

**R A N D**

**Mount Vernon Public Library**

**Roof Replacement & Exterior Repair; HVAC & Electrical Service Upgrade**

**PROPERTY**

Two-story neoclassical public library designed and built in 1904 with a grant from Andrew Carnegie. With more than 600,000 books and the largest reference collection in Westchester County, the Mount Vernon Public Library serves as the central library for the county.

**BACKGROUND**

The library's deteriorated roof had been leaking for at least 15 years. At its worst, rainwater poured from lighting fixtures, through walls and windows, and down staircases. The flooding damaged floors, ceilings, walls, rugs—and books. Mold developed, causing further damage and raising health concerns among workers and visitors.

In addition, malfunctioning air conditioning and ventilation systems led to stifling temperatures for patrons and staffers. The inhospitable conditions forced the library's periodic closing for days at a time, prompting anger from residents and creating a political issue for the town's elected officials.

**PROJECT OVERVIEW**

Rand surveyed the library's roof and HVAC system and designed and specified a replacement roofing system and other exterior repairs, including



Mount Vernon Public Library replaced its badly deteriorated roof, which had been leaking for 15 years, causing damage to the library and its books.

refurbishing the enormous skylight over the lobby. The HVAC upgrade featured the installation of new heat pump condenser units and fan-coil units for more efficient heating and cooling, a new system of ductwork for better ventilation, and upgraded electrical equipment to service the new HVAC system.

**ENGINEER**

**RAND Engineering & Architecture, PC**  
New York, NY

**CONTRACTORS**

A to Z Roofing (roofing)  
\$396,000 construction cost

Phoenix Restoration (exterior)  
\$565,000 construction cost

ACS System Associates (HVAC)  
\$463,000 construction cost

Naber Electric Corp. (electrical)  
\$391,000 construction cost

**SCOPE OF WORK**

**Roof Replacement & Exterior Repair**

- Removed the existing roof and installed a new monolithic polyurethane foam/silicone rubber roofing system with a 15-year No Dollar Limit warranty.
- Replaced defective brickwork and repointed mortar joints along the parapet, bulkhead, and chimney walls.
- Replaced the glass and metal skylight assembly above the lobby.
- Repaired sections of the stone cornice and the stone pediment.
- Rebuilt brick parapet walls and installed side-mounted railings.



Fan coil units, such as this one in the library's art gallery, replaced window air conditioners, which were often broken.

*(continued)*

# Mount Vernon Public Library

## SCOPE OF WORK *(continued)*

- Replaced coping covers and clay coping segments on parapet walls.
- Installed a new metal and silicone rubber flashing and copper counterflashing system on top of the stone cornice and stone pediment above the main entrance.

Severe leaks and broken air conditioning had forced the library's closing.

- Repaired and refurbished decorative and other metalwork along the rotunda and the roof perimeter.



With more than 600,000 books, the Mount Vernon Public Library, built in 1904, houses the largest reference collection in Westchester County.

- Removed the existing coatings on parapet and bulkhead walls and applied a new cementitious coating with weather-resistant sealer.

- Intelligent controller for centralized system control.
- Electrical service upgrade included new Con Edison transformer, main service switch and meter.
- New distribution panel with fused switches, and new circuit breakers load centers for power distribution to indoor and outdoor units.

## HVAC & Electrical Service Upgrade

- New high-efficiency, state-of-the-art HVAC system includes 47 indoor and nine outdoor condenser units featuring variable refrigerant volume and inverter technologies.
- All fresh air for the library supplied to the indoor units via concealed ductwork and inline fans.
- Fan controls interlocked with indoor units controls for efficient operation.
- New refrigerant and enclosed condensate drain copper piping.



High-efficiency HVAC condenser units installed outside the building increased the library's heating and cooling capacity.



The enormous glass and metal skylight above the library's lobby was replaced.