



School District in Western New York

Building Owner:

School District in Western New York

Region: Western New York

Number of Buildings: 4

FlexTech Consultant:

Wendel Energy Services, LLC

Sector:

PreK-12 School

Square Footage:

573,700 sq.ft.

Pre-COVID Condition:

- Filters: Predominantly MERV 8; up to MERV 13 for some units
- Ventilation: This school district uses a combination of central HVAC, including dedicated outside air systems, chilled beam cooling, and unit ventilators to provide conditioned and outside air into the buildings with a total combined supply airflow of 313,240 CFM
- Outside Air: 41%/ 129,100 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					
Pre & Post Occupancy Purge	Not Recommended	-1,326,986	-13,767	-\$151,180	\$0
Increased Ventilation	Not Recommended	-71,842	-1,856	-\$12,825	\$0
MERV-13 Filter Upgrades	Not Recommended	-136,135	0	\$7,382	\$13,855
Shutdown Energy Recovery	Not Recommended	-257,712	-11,917	-\$76,934	\$0
Totals:		-1,792,675	-27,540	-\$233,557	\$13,855
Energy Efficiency Package Measures Evaluated					
HVAC Equipment Improvements ²	Not Recommended	1,670	1,470	\$7,232.00	\$411,751.00
HVAC Equipment Improvements ²	Recommended	1,082,281	23,492	\$181,956.00	\$2,700,534.00
HVAC Controls Improvements ²	Not Recommended	0	160	\$772.00	\$57,486.00
HVAC Controls Improvements ²	Recommended	782,165	4,204	\$93,916.00	\$845,207.00
Lighting Improvements	Recommended	335,825	-42	\$40,696.00	\$599,411.00
Domestic Water System Improvements ²	Not Recommended	0	293	\$1,417.00	\$170,984.00
Domestic Water System Improvements ²	Recommended	0	171	\$9,666.00	\$31,470.00
Recommended Measures Totals:		2,200,271	27,825	\$326,234.00	\$4,176,622.00

- 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

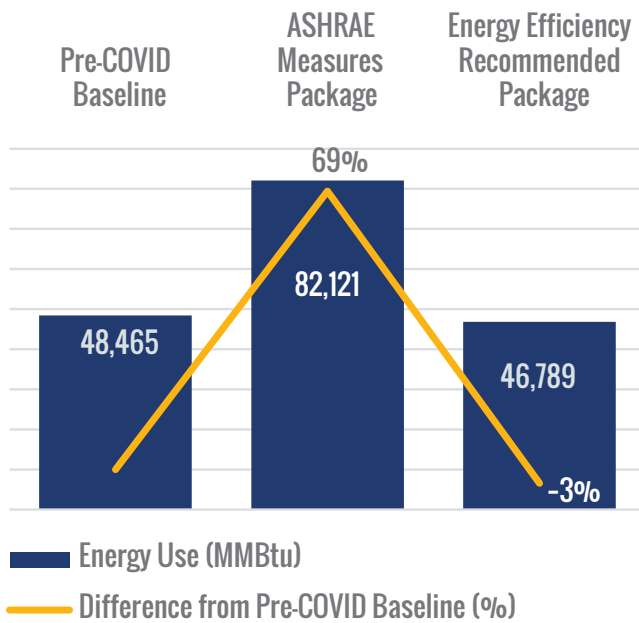
² See the Key Notes on the next page for additional detail

Key Notes

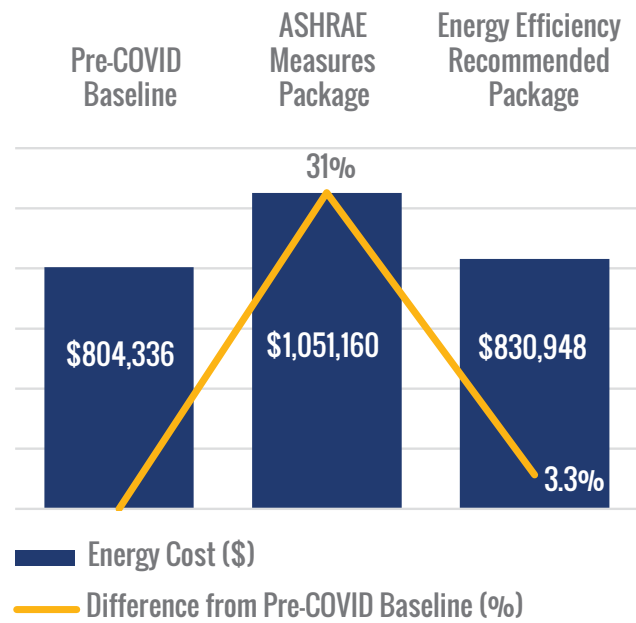
- This study looked at a few measures that were quickly dropped due to very high paybacks, namely Aeroseal in the ductwork, boiler reset controls, and instantaneous hot water.
- The energy efficiency package measures are grouped into high-level categories spanning all four buildings that were part of the study. The categories are further broken out by recommended and not recommended measures. The individual measures and recommendation statuses per building are available in the full report.

Impact Results

Energy Use Impacts



Energy Cost Impacts



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