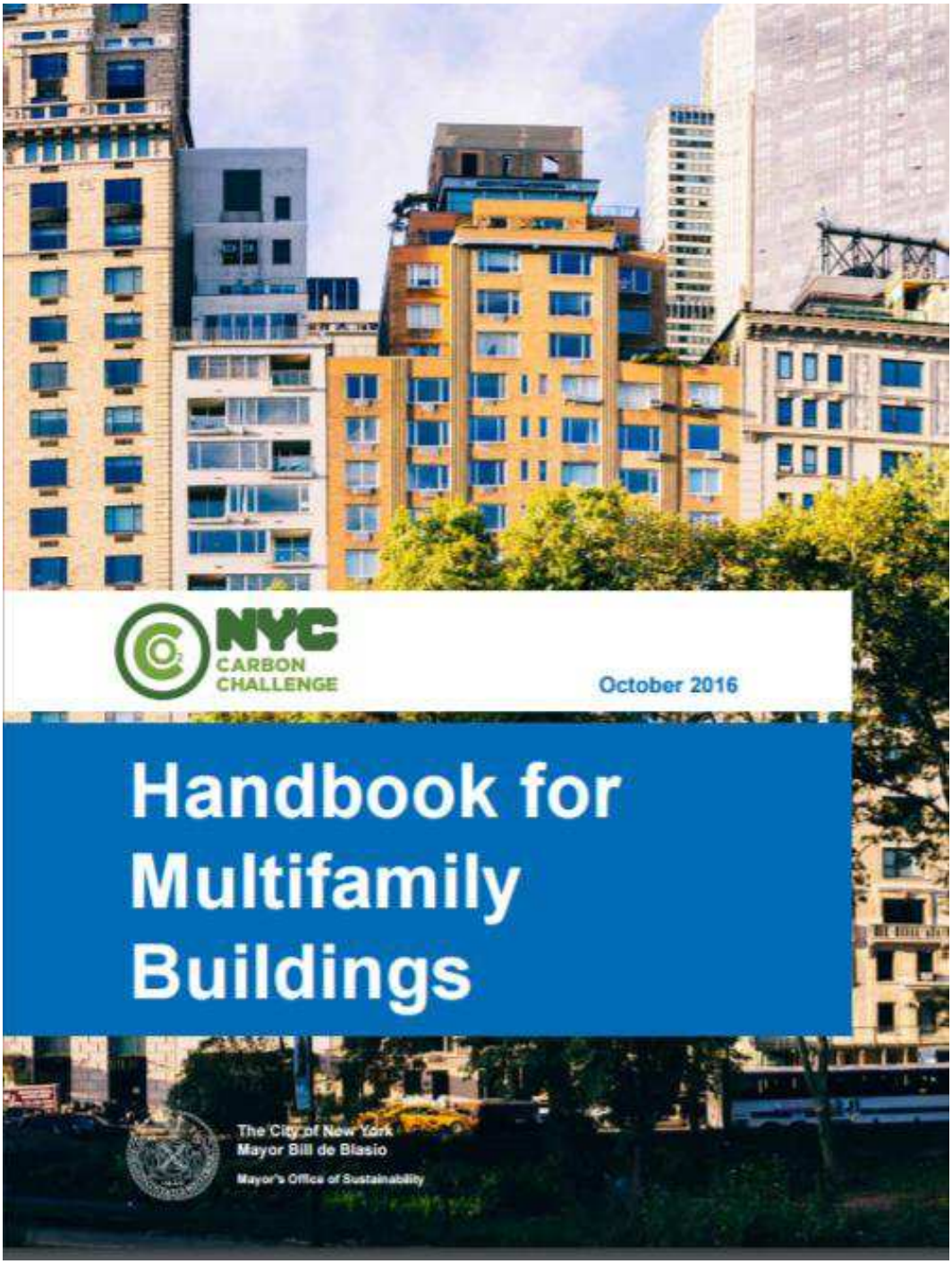


NYC CARBON CHALLENGE

October 2016

Handbook for Multifamily Buildings

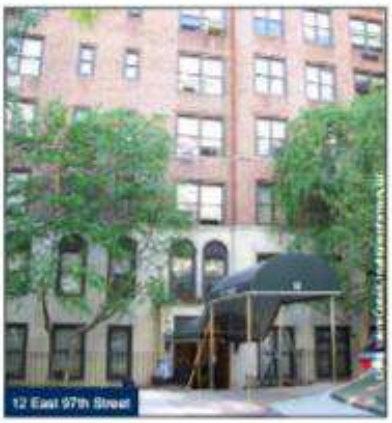
The City of New York
Mayor Bill de Blasio

