

Empire Building Challenge

Low Carbon Retrofit Project Summary



HUDSON SQUARE PROPERTIES



Empire Building Challenge
PARTNER
Reimagining Low-carbon Buildings

345 Hudson

345 Hudson Street,
New York City

- 978,277 square feet
- 17 stories
- Built in 1931
- Fully occupied building with seven tenants
- 2020 Building Energy Grade: B
- 2019 EUI: 77.6
- Façade: steel frame with limestone clad
- Heating: natural gas steam boiler to two-pipe steam radiators
- Cooling: electric water-cooled DX units

\$5 MILLION
NYSERDA investment

\$30 MILLION+
of private investment



Nordic design principles applied to New York real estate

Hudson Square Partnership is a joint venture with Hines, Trinity Church Wall Street, and Norges Bank Investment Management, that owns 12 buildings totaling 6 million square feet in the Hudson Square, Soho, West Village, and Tribeca districts.

The comprehensive retrofit of 345 Hudson Street takes advantage of tenant turnover from now to 2032 as an opportunity to upgrade the building's infrastructure to new, carbon-efficient, energy cost-saving technology and completely decarbonize the 978,277 square foot property.

The floor-by-floor replacement of packaged terminal cooling units and steam heating with a comprehensive water source heat pump system significantly reduces heating and cooling needs **by recycling heat from different spaces in the building.** The water source heat pump system is accompanied by a new, highly efficient energy recovery ventilation system that minimizes energy waste.

“The carbon reduction and energy efficiency strategy at 345 Hudson, one of our flagship properties, exemplifies Hudson Square Properties’ stewardship and commitment to the long-term strength of our neighborhood. 345 Hudson will provide a roadmap for sustainable practices throughout our portfolio and beyond.”



– Sujohn Sarkar, Managing Director,
Asset Management,
Trinity Church Wall Street



NEW YORK
STATE OF
OPPORTUNITY.

NYSERDA

PROJECT TEAM:

- Hudson Square Properties
- Hines
- URBS
- Buro Happold Engineers

SOLUTION PROVIDERS:

- Modio (Data collection and tokenization)
- Energy Machines (heat pumps, AHU)
- NODA (advanced thermal artificial intelligence)
- Blueprint Power (energy management, asset operation)
- Willis Towers Watson (insurance and risk assessment)

LOW CARBON RETROFIT MEASURES INCLUDE:

- Floor-by-floor replacement of packaged terminal units with water source heat pumps to meet heating and cooling needs
- Dedicated outside air heat recovery system to provide optimal fresh air ventilation into building
- Use of existing fire protection rooftop water tanks for thermal storage
- Connection to adjacent building for sharing of waste heat/cooling when available

Hudson Square Properties brought together a consortium of global solution providers and engineering expertise that took a solutions-based approach and adapted it to local market needs.

“Stemming from the partnership between Trinity, Norges Investment Management, and Hines, with support at the city and State levels, we endeavor to leverage our leadership in sustainability to strengthen our communities.”

– Sujohn Sarkar, managing director, asset management,
Trinity Church Wall Street

This project will demonstrate **the power of thermal networking** through an innovative approach by which heating and cooling is shared between tenants throughout the building and eventually between neighboring buildings. **Heat will be stored** by reusing defunct fire suppression tanks, which first reduces cost, but also allows heat pumps to operate more efficiently, matching heat delivery more closely with building operations.

The Empire Building Challenge

The Empire Building Challenge is a \$50 million investment by New York State to demonstrate different pathways for achieving carbon neutrality in tall buildings.

Through the establishment of a private-public partnership with leading real estate owners and their engineering experts, exciting approaches to cold-climate decarbonization are being tested in the New York market. With the potential to replicate these solutions across the 130 million square feet of real estate controlled by the first cohort of Empire Building Challenge partners and beyond, the impact of each project will accelerate New York’s progress toward the Climate Leadership and Community Protection Act’s (Climate Act) goal of reducing greenhouse gas emissions 85% by 2050.

Join the challenge

Visit nyscrda.ny.gov/EBC or email ebc@nyscrda.ny.gov for additional details on the Empire Building Challenge and to learn how to partner with NYSERDA, reduce carbon emissions, and get involved in the clean energy economy.

¹ Recovery through Retrofits, www.urbangreencouncil.org/content/news/recovery-through-retrofits