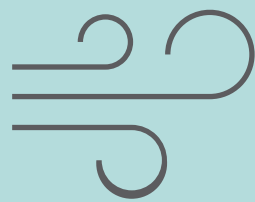


INCREASED OUTDOOR AIR



+ 4.11 kWh/sqft



+ \$259.65 /1,000cfm



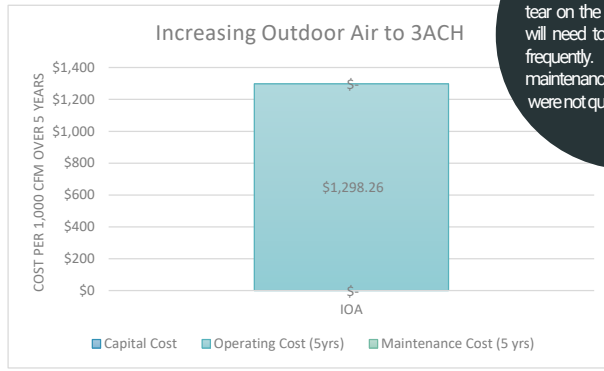
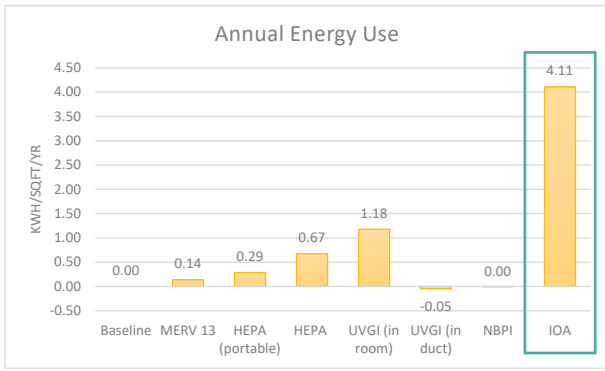
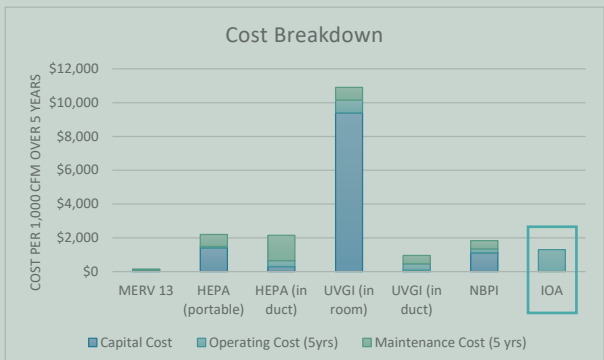
3 ach= 95% effective



Increasing outdoor air in your building requires no additional equipment or significant changes to your existing HVAC system, making it a great mitigation strategy for when indoor air quality needs change temporarily or unexpectedly. However, this strategy is expensive and may lead to unacceptable indoor air temperatures.

DESIGN GUIDELINES

- Maintain a clean cooling coil to increase the capability for heat transfer, and therefore increase the systems ability to maintain comfortable space conditions with increased outdoor air [2].
- Flush spaces for a duration sufficient to reduce concentration of airborne infectious particles by 95%. For a well mixed space, this would require 3 air changes of space volume using outdoor air [1].
- Maintain the space's humidity between 40-60% to decrease the bio-burden of infectious particles [3].
- Monitor pressurization of rooms when increasing outdoor air to ensure exhaust and relief air systems run as designed.



Increasing outdoor air in a non-DOAS setting causes wear and tear on the fan and coils; filters will need to be changed more frequently. These additional maintenance costs vary and were not quantified in this study.

1 ASHRAE "ASHRAE Epidemic Task Force" Core Recommendations for Reducing Airborne Infectious Aerosol Exposure, 2021, Accessed 2021.
 2 ASHRAE "Filtration and Air Cleaning Summary," ASHRAE, 25 May 2021, COVID-19@ashrae.org, Accessed 10 Sept. 2021.
 3 Conlan, Wade H, et al. "Virus Mitigation in K-12 Schools," ASHRAE, 2021, Online Webinar.
 4 ASHRAE Handbook-HVAC Systems and Equipment, 2016, pp. 29.2-29.12.