American Alliance of Museums

Hot Topics: Considerations for Building Ventilation

The American Alliance of Museums offers the following for consideration in determining how museum ventilation might be modified to reduce the transmission of COVID-19. The information shared here is based on the best available information as of publication and is not intended as legal, employment/human resources, or health and safety advice. Museums are encouraged to seek legal and other expert advice on their specific circumstances.

Question: How can my museum adapt ventilation to help prevent the transmission of COVID-19?

Introduction

The CDC recommends addressing ventilation as part of a layered approach to reducing transmission of COVID-19, in conjunction with face mask usage, hand hygiene, and physical distancing. Appropriate ventilation can help reduce the concentration of viral particles in indoor air. Conversely, poorly designed airflow can actually increase risk of transmission.

Some museums will need to consider appropriate environmental conditions for collections as they make adaptations to ventilation that may affect temperature and humidity levels in the building. That said, many museums have an advantage over typical businesses in the sophistication of their HVAC systems and ability to fine tune ventilation and filtration. Many small museums are already adept at using low-cost methods to manage the indoor environment.

With that in mind, a range of options are available, that may be adapted to museums of various types, sizes, and budgets.

Improvements may include:

- Increasing the intake of fresh outdoor air by opening windows and doors. (When adjusting airflow to improve human health, this must be done with an awareness of risks posed by air pollution, allergens, etc.)
- Use fans to increase the effectiveness of open windows. Placement is important to avoid potentially causing contaminated air to flow from one person to another.
- Decrease occupancy where outdoor ventilation cannot be increased.
- Increase airflow to occupied spaces where possible.
- Turning off demand-controlled ventilation or timers.
- Open outdoor air dampers fully and reduce or eliminate air recirculation in HVAC systems.
- Inspect and replace filters as needed, increase air filtration where possible.
- Ensure restroom fans are working and operating at full capacity while the building is occupied.

In addition, museums might consider:

- Running other exhaust fans (such as those in food preparation, fabrication, and laboratory areas) when these areas are occupied, regardless of whether the associated equipment is in use.
- Operating the HVAC system at maximum outside airflow for two hours before and after the building is occupied.
- Using portable, high-efficiency particulate air (HEPA) fan/filtration systems to enhance air cleaning.
- Using ultraviolet germicidal irradiation (UVGI) as a supplement to inactivate viral particles, particularly if options for increasing room ventilation are limited.

Affordability

- No cost: opening windows; inspecting and maintaining local exhaust ventilation; disabling DCV controls; repositioning outdoor air dampers
- Less than $100: using fans to increase effectiveness of open windows; or repositioning supply/exhaust diffusers to create directional airflow
- $500 and up: adding portable HEPA fan/filter systems
- $1500 and up: adding upper room UVGI

Decision Making and Communications

When considering changes to ventilation, the museum should identify all staff affected by such decisions (including, for example, collections care, conservation, facilities management, engineering, and maintenance). These stakeholders can provide valuable input in evaluating potential options, identifying concerns, and implementing the solutions. Communicate to all staff any changes that are being made to ventilation to reduce COVID-19 transmission.

Policies, Procedures, and Training

Update policies and procedures as needed to reflect decisions regarding changes to ventilation, and ensure all relevant staff and contractors are trained to implement new procedures and correctly operate any new equipment.

Resources

1. The Center for Disease Control Guide to Ventilation in Buildings.
2. The Johns Hopkins Bloomberg School of Public Health How Indoor Ventilation Systems Can Help Prevent or Permit the Spread of COVID-19.
3. World Health Organization Coronavirus disease (COVID-19): Ventilation and air conditioning in public spaces and buildings.
4. Yale School of Public Health Ventilation Key to Reducing Risk.
5. Lawrence Berkeley National Laboratory Using Ultraviolet Germicidal Lights for Air Cleaning.
6. Environmental Protection Agency Air Cleaners, HVAC Filters, and Coronavirus (COVID-19).

Feedback on this resource? Additional examples to share? Contact content@aam-us.org.

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