

SAFER
INDOOR
AIR:
**RECOMMENDATIONS
ON WILDFIRE
SMOKE FOR
COMMUNITY
SPACES AND
PUBLIC HEALTH
AUTHORITIES**

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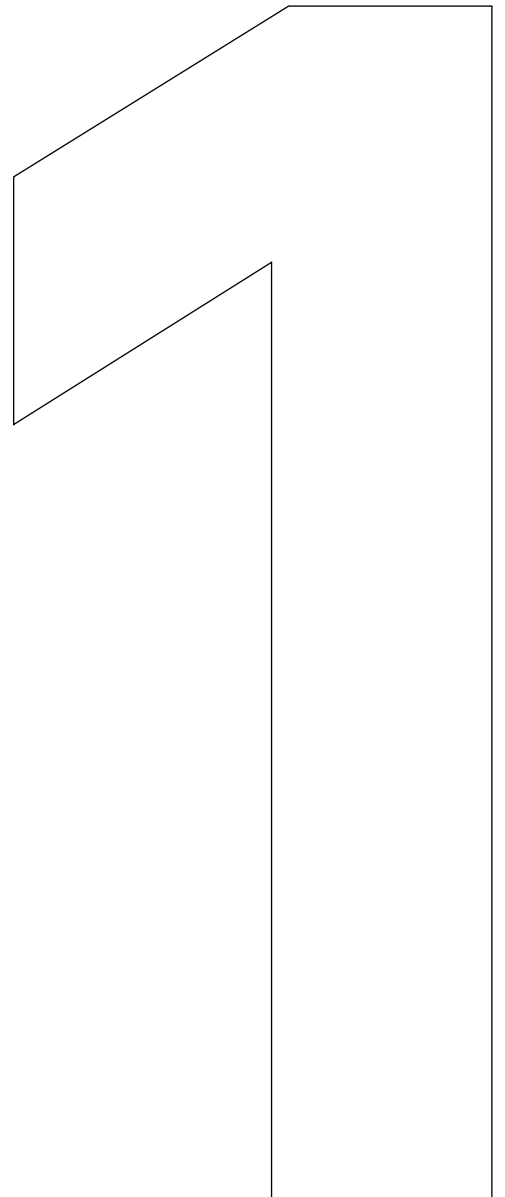
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Contacting us: Please get in touch with our team if you have questions about indoor air quality in a community space or congregate setting such as a shelter, group home, long-term care home, drop-in, community centre, library or community clinic. We will answer you over email, or you may wish to book a virtual "office hours" session with our indoor air quality experts. We can be reached through project manager Pearl Buhariwala at: pearl.buhariwala@unityhealth.to

