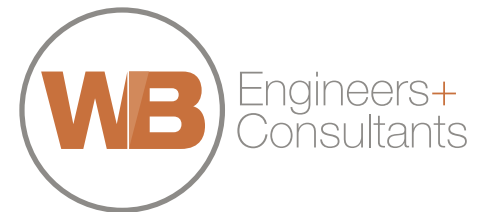




COVID-19 MEP

Recommendations



Executive Summary

- + Increase Fresh Air
- + Increase Airflow in the Building
- + Increase Filter Efficiency
- + Possibly Add Active Mitigation (UV-C lights or Electronic Air Cleaners)

Increase Fresh Air

- + Maximize the amount of fresh air to the building. Need to take into account what the building system can handle without impacting occupant comfort.
- + Try to meet the Enhanced Ventilation credit for WELL. 30% better than code or 0.11 CFM/SF
- + Most buildings over 10 years old will meet this. They were built at 0.14 CFM/SF which equates to 20 CFM/Person @ 143 SF/Person.
- + Annual increased energy cost is \$1,500 per floor. (~20k SF)
- + WELL sites studies regarding increasing indoor air quality:
 - On average, 10% of productivity loss could be attributed to health issues related to poor indoor air quality in office buildings.
 - Sick leave attributed to insufficient fresh air in buildings is estimated to be 35% of total absenteeism.
 - With adequate ventilation in buildings, productivity can be improved by 29%.



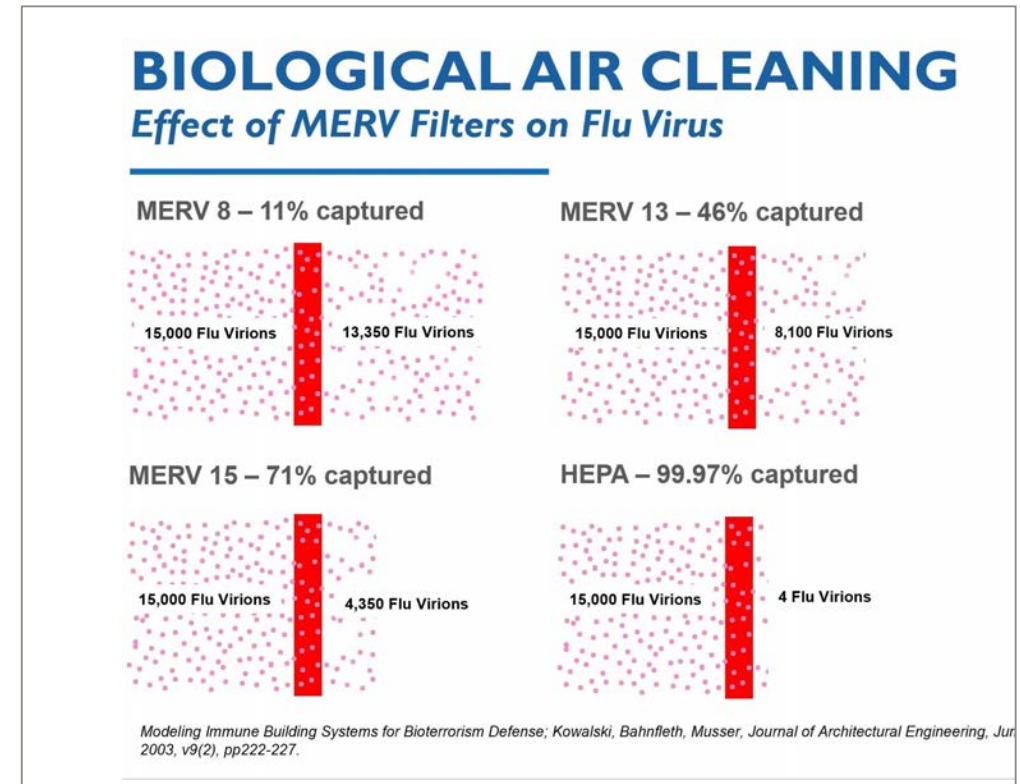
Increase Air Flow in Building

- + Keep as much air flowing through the space as feasible. Reduces stagnant air and increases the amount that passes through the air filter.
- + Increase the minimum air flow setting on VAV's. In many buildings this can be done by the building staff through the energy management system.
- + Annual increased energy cost is \$1,500 per floor. (~20k SF)



Increase Filter Efficiency

- + Increase the efficiency of air filters at HVAC units. We recommend MERV 13.
- + Refer to chart below. Buildings typically use MERV 8. MERV 13 filters capture 4x the amount of virus sized particles.
- + Annual filter cost will increase from \$200 to \$400 per floor.



Active Mitigation

- + UVGI – Install UV-C lights in air handlers to kill viruses
 - First cost is approximately \$12,000 per floor.
 - Side benefit is it can reduce fan energy by keeping coils clean.
- + Electronic Air Cleaners
 - PCO – Install 12" filter on air handlers, produces charged ions that break down viruses. \$40k to install per floor.
 - Ionization Air Purification – Installed in ducts and floods the space with charged ions that break down viruses. Newer technology and not endorsed by ASHRAE.





Engineers+
Consultants