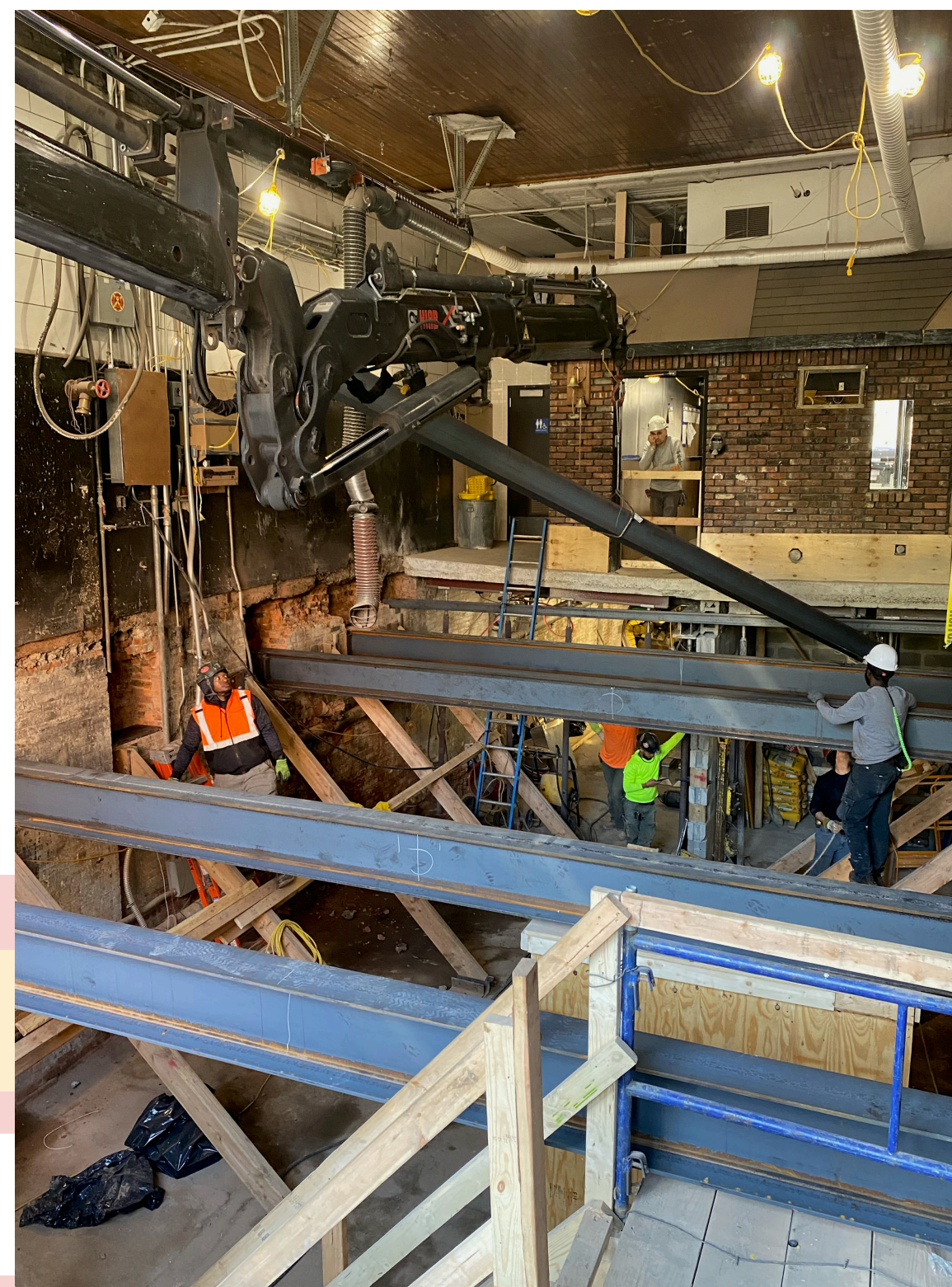
The combustion air duct was extended through the abandoned hose tower to the roof, as there were no available openings on three sides of the building, and installation on the historic façade was prohibited by landmark regulations. This creative reuse of the hose tower highlights how thoughtful design can transform site constraints into innovative opportunities during the restoration of a historic firehouse. The project also included new, custom-fabricated windows that were approved by the NYC Landmarks Preservation Commission as part of the façade preservation.

Additionally, the existing first-floor sitting room, wheelchair-accessible bathroom, and fire fighter's memorial were carefully protected during demolition and re-integrated post-renovation, reflecting a deep respect for both history and occupant needs. The design also included a new ladder for safer rooftop access, full kitchen renovation, and a standby generator for backup power that meets NFPA code.

The project successfully maintained the company's culture identity and ties to its neighborhood (Engine 74's grill features a Jurassic Park-style dinosaur skull as a nod to its neighbor, the Museum of Natural History), making the firehouse a beloved local landmark in more ways than one. Through careful coordination, technical ingenuity, and preservation-minded design, this project exemplifies how landmarked fire stations can be modernized to support the evolving mission of fire service without disrupting the company's history and culture.

PROJECT: FDNY Engine Company 74
Multi-component replacements and upgrades
DEPARTMENT: Fire Department of New York
DESIGN FIRM: IMEG
ARCHITECT: GSAPC





Architectural drawing of a wall section showing a memorial opening. The drawing includes dimensions: 6'-0" for the top section, 1'-5" for the top right corner, 3'-6" for the left section, 4'-0" for the left section, 1'-4" for the right section, and 11'-4" for the bottom section. Labels include 'MECHANICAL DUCT', 'CT-3', 'GLASS PANEL', 'MEMORIAL', 'PL-1 TRIMMED OPENING WITH SOLID OAK FRAME TO MATCH', and 'CTB-2'.

Memorial Elevation