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Introduction

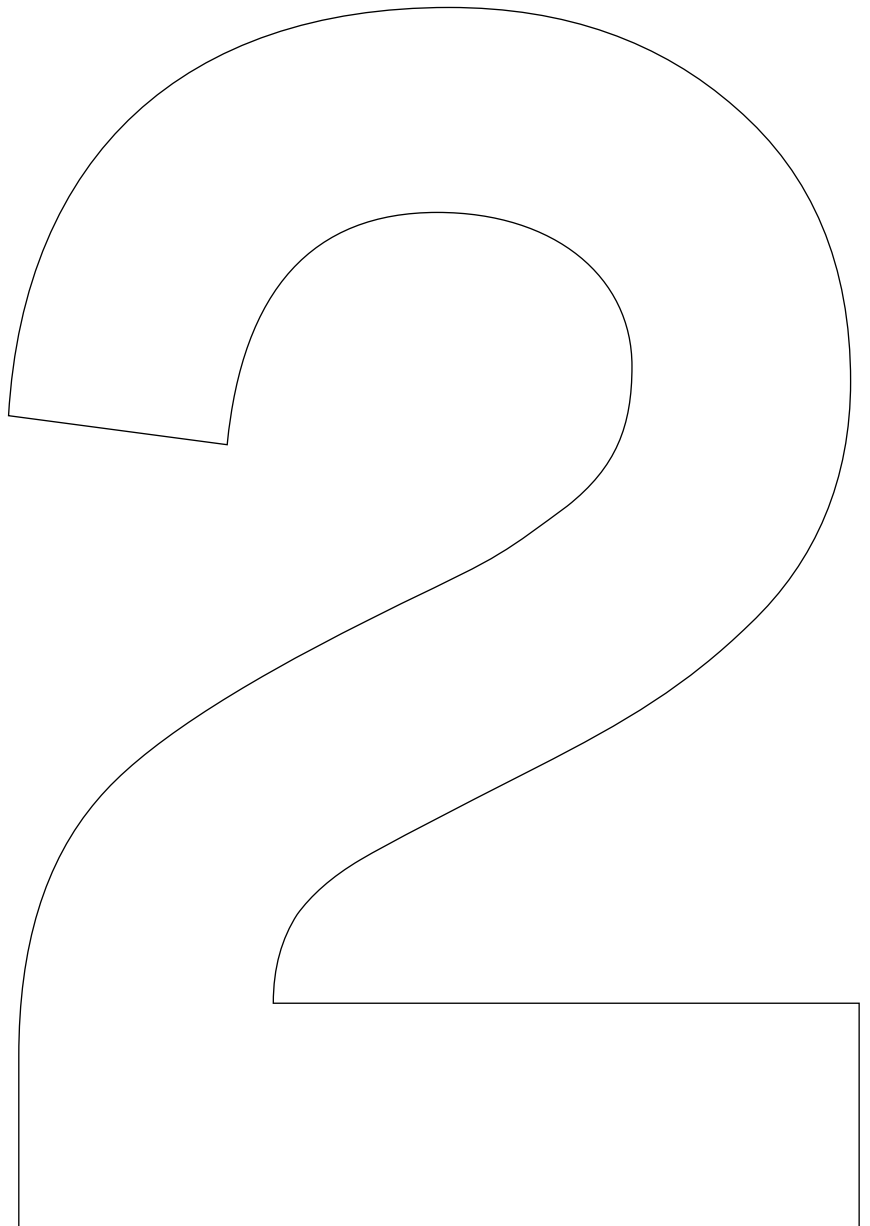


Purpose: To provide public health authorities and settings such as shelters, group homes, drop-ins, community centres and community clinics with plain language information about reducing exposure to wildfire smoke while considering other indoor air quality goals, including protection from diseases that spread through the air. This information is intended for community and congregate settings, and may or may not apply to other types of buildings.

General recommendations:

- **Ensure that everyone in your region, catchment or neighbourhood has 24/7, year-round access to indoor spaces with comfortable temperatures and acceptable indoor air quality.**
- Provide free, new respirator masks to everyone—workers, clients, patients and communities.
- Use high quality portable filtration and centralized heating, ventilation and air conditioning (HVAC) filtration whenever possible. For information on choosing, positioning and maintaining portable air filters and on using HVAC systems to improve indoor air quality, see [this checklist](#).
- When outdoor air quality is extremely bad, close windows and doors and, if possible, reduce the amount of outdoor air coming in through your HVAC system.

About respirator masks, filters and ventilation management



About respirator masks

Respirator masks such as N95s and KN95s filter the small particles of wildfire smoke that can harm your health. While there is wildfire smoke, people can wear respirator masks outside for protection. People can also wear them inside, particularly when indoor filtration is unavailable. Respirator masks will also greatly reduce the risk of contracting COVID-19, the flu, RSV and seasonal colds when worn indoors.

Respirator masks are particularly important for people who are spending a lot of time outside when the outdoor air quality is not good. They are also important for people with heart or lung conditions, people who are pregnant, children and older people.

Community organizations and public health units should share clear messages across multiple channels explaining how respirator masks protect people from wildfire smoke and outlining basics of mask use. They should also make respirator masks available for free at convenient locations and times, ensuring that they are available to people who work outside and people who are unhoused and living or spending time outside.

About filters – MERV vs. HEPA

Many of the harmful substances contained in wildfire smoke come in the form of small particles. The right filters can help remove these small particles from the air.

HVAC systems generally use filters labelled with a Minimum Efficiency Reporting Value, often referred to as “MERV.” The higher the MERV, the higher the efficiency of the filter is supposed to be. Some removal of wildfire smoke particles occurs with MERV 11 filters. We generally recommend MERV 13 or higher if possible (check with an HVAC expert before upgrading your filter). Some companies, such as 3M, may use their own rating system for their HVAC filters. 3M shares the MERV equivalent on their website.

If you are purchasing a portable air filter, look for one with a HEPA filter. A HEPA filter will remove almost all particles that pass through it.

