

# Cooling Plant and Controls Upgrade Improve Facility's Energy Grade an Entire Letter, from a "D" to a "C"

*Our engineers ensured all construction finished on-time despite needing approval from a multitude of NYC agencies and needing to navigate the COVID-19 lockdown of April 2020*



Multifamily

## Property Profile

- Location: West Village, Manhattan
- Square Footage: 132,000
- Units: 149 Residential and 6 Commercial
- Year Built: 1961
- Building Style: Luxury Multifamily

## Services

- HVAC (Cooling)
- Energy Auditing
- Retro-Commissioning
- Feasibility Study
- Project Construction Management
- Controls
- Rebates & Incentives

## Project Achievements

- Cooling Energy Savings: 45% (7% Source Savings)
- Annual Utility Savings: 139,400 kWh
- Annual Utility Cost Savings: \$22,500
- Annual Carbon (CO2) Savings: 45 metric tons
- Annual Local Law 97 Penalty Savings: \$12,060
- Total Annual Savings: \$34,560
- Total Project Cost with Incentives: \$747,000

## Project Highlight

Despite having to navigate multiple NYC agency approvals and the COVID-19 lockdown of April 2020, our engineers successfully replaced the outdated chiller and cooling tower with high-efficiency upgrades that provided cooling redundancy and reduced energy use by nearly 139,400 kWh and the building's carbon footprint by 45 metric tons annually.

33 Greenwich Avenue, a landmarked cooperative building in Manhattan's West Village, hired EN-POWER in late 2019 to upgrade its outdated electric screw chiller and cooling tower. Our engineers overcame multiple challenges to successfully replace the equipment on time with a far more efficient electric modular chiller plant and cooling tower to help improve their letter grade an entire letter grade from a "D" to a "C".

Originally EN-POWER was hired to conduct its NYC Local Law 87 energy study and retro-commissioning in 2017. Our auditors discovered the facility's outdated electric screw chiller and cooling tower both suffered from major performance issues: the cooling tower fan constantly short-cycled (i.e., turned off and on) leading to resident noise complaints and inefficient operation, and the chiller's performance and reliability had greatly degraded. The chiller's unreliability was exacerbated due to the fact a single chiller unit was carrying the cooling load of the entire building – meaning when the chiller broke down, residents were left completely without cooling.

As part of the cooling system upgrade, our engineers chose a modular electric chiller because it could provide three critical features: redundancy in case of equipment failure, significantly increased energy efficiency, and minimal on-site construction as it could be installed in pieces rather than requiring walls to be torn down. We selected high efficiency motors and variable frequency drives (VFDs) to further reduce energy use. Also, our team was able to incorporate both new systems into the site's existing Building Management System (BMS) to increase ease of operation and reduce client energy cost.

Our engineers overcame multiple challenges to ensure the systems were finished on time in April 2020, including disruptions from COVID-19 lockdowns and securing rigging and permitting approvals from multiple NYC agencies including the Landmarks Preservation Commission, FDNY, and Department of Buildings as Essential Construction per COVID Executive Order 202.6. These upgrades helped the building reduce its energy use and carbon footprint. EN-POWER also secured \$13,000 incentives for the project.