



## Finger Lakes Community College

### Building Owner:

Finger Lakes  
Community College

**Region:** Finger Lakes

**Number of Buildings:** 1

**FlexTech Consultant:**  
EMCOR Services Bellem

**Sector:**  
College/University

**Square Footage:**  
382,223 sq.ft.

### Pre-COVID Condition:

- Filters: MERV 8 pre-filters/MERV 13 final filters (in 12 air handling units (AHUs)), MERV 13 (in 3 AHUs), MERV 8 filters (in 2 heating ventilation units (HVUs))
- Ventilation: 15 AHUs and 2 HVUs, operating on a schedule that shuts them down from late at night until the campus opens up in the morning. Two of these are constant volume (CV) dual zone units, one is a single zone CV unit, twelve are variable air volume (VAV) units with variable frequency drives (VFDs), and two are CV makeup air units (MAUs)
- Outside Air: 140,466 CFM peak (70%), 85,384 CFM average (43%)

## 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 guidance<sup>1</sup> 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 (\$)
<b>ASHRAE Epidemic Task Force (ETF) Guidelines Measures Evaluated</b>					
40%-60% Relative Humidity	Not Recommended	-15,827	0.0	-\$1,444	\$648,750
Run AHUs 2 Hours Pre- and Post- Occupancy	Recommended	-165,750	-1,304.2	-\$20,261	\$600
Maximize Outdoor Air Levels	Recommended	-79,242	-15,911.1	-\$69,947	\$9,300
Run Bathroom Exhaust Fans 24/7	Recommended	-1,370	0.0	-\$125	\$600
Open VAVs 100% When AHU is 100% Economizing	Recommended	-51,792	-28.7	-\$4,838	\$1,200
MERV 13 filters in HVU-01 and HVU-02	Recommended	-1,439	0.0	-\$2,051	\$640
Portable HEPA Units in Classrooms	Recommended	-219,586	0.0	-\$24,816	\$195,000
<b>Totals</b>		<b>-519,179</b>	<b>-17,244.0</b>	<b>-\$122,038</b>	<b>\$207,340</b>
<b>Energy Efficiency Package Measures Evaluated</b>					
Upper-Room UVGI in Classrooms Only	Not Recommended	-115,362	0	-\$45,943	\$327,900
Upper-Room UVGI in Entire Building	Not Recommended	-573,579	0	-\$228,430	\$1,630,300
In-AHU UVGI	Not Recommended	-129,403	0	-\$32,748	\$111,300
Roll Back HEPA Units due to UVGI	Not Recommended	219,586	0	\$24,816	\$195,000
Roll Back Max. Outdoor Air due to UVGI	Not Recommended	79,242	15,911	\$69,947	\$9,300
Roll Back Maximum Outdoor Air by 0.5 ACH due to UVGI	Not Recommended	6,572	13,795	\$6,037	\$0
<b>Recommended Measures Totals:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

- 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

<sup>1</sup> 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



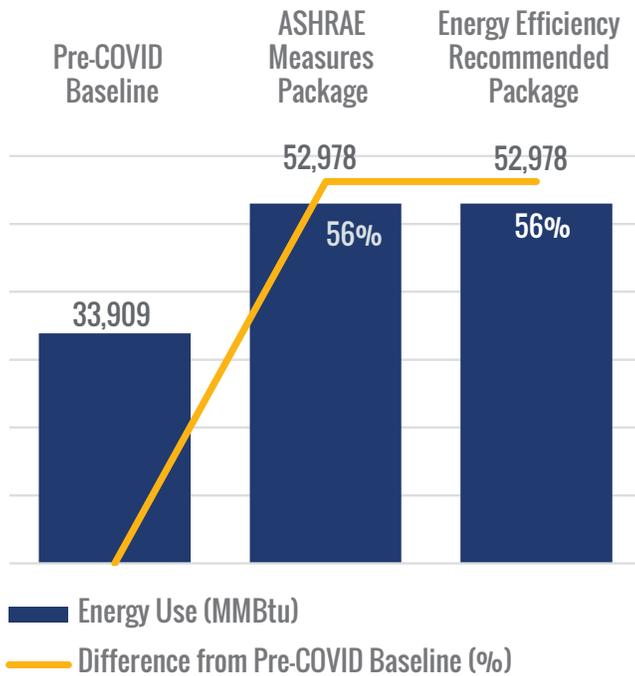
## Key Notes

Six of the ASHRAE measures were recommended for implementation due to either their low install cost or incremental roll-out potential. Five of the seven ASHRAE measures have already been implemented by FLCC, with only the portable HEPA filtration units and humidification systems not yet installed.

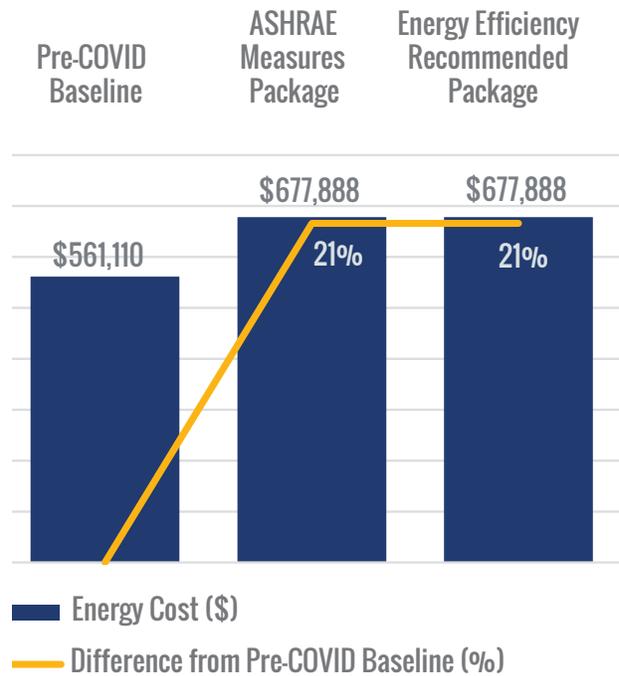
The lack of cost savings by implementing the evaluated energy efficiency measures resulted in EMCOR choosing not to recommend these measures. The high annual maintenance needs and costs of UVGI products make them much more cost-prohibitive in general over ASHRAE measures such as adjusting outdoor air levels and installing higher MERV filters.

## Impact Results

Energy Use Impacts



Energy Cost Impacts



## The NYSERDA Flexible Technical Assistance (FlexTech) Program

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