If you are making your own portable air filter with a box fan, use HVAC filters that are MERV 13 (or higher, for even more filtration benefit).

While you can get a HEPA filter for central HVAC systems, these are often designed as “bypass filters.” In other words, they only filter some of the air going through your system, and therefore do not provide much benefit. Unless you have an HVAC system that is specifically designed for HEPA filters, such as those found in some health care settings, standard HVAC filters are the best choice.

For more information about portable air filters and HVAC filtration, please see [this checklist](#).

About ventilation management

In general, ventilation—the process of bringing some outdoor air inside through windows, doors and/or HVAC systems—is very important. Ventilation is a basic need in every building. For example, along with filtration, ventilation helps remove contaminants from indoor air, including respiratory particles that may cause disease. It also helps to reduce odours and contaminants generated by activities like cooking.

If you have a centralized HVAC system and the onsite expertise to make timely adjustments, you may choose to reduce the amount of outdoor air coming in through your system during periods of wildfire smoke.

Given the vital importance of outdoor air in the safe and healthy operation of buildings, reducing ventilation levels during episodes of extremely poor outdoor air quality should only be a temporary, emergency measure. Even during periods of wildfire smoke, do not go below ASHRAE’s minimum recommended ventilation levels without a clear understanding of the implications of doing so. A professional engineer with training in indoor air quality should be able to evaluate those implications.

Public health units, governments, funders and community spaces should prioritize the retrofit or installation of HVAC systems with the capacity to provide adequate filtration and ventilation under all conditions and ensure each building has onsite HVAC expertise and regular maintenance of HVAC systems. For more on HVAC systems and indoor air quality, please see [this checklist](#).

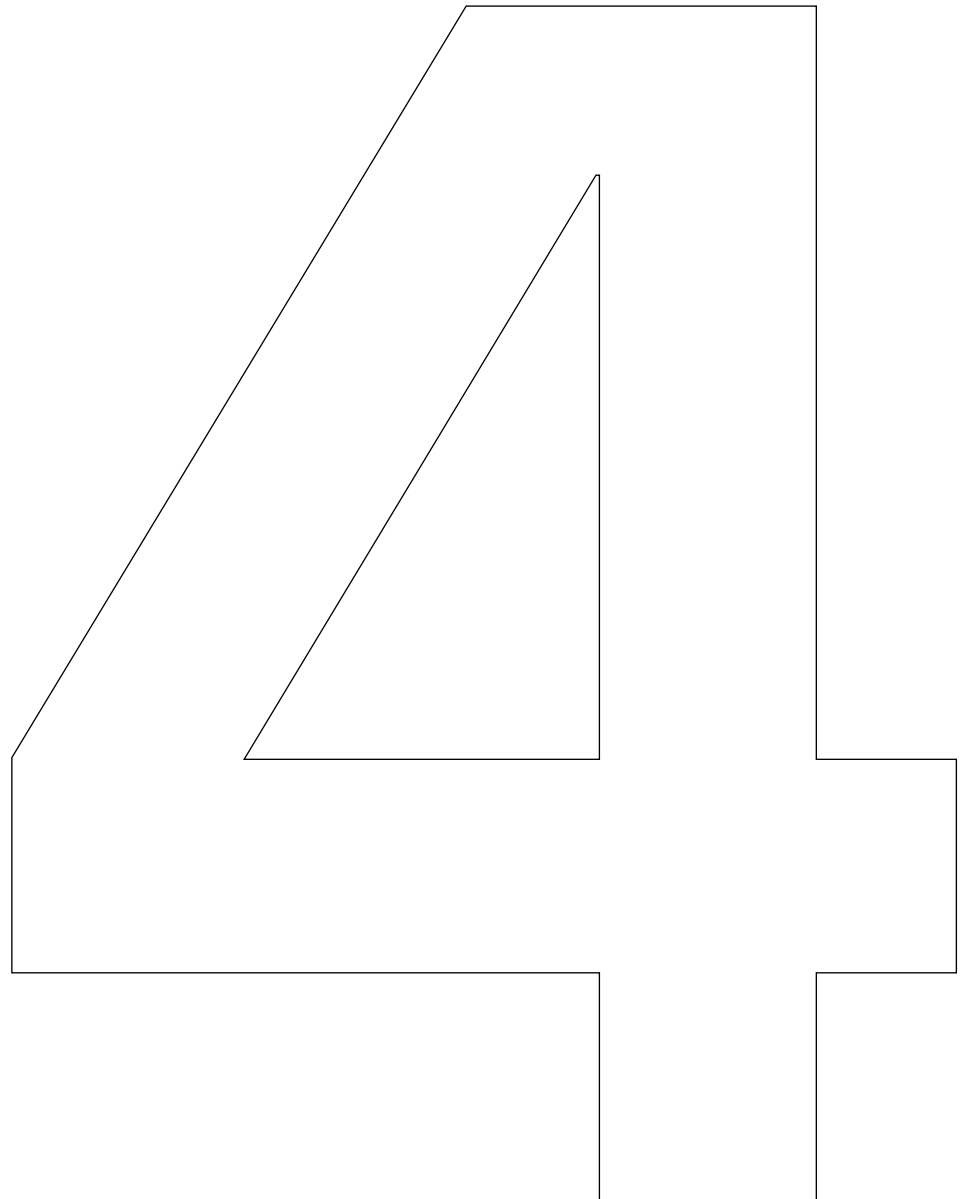
Tips for buildings or rooms with no centralized HVAC system



