What is the University of Alberta doing to increase the safety of our buildings in response to COVID-19?

- Reviewing ventilation systems to ensure proper operation
- Increasing operational time for any system that turned off at night to run extended times
- Increasing air filtration to MERV-13 in the majority of buildings

The following is supplemental information that can be used for communications regarding the ventilation systems on campus.

System types

We classify the air systems we have on campus into three general categories. Regardless of the category of system, it will generally have the ability to heat, cool and filter the air prior to it being distributed to each room.

**Blended air system**

These systems make up the majority of the air systems on campus. They supply air that is distributed to the rooms made up of a blend of return air from the building spaces and outside air. These air systems are dynamic based on several factors and the blend of outside air to return will be changing throughout the day and year.

**Outside air system**

All the air that is supplied from these systems is drawn from outside the building. Additionally, a matched system(s) exhausts the same volume of air from the building that is being supplied to the building. Generally these systems are found in our laboratory buildings that have fume hoods in the labs.

**Recirculated air system**

These air systems draw air from a space and circulate it through an air system where it may heat, cool or filter the air. Examples include spot cooling units used to cool computer server rooms.
System maintenance

Filter maintenance

Air filters are evaluated every 6 weeks and replaced if needed or if they will not meet the next cycle in 6 weeks’ time. Filters require changing based on the air pressure drop going through the filters.

Air system maintenance

Each of our air handlers is reviewed and maintained to ensure that all of the components are operating properly. A detailed review of the system documents each component and any required maintenance on the system and calibrates sensors and alarms. Most of the systems are also monitored by our control systems and report back to our Unified Communications Centre if they are not operating in the normal range. When alarms reach the centre, technicians are dispatched to review and rectify the situation to return the unit to normal operating conditions.

Operational approach to review and changes to air systems in response to COVID-19

University of Alberta occupational hygiene professionals, ventilation professional engineers and third-party consulting ventilation engineers have actively been reviewing the information posted by code and standard authorities. The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) is the authoritative source of information surrounding the design and operation of ventilation systems.

ASHRAE has published their COVID-19 Core Recommendations. Utilizing this resource and engaging external professionals, we have compiled data about our ventilation systems and as a result, targeted retrofits and changed operational parameters to our systems.

Filtration upgrades in response to COVID-19

There is information presented that recommends increasing the level of ventilation in air systems “to a level that will not impact the performance of the system” in response to COVID-19. Upon evaluation of the systems, we were able to upgrade numerous buildings to a level of filtration of MERV-13.
Operational changes in response to COVID-19

We adjusted some of the operational parameters for our systems in response to COVID-19. The systems have always maximized the amount of outside air we can bring in on our blended outside and return air systems.

Any air system that operated 24 hours a day continued to operate that way. Any air system that may have had an economized schedule to reduce the operating hours has been changed to operate from 6 am–11 pm every day. The additional runtime hours will provide recommended ventilation building flush.

Please see information on our building filtration levels and air circulation systems. In the coming weeks, we will share additional information on the nominal air change rate in the buildings and work down to information at a classroom level.