



Manhattan Commercial Office Tenant

Building Owner:

Manhattan Commercial Office Tenant

Region: New York City

Number of Buildings: 1

FlexTech Consultant:

Syska Hennessy Group

Sector:

Commercial Real Estate

Square Footage:

186,000 sq.ft.

Pre-COVID Condition:

- Filters: MERV 8
- Ventilation: Air Handling Units with Variable Frequency Drives
- Outside Air: Approximately 27,000 CFM

Study Overview

NYSERDA funded this energy efficiency indoor air quality study that identified the energy use associated with the ASHRAE Epidemic Task Force (ETF) Building Readiness guidance¹ HVAC-related measures aimed at preventing the risk of COVID-19 infection that are feasible at the building. Additionally, the study investigated alternate opportunities that were more energy efficient, yet equally risk adverse from an indoor air quality perspective, as the ASHRAE guidance measures.

Measures Evaluated

Measure Name	Measure Status	Electric Savings (kWh)	Fossil Fuel Savings (MMBtu)	Energy Cost Savings (\$)	Measure Cost (\$)
ASHRAE Epidemic Task Force (ETF) Guidelines Measures Evaluated					
Portable HEPA Air Cleaners in High Traffic Zones on a Schedule	Not Recommended	-17,467.8	0	-\$2,620	\$63,893
Portable HEPA Air Cleaners in All Occupied Zones	Not Recommended	-30,311.8	0	-\$4,547	\$144,700
Portable Humidifiers in High Traffic Zones	Recommended	-4,351.0	0	-\$653	\$1,117
MERV 13 in Secondary Fan Coil Units	Recommended	0.0	0	\$0	\$450
Totals:		-52,130.6	0	-\$7,820	\$210,160
Energy Efficiency Package Measures Evaluated					
Permanent Ceiling Air Scrubbers in All Occupied Zones	Not Recommended	-56,224.6	0	-\$8,434	\$175,220
Permanent Ceiling Air Scrubbers in High Traffic Zones with Occupancy Sensors	Recommended	3,651.7	0	\$548	\$117,230
UVGI in Secondary Units for Cooling Coil and Filter cleaning	Recommended	-131.4	0	-\$20	\$3,520
Recommended Measures Totals:		3,520.3	0.0	\$528	\$120,750

- All energy use and energy cost values are presented on an annual basis
- Negative values represent increased use/cost
- The Energy Efficiency Package Measure savings are presented with the ASHRAE ETF Guidelines Measures Totals as the baseline

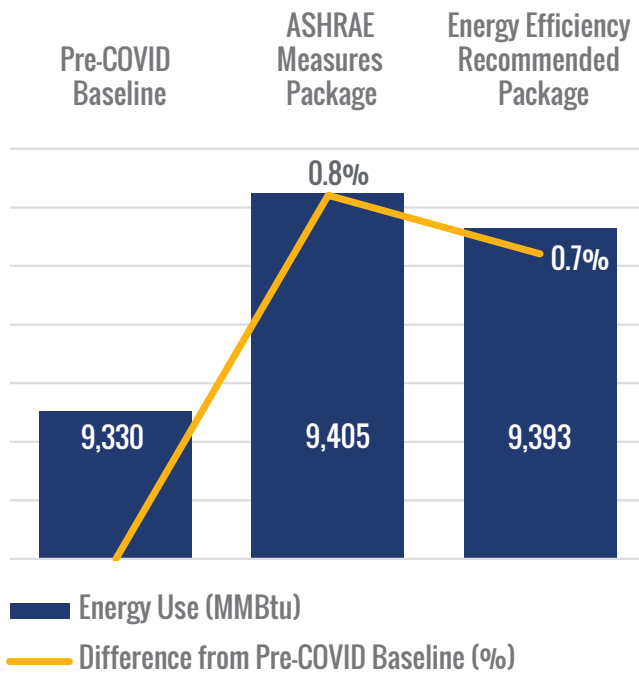
¹ The ASHRAE ETF guidance used for this study was based on one or more of the following document versions: Building Readiness v.5-21-2020, Commercial v.4-20-2020, Schools & Universities v. 5-5-2020, Healthcare v. 6-17-2020, Filtration & Disinfection v. 5-27-2020, ERV Practical Guide v. 6-9-2020

Key Notes

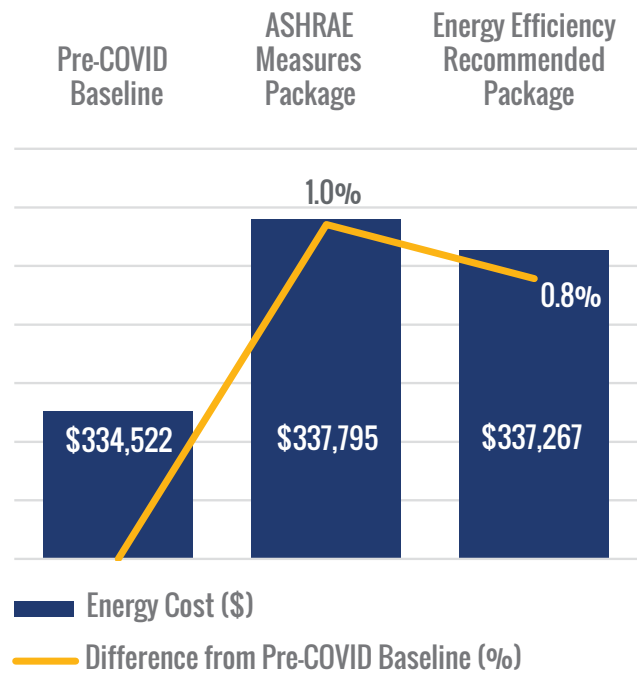
- Permanent ceiling hung air scrubbers equipped with HEPA filters, Ultraviolet Germicidal Irradiation, and occupancy sensors that are installed in high-traffic zones use slightly less energy and have increased cleaning effectiveness than portable air cleaners that are operated on a schedule.
- It is most cost and energy efficient to focus zone-level air cleaning technologies in high-occupancy zones or spaces with poor air quality.
- MERV 13 filters are recommended for the secondary fan coil units that are rarely operated.

Impact Results

Energy Use Impacts



Energy Cost Impacts



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