Tips for dealing with wildfire smoke in buildings or rooms with no centralized HVAC system

- Close windows and doors.
- Run portable air filters at all times while the building is in use.
- Use air-conditioning devices to make sure the temperature is comfortable, but do not expect them to filter wildfire smoke out of the air. Most stand-alone air-conditioning devices such as window, wall and portable units do not filter the air, and will not help with the small particles associated with wildfire smoke.
- If your air-conditioning device has an outdoor air intake function, disable this function when there is wildfire smoke outside. An outdoor intake function is most commonly seen in window box air-conditioners. Remember to reset the outdoor intake function when the wildfire smoke has cleared.

Tips for buildings with a centralized HVAC system



Tips for dealing with wildfire smoke in buildings with a centralized HVAC system

- Close windows and exterior doors.
- Use portable air filters at all times while the building is in use.

Consult with an HVAC expert to:

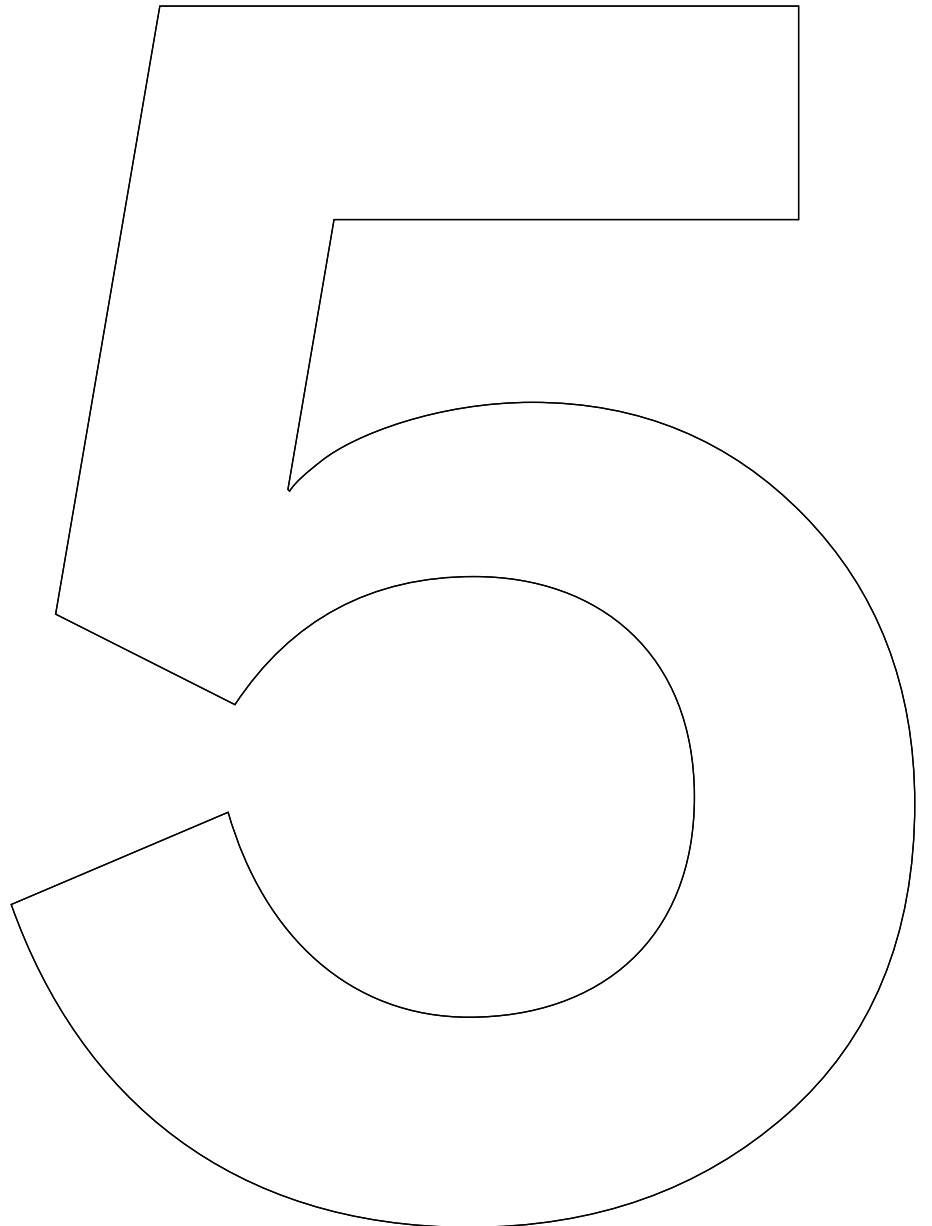
- See if you can reduce the amount of outdoor air coming in through your HVAC system during periods of wildfire smoke without compromising indoor air quality.
- Ensure there is a good seal around your HVAC filter(s).
- Find out the highest efficiency filters your entire HVAC system can handle, including outdoor air handling units that supply areas such as building hallways.
 - MERV 11 filters will help with wildfire smoke, and the benefit increases as the MERV goes up. If possible, MERV 13 is a good choice.
 - Not all HVAC systems can handle MERV 11 or MERV 13 filters. An HVAC expert should be able to tell you the highest efficiency filter your system can handle.
