EN-POWER GROUP | Case Study

One HVAC Upgrade, Multiple Problems Solved

Creative air source heat pump installation reduces utility waste and resident discomfort

Multifamily

Property Profile

- Location: SoHo, Manhattan
- Square Footage: 191,200
- Units: 176
- Year Built: 1966
- Building Style: Luxury, 2-pipe steam

Services

- Mechanical System (HVAC): Ventilation
- Project Construction Management
- Commissioning

Project Achievements

- Project Cost: $30,000
- Annual Utility Savings: 604,800 gallons of water
- Annual Utility Cost Savings: $7,000
- Simple Payback: 4.3 years
- Savings to Investment Ratio: 2.8

Project Creative Solutions

Using existing infrastructure to avoid construction, decreasing cost, time, and disruption to residents and staff

After successfully reducing its source energy use by 15% in the NYSERDA Multifamily Performance Program, The Charlton House, a 176-unit multifamily building located in Lower Manhattan, again engaged EN-POWER GROUP to upgrade its old, inefficient water source heat pump that struggled to properly heat and cool the lobby area. In addition to increased comfort, EN-POWER GROUP aimed to improve the system's efficiency, eliminate high water bills, and streamline operation and maintenance (O&M) procedures by providing a solution that involved minimal construction.

The Charlton House's lobby had its own dedicated water source heat pump for cooling and heating. However, the system was not equipped with a heat rejecting absorption medium (e.g., cooling tower or condenser water loop); instead the system used municipal water that was then directly discarded. This system racked up significant water bills and also struggled to reach desired temperature setpoints, creating resident discomfort and operations and maintenance (O&M) difficulties.

EN-POWER GROUP chose a ceiling concealed horizontal ducted unit that could be used with the lobby's existing register. In addition, we utilized the existing borehole created for the water lines of the original system to run the refrigerant lines and condensate drain lines for the new unit. This creative adaptation of the existing infrastructure minimized on-site construction work and reduced disturbance to residents. Besides design services, EN-POWER GROUP also provided project management services, including coordinating between property staff and contractors, filing for permits, overseeing the installation process, and commissioning the equipment to ensure it performed per its intended design.