Mayor's Office of Sustainability

Success Stories

12 East 97th Street

Two New York City Laws Lead to Major Energy and Cost Savings for a Manhattan Co-Op


12 East 97th Street

By the Numbers

Number of Units	107
Total Investment	$579,172
NYSERDA Incentives	$12,114
Annual Source Energy Savings	2,583,003 kBtu
Annual Cost-Savings	$62,000
Simple Payback	9.3 years
Annual GHG Reduction	333.65 tCO_2e

In 2010, more than 80 years after it was built, the mechanical systems of 12 East 97th were far past their prime. Nancy Boyd, the building's board president, and John Slattery, the treasurer, decided to take advantage of the City's Local Law 87 energy audit and retro-commissioning requirements and heating oil regulations to pursue an integrated project to improve the building's efficiency, lower its energy costs, and dramatically reduce its GHG emissions.

Although not required to comply with Local Law 87 until 2022, the board was intrigued by the benefits of early compliance, and became one of the first New York City co-ops to adhere to the law. Building on these efforts, 12 East 97th Street was also one of the first co-ops to join the NYC Carbon Challenge in 2013 with its property management firm, Douglas Elliman Property Management.

The co-op board hired a consulting firm and an energy engineering and design firm in 2010 to complete the Local Law 87 energy audit and retro-commissioning services, which analyzed the building's energy use and identified areas for improvements that, when implemented, began saving energy almost immediately. With the pending expiration of its No. 6 heating oil permit, the board hired an engineering firm that designed a new dual fuel system for the building's boiler, which can burn both natural gas and ULS No. 2 oil, providing fuel choice flexibility for the future.

In addition, the system includes a separate domestic hot water (DHW) heater and storage tank that allows the boiler to be shut down during the non-heating season. By moving quickly to undertake this work, the building even earned a $12,114 grant from NYSERDA through a former GHG emission reduction program.

Capitalizing on the opportunity to combine the boiler upgrade with other improvements recommended by its Local Law 87 energy audit, the board undertook additional energy efficiency

measures, including upgrading the boiler control system, replacing all radiator steam traps, upgrading its common area lighting, installing occupancy sensors in the basement, insulating steam and hot water pipes, and distributing over 300 free CFL bulbs to residents. The board is now considering participating in the Con Edison Multifamily Energy Efficiency Program to install efficient LEDs and water conservation measures such as efficient showerheads and faucet aerators.

Resident Manager Jorge Francisco took over the conversion project prior to completion and continues to manage the Board's energy efficiency mandate. "Properly balancing the system, resolving tenants' heating issues quickly, and fixing steam leaks immediately are critical to running an efficient heating system," he says. To hone his green building skills, Jorge earned the BPI Multifamily Building Operator and Multifamily Building Analyst certifications through 32BJ SEIU. He has also earned the GPRO O&M and GPRO Mechanical+Electrical+Plumbing certifications from the Urban Green Council.

12 East 97th Street's completed upgrades have resulted in an impressive 25% reduction in the building's energy use. Combined with its natural gas conversion, the board has saved the building more than $62,000 in operating costs annually and reduced GHG emissions by over 333 metric tons of carbon dioxide equivalent (CO_2e) - or a 42% reduction from 2011 levels.

Case study prepared by Valerie Corbett of Intelligreen Partners, LLC

Background & Challenges

- 30-year-old boiler with immersion coil and a 1928 boiler were outdated and costly to operate
- 40-year old "buried" No. 6 oil tank created energy waste and needed to be replaced
- Incandescent bulbs, 24-hour building lighting, and uninsulated steam and water pipes added to energy costs
- Original 1928 radiator steam traps caused heating distribution problems

Solution

- Upgraded boiler with new dual fuel burner
- Removed old oil tank and standby boiler
- Installed new gas-fired DHW heater and storage tanks
- Insulated steam and water pipes
- Installed energy-efficient lighting fixtures and motion sensors in common areas
- Replaced all radiator steam traps

Benefits

- Reduced energy consumption by 25% (2015 vs 2011)
- Reduced GHG emissions by 42%
- Able to turn off the main boiler in summer, reducing energy waste and unnecessary maintenance costs
- Received $12,114 in financial incentives from a former NYSERDA program by acting quickly to undertake the upgrades

"In 2010 we were heating the building with No. 6 oil and we wanted to reduce our carbon emissions and have fuel flexibility in the future. Some of our heating equipment was obsolete and inefficient, but the boiler was worth upgrading to dual fuel, with a new gas-fired domestic hot water heater. By refinancing our mortgage and obtaining a grant from NYSERDA we were able to fund the fuel conversion project and a number of low cost energy efficiency measures that produced immediate cost savings."

—John Slattery, Treasurer of the Board