



520 Madison

Building Owner:

Tishman Speyer Properties, LP and 520 Madison Owners LLC

Region: New York City

Number of Buildings: 1

FlexTech Consultant:

Vidaris, Inc

Sector:

Commercial Real Estate

Square Footage:

1,000,000 sq.ft.

Pre-COVID Condition:

- Filters: MERV 15
- Ventilation: VAV system with chilled water coils and pre-heat coils supplied by 6 central AHUs
- Outside air: 10%

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					
Increase Outside Air Levels + Economizer	Not Recommended	-336,131	-12,937	-\$465,305	\$0
Pre & Post Occupancy Purge	Recommended	-14,447	-1,614	-\$53,378	\$0
Totals:		-350,578	-14,551	-\$518,683	\$0
Energy Efficiency Package Measures Evaluated					
MERV 13 Filters	Not Recommended	110,208	11,268	\$19,871	\$35,640
OA Modulation (only for post-COVID operation)	Recommended	76,743	36	\$203,356	\$50,000
UVGI Installation in AHUs + 10% OA	Recommended	118,093	0	\$375,582	\$148,350
UVGI-Based Portable Devices	Recommended	-113,480	186	-\$19,291	\$486,000
Air Sealing - Lobby Elevators	Recommended	-3,329	6,708	\$5,303	\$3,999
Heat Recovery	Recommended	52,102	6,032	\$220,495	\$150,000
Totals:		53,386	12,926	\$582,088	\$788,349

- 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

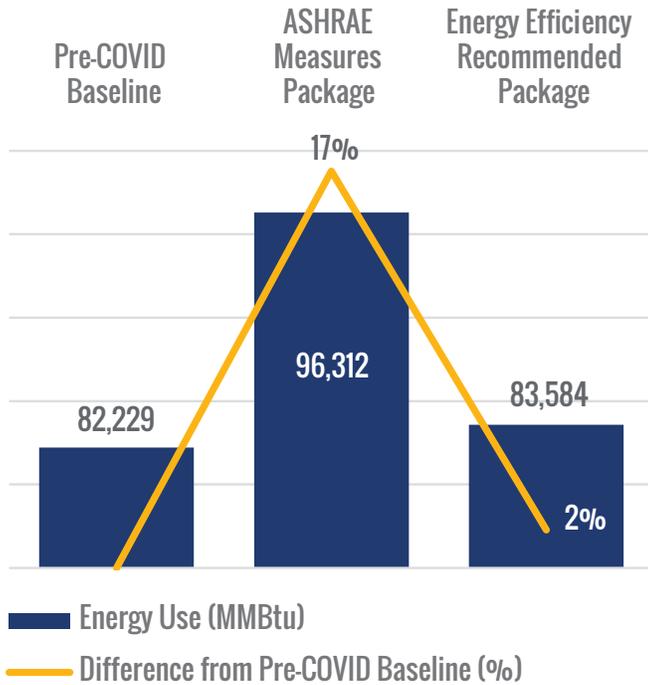


Key Notes

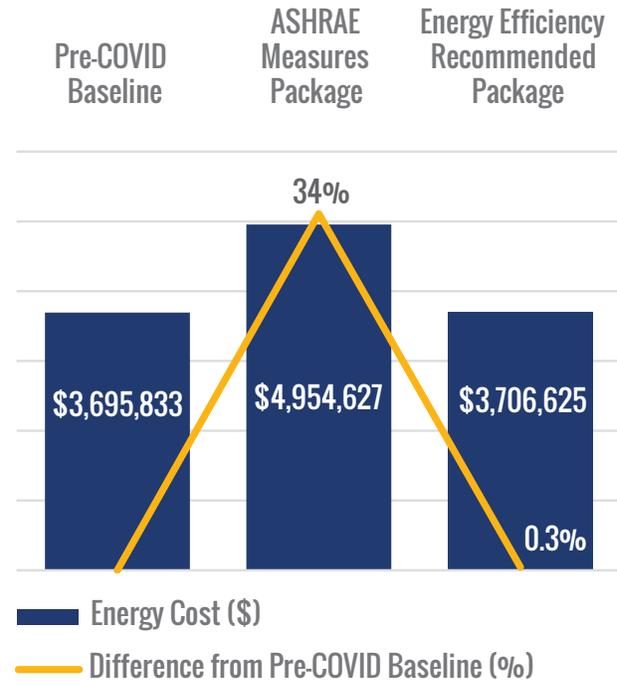
- Increasing outside air levels + economizer cycle is more energy intensive than installing UVGI in the AHUs + operating at 10% outside air
- MERV 15 filters are in use at this building, therefore reducing filters to MERV 13 was not recommended

Impact Results

Energy Use Impacts



Energy Cost Impacts



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