 - There may be options to improve your filter slot to allow for higher efficiency filters.
 - **In regions where wildfire smoke lasts for long periods, it is particularly important to ensure your HVAC system has well-fitted high-efficiency filters to maintain indoor air quality while outdoor air intake is reduced.**
- Explore setting the HVAC fan to "on" while the building is in use to ensure continuous filtration. Only take this step if your HVAC system is equipped with filters that are MERV 11 or higher.
- Ensure your HVAC system is regularly maintained, including your HVAC filters.

- **Ensure your building is well equipped to respond to outdoor air pollution, diseases that spread through the air and other indoor air quality concerns.** This includes ensuring that you have an HVAC system that can be adjusted in response to changing conditions. It also means developing and maintaining onsite HVAC expertise.
- Please note that if you begin using a higher-efficiency filter and/or running your HVAC fan more often, you may need to change your HVAC filters more frequently. Filters will often need to be changed after a period of wildfire smoke. An HVAC expert can help you determine an appropriate filter maintenance schedule.

Remember:

- Increasing ventilation is a good practice to reduce the risk of COVID-19 and other respiratory diseases. If you reduce ventilation because of wildfire smoke, consider increasing it again when the wildfire smoke has cleared.
- Even in spaces with good filtration through the HVAC system, portable air filters will improve indoor air quality. Importantly, portable air filters can be moved close to people wherever they are gathered, providing an extra layer of protection.

