

# Milton Courthouse Remediation Program



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Ministry of the  
Attorney General



Infrastructure  
Ontario

The Ministry of the Attorney General, through Infrastructure Ontario (IO) is proceeding with the Milton Courthouse Remediation Program. This includes various projects and initiatives as the ministry plans for the immediate and long-term infrastructure needs in Milton. This work includes:

- Temporary relocation of court operations
- Mould investigation and remediation
- Assessment of other potential mould sources
- Additional mould remediation and prevention measures as identified

In the short-term, the ministry is also working on the refresh and refurbishment of selected spaces and upgrades to courtroom technology.

In the intermediate term, a new single point of entry and security systems upgrades are being planned.

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## Background

The Milton Courthouse Remediation Program was launched to coordinate several concurrent projects to resolve current mould issues, investigate and assess historical issues related to mould growth and assess the need for any additional work to bring the Indoor Air Quality (IAQ) within currently established and acceptable limits. A program management approach was recently used for the Superior Court of Justice Amalgamation project in Toronto. A similar approach is being used for the Milton Courthouse.

The objectives of the Milton Courthouse Remediation Program are to:

- Provide a safe and healthy environment for the operations of the courts
- Minimize the impact to facility operations
- Provide consolidated governance and reporting to Ministry of the Attorney General (MAG) staff, judiciary and justice participants

Common environmental mould spores are found outdoors and within all buildings. This program aims to find and eradicate the conditions that support mould growth so that the building is not adding to the normal mould spores found outdoors.

## Program Scope

Under this program, analysis is well under-way and contractors are being procured to remediate existing mould by removing contaminated air ducts and insulation and replacing them with new equipment. As this work is intrusive by nature, the building had to be vacated for health and safety reasons. All court operations have been moved into temporary facilities to avoid disruption to operations.

### Core Projects:

- Milton Courthouse Temporary Relocation - **Completed**
- Indoor Air Quality (IAQ) and Mould Study
- Heating, Ventilation and Air Conditioning (HVAC) Study - **Completed**
- Mould Remediation (AHU1)
- **New project:** Window Replacement
- Relocation of Operations Back to the Milton Courthouse

### Projects Outside the Scope of the Program:

- Exterior improvements – repairs to limestone panels, grading study
- Replace manually operated fan coil units (below windows in the South Building)
- Refresh selected spaces and upgrade courtroom technology
- New single point of entry and security systems upgrades

**Program Director:** John Alley – Colliers Project Leaders

**Program Manager:** Roxana Draghici – Colliers Project Leaders

## Indoor Air Quality (IAQ) and Mould Study

The Indoor Air Quality (IAQ) and Mould Study has two parts. The first part began in February 2021 and includes a mould assessment, including air sampling and intrusive testing in areas of the building where previous records indicate a potential for mould.

The second part will assess indoor air quality throughout the building, including mould. To evaluate the air quality within the investigated areas, continuous monitoring for a number of IAQ parameters was conducted. These parameters included thermal comfort parameters (temperature and relative humidity) and general air quality parameters like carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), total volatile organic compounds (TVOC), and particulate matter (PM<sub>10</sub>). In addition, the HVAC operations will be assessed.

The scope has been expanded to define root causes where additional mould growth has been found.

## Project Scope

The study includes the following activities:

- Weekly mould sampling until staff move into temporary court facilities - **Completed**
- A review of previous reports and work from the past five years - **Completed**
- A survey and interviews with occupants to identify potential mould locations - **Completed**
- Immediate mould assessment through intrusive testing and sampling – **Completed** - including:
  - Insulation inside and outside ductwork
  - All Air Handling Units (AHUs), Make-Up Air (MUA) units, humidification systems, and Heating Ventilation and Air Conditioning (HVAC) units
  - Perimeter radiation units and fan coil units
  - Opening of drywall as needed
- **New:** Hygro-thermal study of exterior wall to identify any defects for correction - **Completed**
- Assessment of the indoor air quality before corrective work and after operations have moved back to the courthouse. The assessment will include sampling and data logging for:
  - Carbon dioxide (CO<sub>2</sub>)
  - Carbon monoxide (CO)
  - Relative humidity
  - Temperature
  - Particulate Matter (PM<sub>10</sub>)
  - Total Volatile Organic Compounds (TVOC)

**Preliminary Results:** Mould confirmed behind drywall on exterior walls and in 3 of 30 new samples in AHU-2 ductwork. Remediation and correction requirements are being defined.

**Project Manager:** Leah Rossini, Colliers Project Leaders for Infrastructure Ontario

**Consultant:** Pinchin Ltd.

## Key Dates

August 30, 2021:	Final Mould Report submitted - <b>Completed</b>
January to February 2022:	Data logging for IAQ (Round 1)
June to September 2022:	Data logging for IAQ (Round 2)
January 2023:	Final IAQ Report

## Heating, Ventilation and Air Conditioning (HVAC) Study

This study is being conducted in parallel with the first part of the IAQ and Mould Study, using data from that study to help assess the HVAC systems.

New scope has been added to provide increased certainty that causes of mould have been identified and HVAC systems have been designed to minimize the likelihood of mould growth.

