

HVAC Report – Fort Frances POA Court

I. Overview

To support the reopening of provincial courthouses, a comprehensive Heating, Ventilation, and Air Conditioning (HVAC) survey was completed to determine system capabilities for buildings currently occupied by the Ministry of the Attorney General (MAG). The survey has also been completed for municipally-operated court locations to assist the transition during re-occupancy into the workplace due to the COVID-19 pandemic. The survey takes into account a report provided by ECOH Management Inc. (ECOH) titled 'Infection Control in Ontario Courthouses'. Questions within the survey aim to reflect current building system conditions and capabilities at municipal court buildings.

The following is a summary of the building's ability and capability to meet recommended practices (the "Report").

II. Current HVAC Standards and Procedures

Landlords and municipalities are responsible for operating all court buildings in accordance with their lease agreements and the applicable ASHRAE industry standards and codes.

Buildings are designed and operated in accordance with the applicable standards outlined by the following:

1. Ontario Building Code.
2. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE); and
3. Building Owners and Managers Association (BOMA) Canada.

With respect to COVID-19, all municipalities should continue to monitor and respond to best practices from accredited organizations and make the necessary building operational adjustments, as practical and when required.

III. HVAC Survey Parameters

The results presented below were obtained through a comprehensive HVAC survey completed by each respective

municipality. Surveys were sent to municipal partners who ensured the appropriate building maintenance operator completed the survey based on their knowledge of buildings.

The survey sought to ascertain the HVAC conditions including, but not limited to the following: the current air filter rating, average carbon dioxide (CO₂) levels (ventilation) within the buildings, relative humidity (RH), and other indoor air quality (IAQ) parameters.

IV. HVAC Survey Findings

A summary of key survey results are listed below:

Air Filters

- This system is equipped with MERV-13 filters.

Humidity

- Building operates between 40% and 60% RH during the cooling season.
- Building operates between 25% and 60% RH during the heating season.

Ventilation

- Current system has the ability to monitor CO₂. Average CO₂ readings are 486ppm.
- The building's air handling unit (AHU) schedules can be modified.
- The washroom exhaust fan schedule cannot be adjusted.

Summary

The municipality will follow up on items and make repairs, replacements and/or adjustments, as required.

V. Continuous Monitoring

The continuous monitoring of building operational performance is accomplished by performing data trending and

monitoring of the BAS system, where a BAS system is available, to ensure the building is operating within recommended parameters. Where there is no building BAS system then manual measures using a calibrated hand-held direct reading instrument, data logger/sensor technology or other means should be used to record temperature, relative humidity and carbon dioxide. It is recommended that these activities are undertaken on a continual daily basis when the courts are seating.

VI. Report Limitations

This Report is intended to provide a point-in-time view of the operation of the HVAC systems and is based upon data or information provided by others, including responses through surveys completed by third parties, including landlords. This report has relied upon such data or information, and did not conduct any independent physical testing, sampling or intrusive investigation.

The MAG Recovery Secretariat nor the ministry, makes any representation, warranty or guarantee, expressed or implied, as to the accuracy, completeness, condition, or suitability of the Report or any information contained therein, for the purposes or needs of municipal court recovery.

VII. Glossary of Terms:

| Acronym | Definition |
|---------|---|
| AHU | Air Handling Unit |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| BAS | Building Automation System |
| BOMA | Building Owners and Managers Association |
| CO2 | Carbon Dioxide |
| ECOH | ECOH Management Inc. |
| HVAC | Heating, Ventilation, and Air Conditioning |
| IAQ | Indoor Air Quality |
| MAG | Ministry of the Attorney General |
| MERV | Minimum Efficiency Reporting Value |
| ppm | Parts per Million |
| RH | Relative Humidity |

VIII. Reference Materials:

ASHRAE Guidance for Buildings Operations During the COVID-19 Pandemic May 2020

<https://www.ashrae.org/news/ashraejournal/guidance-for-building-operations-during-the-covid-19-pandemic>.

ASHRAE position document on filtration and air cleaning Dec 29 2020

<https://www.ashrae.org/file%20library/about/position%20documents/filtration-and-air-cleaning-pd-feb.2.2021.pdf>.

ASHRAE Epidemic Task Force 'Building Readiness' Updated 8-19-2020

<https://www.ashrae.org/file%20library/technical%20resources/covid-19/ashrae-building-readiness.pdf>.

ASHRAE Filtration and Disinfection:

<https://www.ashrae.org/technical-resources/filtration-and-disinfection-faq>.

BOMA International's Coronavirus <https://www.boma.org/coronavirus>

Public Health Ontario PHO document "Heating, Ventilation and Air Conditioning (HVAC) Systems in Buildings and COVID-19" dated March 17, 2021

<https://www.publichealthontario.ca/-/media/documents/ncov/ipac/2020/09/covid-19-hvac-systems-in-buildings.pdf?la=en> .

Public Health Ontario PHO document data 20/03021 COVID-19 "Transmission Through Large Respiratory Droplets and Aerosols... What We Know So Far" https://www.publichealthontario.ca/-/media/documents/ncov/covid-wwksf/2021/05/wwksf-transmission-respiratory-aerosols.pdf?sc_lang=en