Implications for infection control



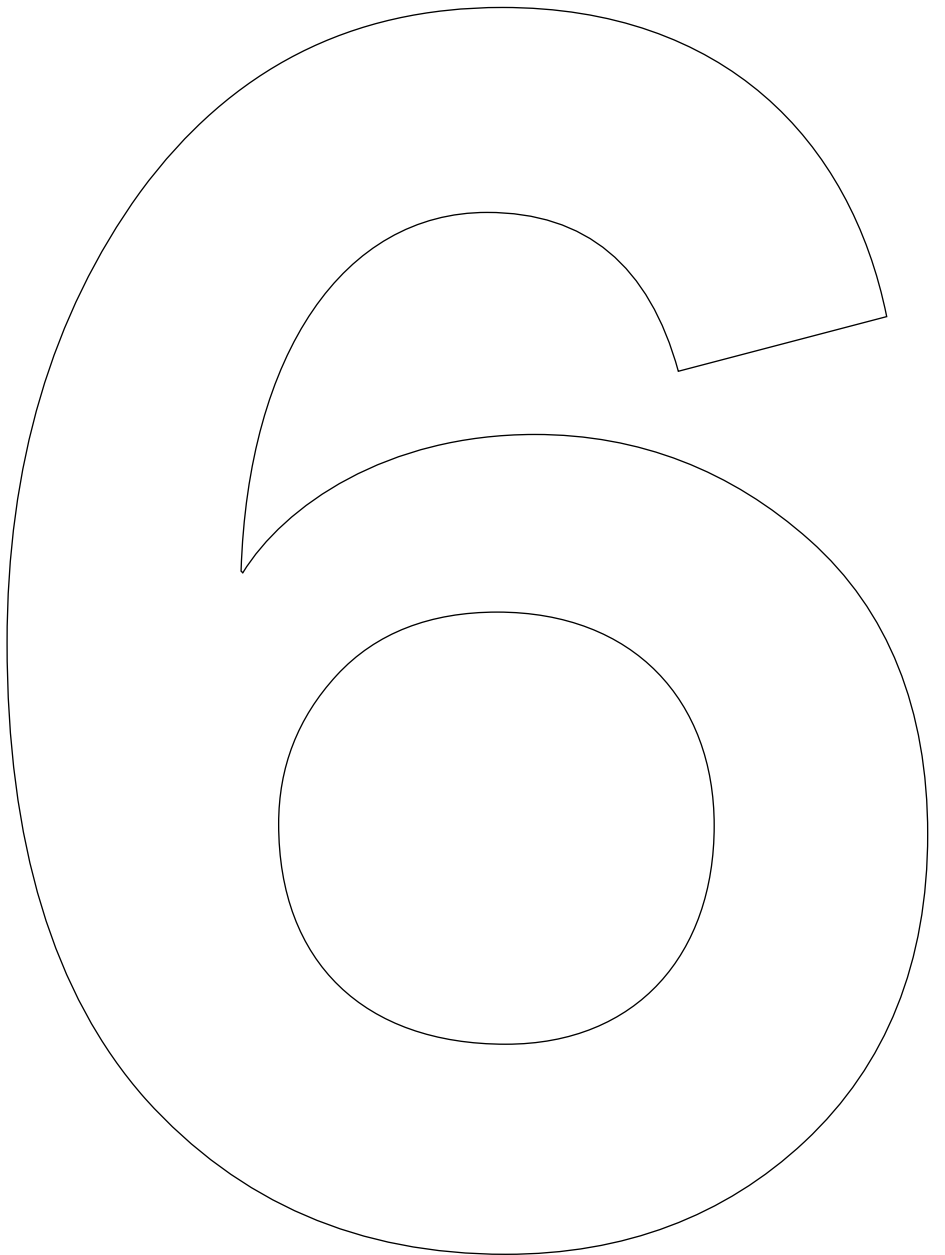
Implications for infection control

In many cases, reducing the amount of outdoor air in the space may be your primary response to wildfire smoke. For example, closed windows help to keep wildfire particles out.

However, closed windows also help to keep virus-containing particles in. These virus particles can build up in a room over time, in particular when people are not wearing masks. That is why it is important to run portable air filters, which will help remove virus particles AND wildfire particles from the air.

Portable air filters are especially important in spaces with no centralized HVAC systems. With the windows closed, you will have few other ways to clean indoor air. Most portable, window or other stand-alone air-conditioning devices do not filter viruses or wildfire smoke.

About this guidance



About these recommendations

While there are some general rules, the steps you need to take to improve indoor air quality during periods of wildfire smoke—and in general—depend on many factors. Examples of factors you need to consider include: whether or not you have onsite HVAC expertise; the design and condition of your HVAC system; the activities that take place in your building; and the layout and structure of the building itself. As a result, we always recommend working with HVAC experts and, where necessary, professional engineers with expertise in indoor air quality.

Disclaimer

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Additional reading

As a companion to this document, we encourage you to read our checklist, [Reducing transmission of COVID-19 through improvements to indoor air quality: a checklist for community spaces](#).

For additional information about managing wildfire smoke, please see the following resources from the Government of Canada: [Wildfire smoke, air quality, and your health](#) and [Guidance for Cleaner Air Spaces during Wildfire Smoke Events](#).