### Project Scope

This HVAC Study began in November 2020 and will provide a comprehensive assessment of the heating and cooling systems within the Milton Courthouse. The study will:

- Assess the overall heating, cooling and ventilation in the building
- Assess performance of HVAC systems for zones and identified rooms
- Document the condition of the central air handling systems located on the site including:
  - Air handling units
  - Rooftop units
  - Return air fans
  - Modulating variable air volume boxes
  - Air dampers
  - Chiller
  - Cooling tower
  - Boilers
- Recommend equipment repairs or renewals to attain more energy efficient heating and cooling
- Provide heating and cooling load calculations to support system sizing
- **New:** Assessment of existing plumbing and drainage pipes for leaks and potential future leaks
- **New:** Develop design for a new Dedicated Outdoor Air Supply (DOAS2) unit for Air Handling Unit 2 (AHU2) in the south building

The preliminary analysis from this study provided input into the Mould Remediation project with respect to changes in the distribution system for Air Handling Unit 1 (AHU1).

**Project Manager:** Leah Rossini, Colliers Project Leaders for Infrastructure Ontario

**Consultant:** H. H. Angus & Associates Limited

### Key Dates

- July 30, 2021: Plumbing investigations - **Completed**
- August 13, 2021: Design specifications for DOAS2 - **Completed**
- August 16, 2021: Draft HVAC Report complete - **Completed**
- August 16, 2021: Design and tender package completed for DOAS2 - **Completed**
- August 30, 2021: Final HVAC Report submitted - **Completed**

## Mould Remediation (AHU1)

This IO base building project will focus on mould remediation related to Air Handling Unit 1 (AHU1) in the North Building and its associated ductwork. Pinchin Ltd. has been retained as the environmental consultant for its expertise in similar projects. The Pinchin team includes a medical doctor who specializes in indoor air quality.

Weekly Indoor Air Quality (IAQ) testing was conducted to ensure that IAQ remains within established and acceptable limits. Testing began on January 13, 2021 and concluded the week of June 19, 2021 after occupants were relocated to the temporary facility.

New scope has been added to address conditions found during intrusive testing and construction.

## Project Scope

The project includes:

- Protection of furniture and materials that are not moved to the temporary facilities
- Installation of a Dedicated Outdoor Air Supply (DOAS) system to increase the amount of fresh air brought into the building
- Removal of contaminated air distribution ducts and insulation serving AHU1 and replacement with new ducts and sound isolation units
- Removal of contaminated and leaking mechanical units and replacement with new units
- Patch, repair and restore all areas affected by the work
- **New:** Develop design solutions to respond to mould findings such as replacing Variable Air Volume (VAV) boxes in the South Building with fan-powered boxes
- **New:** Install a Dedicated Outdoor Air Supply (DOAS) unit for the South Building
- **New:** Remediate mould contaminated drywall on perimeter walls, correct defects and restore walls
- **New:** Provide intensive duct cleaning for the AHU2 ductwork in the South Building
- Windows will be replaced under a separate new project

**Project Manager:** Leah Rossini, Colliers Project Leaders for Infrastructure Ontario

**Design Consultant:** Pinchin Ltd.

**Contractor:** Bird Mechanical

## Key Dates

June 21, 2021: Remediation work begins  
February 28, 2022: Remediation work completed  
March 7, 2022: Courthouse resumes normal business operations

## Window Replacement

The Indoor Air Quality (IAQ) and Mould Study included intrusive investigations that showed air and water leakage at exterior windows were the primary contributing sources for mould in the perimeter drywall. IO will replace these windows to address air and water leakage. Window replacement will be carried out as a separate project that will be integrated with the balance of the program.

The windows must be replaced before the repairs to the perimeter wall can be completed to avoid potential water damage and mould growth during construction.

## Project Scope

Replace windows in the North and South Buildings, including individual windows and curtain wall windows. Replacement windows will not be operable except for judicial chambers, where operable windows will be installed.

A design is being developed for a single point of entry. Replacement of some existing windows may be deferred if they are not contributing to mould growth and would be affected by construction of the single point of entry.

The design specification for the windows is considering the likely delivery time by suppliers. Covid-19 operating restrictions, constraints on supply and high demand have caused long lead times between the order date and delivery of windows on some recent projects. The new windows will be specified to minimize the impact of those long lead times.

**Project Team:** Leah Rossini, Colliers Project Leaders for Infrastructure Ontario

**Design Consultant:** To be determined

**Contractor:** To be determined

## Key Dates

September 2021: Contractor procurement and award

October 2021: Site measurements and approval of shop drawings, place orders

February 2022: Delivery and installation completion

## Relocation of Operations Back to the Milton Courthouse

After the mould remediation has been completed, all court functions will move back to the Milton Courthouse and resume normal operations.

### Project Scope

This project includes all the necessary move tasks to achieve a seamless relocation from the temporary facilities back to the courthouse.

**Project Team:** Leah Rossini, Colliers Project Leaders for Infrastructure Ontario

**Design Consultant:** To be determined

### Key Dates

July 2021: Project initiated

March 5 & 6, 2022: Move weekend

March 7, 2022: Court operations return to the Milton Courthouse