

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 parallel, a new single point of entry and security system 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. Health impacts may occur where mould is growing within buildings, as was the case at the Milton Courthouse. This program aims to find areas of mould growth, remediate them, and eradicate the conditions that support mould growth to minimize the potential for mould growth in the future.

Program Scope

We are in the final stages of the program. All identified mould has been removed and most of the new mechanical systems have been installed. Mechanical work is now focused on commissioning the systems – a process that confirms the systems are working as they were designed to perform. Work also continues in several parallel streams including the completion of the window replacement, the reinstatement of all finishes that were removed, and installation of new AV systems to support hybrid hearings.

Core Projects:

- Milton Courthouse Temporary Relocation – **Completed**
- Indoor Air Quality (IAQ) and Mould Study – **Phase 1 Completed**
- Heating, Ventilation and Air Conditioning (HVAC) Study – **Completed**
- Mould Remediation (AHU1) – **Commissioning Phase**
- Window Replacement – **Construction Phase**
- Relocation of Operations back to the Milton Courthouse – **Planning Phase**
- Upgrades to mechanical systems including replacement of manually operated fan coil units below the windows in the South Building – **Commissioning Phase**

Projects Outside the Scope of the Program:

- Exterior improvements – repairs to limestone panels, grading study – **Completed**
- Refresh selected spaces and upgrade courtroom technology – **Construction Phase**
- New single point of entry and security system upgrades – **Initiation**

Program Director: John Alley – Colliers Project Leaders

Program Manager: Claire Vial – Colliers Project Leaders

Indoor Air Quality (IAQ) and Mould Study

The Indoor Air Quality (IAQ) and Mould Study has two phases. The first phase began in February 2021 and has been completed. It included a mould assessment, including air sampling and intrusive testing in areas of the building where previous records indicated a potential for mould. It also included an assessment of indoor air quality throughout the building. 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 (CO₂), carbon monoxide (CO), total volatile organic compounds (TVOC), and particulate matter (PM₁₀). In addition, the HVAC operations were assessed, and studies confirmed the root causes where additional mould growth was found. Scope was added to other projects to address all root causes

The second phase will assess the same parameters over a full year after the building improvements have been completed.

Project Scope

The study included the following activities:

- Weekly mould sampling until staff moved 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**
- Hygro-thermal study to identify any defects in exterior walls for correction – **Completed**
- Assessment of the indoor air quality before corrective work, including sampling and data logging for:
 - Carbon dioxide (CO₂)
 - Carbon monoxide (CO)
 - Relative humidity
 - Temperature
 - Particulate Matter (PM₁₀)
 - Total Volatile Organic Compounds (TVOC) – **Completed**
- Design of additional IAQ monitoring instruments to be installed as part of the Mould Remediation project – **Completed**

Phase 1 Results: Mould was confirmed behind the drywall on exterior walls and in 3 of 30 new samples in AHU-2 ductwork. Root cause analysis identified areas where water was penetrating the exterior stonework and at windows. Remediation has been incorporated into the Mould Remediation and Windows Projects.

Phase 2 will include assessment of the indoor air quality after the move back to the courthouse.

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

Consultant: Pinchin Ltd.

Key Dates

November 2021:	Design for IAQ monitoring instruments to be completed
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 was conducted in parallel with the first phase of the IAQ and Mould Study, using data from that study to assess the effectiveness of the HVAC systems and define improvements that are needed to provide good indoor air quality.

The study was expanded to assess plumbing and piping for potential leaks. This provides increased certainty that causes of mould have been identified and HVAC systems have been designed to minimize the likelihood of mould growth.

The study has been completed and recommendations from this study have been incorporated into the Mould Remediation Project.

Project Scope

This completed HVAC Study gives a comprehensive assessment of the heating and cooling systems within the Milton Courthouse. The study:

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

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

Consultant: H. H. Angus & Associates Limited

Key Dates

August 30, 2021: Draft and Final HVAC report submitted - **Completed**

Mould Remediation (AHU1)

This IO base building project is remediating mould in the Air Handling Unit 1 (AHU1) system 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 remained within established and acceptable limits while staff still occupied the building. Testing began on January 13, 2021 and concluded the week of June 19, 2021 after occupants were relocated to the temporary facility.

The scope has been expanded beyond the AHU1 system to address conditions found during intrusive IAQ testing and the HVAC Study.

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 1 for the North Building and DOAS 2 for the South Building) systems to increase the amount of fresh air brought into the building - **Completed**
- Removal of contaminated air distribution ducts and insulation serving AHU1 and replacement with new ducts and sound isolation units - **Completed**
- Removal of contaminated and leaking mechanical units and replacement with new units – **In progress**
- Design and implementation of solutions to respond to mould findings such as replacing Variable Air Volume (VAV) boxes in the South Building with fan-powered boxes - **Completed**
- Remediation of mould-contaminated drywall on perimeter walls - **Completed**
- Provision of intensive duct cleaning for the AHU2 ductwork in the South Building - **Completed**
- Remediation of mould found behind the walls of two (2) public washrooms (men's and women's) on the third floor - **Completed**

(Windows are being 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

December 2021: Installation of DOAS2 – **Completed**
February 14, 2022: Substantial Performance
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 is replacing all windows to address air and water leakage. The project also includes improvements to the air barriers and replacement of the walls inside the building perimeter to avoid potential water damage and mould growth.

A related project has completed improvements to the building enclosure to reduce the risk of water entry including repairs to limestone panels, repairing mortar joints and flashing, and addressing grading issues.

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. Window glass has been selected for the highest reflectivity that could be obtained within the schedule constraint.

- Protection of furniture and materials that are not moved to the temporary facilities
- Removal and replacement of windows
- Removal and replacement of curtain wall at entries
- Repairs to improve air barrier - **Completed**
- Reinstatement of the perimeter walls using mould resistant drywall

Project Team: Leah Rossini, Colliers Project Leaders for Infrastructure Ontario
Design Consultant: Pinchin Ltd.
Contractor: Bird Mechanical

Key Dates

January 14, 2022: Installation of windows started
February 7, 2022: Installation of windows to be completed
February 15, 2022: Installation of curtain wall at entries to be completed
February 24, 2022: Reinstatement of interiors to be completed

Relocation of Operations Back to the Milton Courthouse

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

To assist with current case demand, additional temporary in-person courtrooms were created.

Project Scope

Two additional temporary SCJ jury, non-custody courtrooms were made available at the Oakville Conference Centre with essential support spaces. Two additional temporary OCJ non-jury, in-custody courtrooms have been made available at the Burlington POA Courthouse.

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

The project also includes decommissioning and restoration of the temporary facilities before the end of the temporary leases on March 30, 2022.

Project Team: Lise Genest, Colliers Project Leaders for Infrastructure Ontario for temporary courtrooms

Leah Rossini, Colliers Project Leaders for Infrastructure Ontario for relocation

Design Consultant: Heman Shih Architect Inc.

Key Dates

November 15:	Two SCJ Courtrooms and one jury deliberation room available – Completed
December 1:	Two OCJ courtrooms available at Burlington POA Courthouse – Completed
December 3:	Second SCJ jury deliberation room available, GONet connections – Completed
December 7:	Move planning kickoff meeting – Completed
Week of February 28:	Early move activities
March 5 & 6, 2022:	Move from Burlington Convention Centre and Marriott Courtyard
March 7, 2022:	Court operations return to the Milton Courthouse
March 2022:	Move from Oakville Conference Centre and Burlington POA Courthouse – date to be confirmed.