



Type-2 Ceiling Space Investigation for Presence of Plaster

Tabaret Hall Building, University of Ottawa Campus, Ottawa, Ontario

BCE Project: 22-824

Report Issued: October 28, 2022



Prepared for:

Patrick Labrèche
Environment Health & Safety Officer,
University of Ottawa

Prepared by:

Buller Crichton Environmental Inc.
1 Raymond St., Suite 102
Ottawa, ON K1R 1A2
613-729-5291

1 INTRODUCTION

Buller Crichton Environmental Inc. (BCE) was retained by the University of Ottawa (Client) to complete a type-2 ceiling space investigation for the entire Tabaret Hall building to determine the presence or absence of asbestos-containing plaster adhered to the concrete deck. The survey was completed by BCE from October 3rd-7th, 2022.

This report was prepared as requested by the Client to fulfill the following:

- Ontario Occupational Health & Safety Act – R.S.O. 1990, as amended, including:
 - Designated Substances – Ontario Regulation 490/09, as amended
 - Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations – Ontario Regulation 278/05.

This report should be provided to contractors prior to conducting demolition or renovation work at the Site.

2 SURVEY LIMITATIONS

The following areas were not accessed during the site visit:

- Room W0041 – Labelled “DANGER: Fire Protection Fluids being released – Do not enter without approved self-contained breathing apparatus or until area is properly ventilated”
- Room C010 – Hydro Vault
- Room C018A – Labelled “DANGER: Fire Protection Fluids being released – Do not enter without approved self-contained breathing apparatus or until area is properly ventilated”
- Room L070 – Active Type-3 Asbestos Abatement
- Room M084 – Café
- Room M083F – Storage
- Room L119
- Room L133B
- Room L321 - Office

3 SCOPE OF WORK

BCE's scope of work was limited to the following:

1. Review all ceiling spaces above acoustic tiles within the building via Type-2 entry procedures to determine the presence/absence of plaster adhered to the concrete deck.
 - a. Access was granted by a mobile Type-2 containment.
 - b. Subsequent Type-2 containments were also constructed for areas in which the mobile Type-2 containment could not be utilized.
2. Apply orange stickers to the ceiling tile grid in areas that were observed to have asbestos-containing plaster adhered to the concrete deck.
3. Apply green stickers to the ceiling tile grid in areas with no plaster present on the concrete deck.
4. Complete precautionary PCM air samples within representative areas of the mobile Type-2 containment system.
 - a. The formal report associated with this sampling is attached within **Appendix C**
5. Complete PCM air clearances within each stationary Type-2 enclosure prior to demobilization.
 - a. The formal report associated with this sampling is attached within **Appendix C**
6. Provide a comprehensive AutoCAD drawing indicating whether plaster is present or absent in each room surveyed.

BCE also reviewed the following report prior to the site assessment:

- “Expanded Designated Substances Report - Update, Tabaret Hall, 75 Laurier Ave, Ottawa, Ontario” – prepared by Buller Crichton Environmental Inc. dated February 25th, 2022.

4 STANDARDS, REGULATIONS AND GUIDELINES

4.1 Designated Substances

Section 30 of the *Occupational Health & Safety Act (OH&S Act)* requires that a document summarizing the presence of these designated substances must be available to contractors and subcontractors requesting tenders, prior to beginning a construction project (including building renovation or demolition). This report serves that purpose. However, scaled drawings and contract specifications are still required should this job be tendered to multiple contractors.

4.1.1 Asbestos

Ontario Regulation 278/05 – Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations and made under the *OH&S Act*, outlines specific procedures for identifying asbestos in buildings and on construction sites. In addition, it outlines requirements for their removal and / or re-assessment and management depending on whether any identified materials are to remain in the building. Asbestos-containing materials (ACM) in good condition can remain in the building if it is managed as prescribed in this regulation, including but not limited to implementation of an Asbestos Management Plan (AMP), annual condition assessment,

notification to tenants and training for specified workers. However, any ACM must be removed prior to disturbance because of renovations and / or demolition of the Site.

R.R.O. 1990, Regulation 347 *General – Waste Management* as amended (*O. Reg. 347/90*), made under the *Ontario Environmental Protection Act*, R.S.O. 1990, Chapter E.19, as amended (EPA) sets out requirements for general waste management including ACM. This regulation requires the disposal of asbestos waste in double sealed containers (e.g., a six-mil polyethylene bag or hard plastic barrel), properly labelled and free of cuts, tears, or punctures. The waste must be disposed of in a licensed waste facility which has been properly notified of the presence of asbestos waste.

5 METHODOLOGY

Site sampling and assessment was completed from October 3rd-7th and 20th by Jessica Joubarne of BCE with the support of Elite Environmental Group Inc. personnel. A mobile Type 2 containment was utilized to access ceiling spaces from October 3rd- 7th throughout the building. Precautionary PCM air monitoring was completed adjacent to the mobile containment (one sample per shift), with results presented in **Appendix C**.

In each area, a visual inspection was completed to determine the presence or absence of plaster. In areas with plaster present, an **orange** sticker was attached to the ceiling tile grid. **Green** stickers were attached to the ceiling tile grid in areas where plaster was not observed to be present.

Additional stationary Type 2 isolations were built to access areas that were inaccessible using the mobile containment on October 20th, as requested by the Client. All containments were built in accordance with Ontario Regulation 278/05, and PCM air clearance sampling was completed (<0.01 f/cc) prior to containment demobilization. Formal reports associated with these air clearance programs are presented in **Appendix C**.

6 RESULTS AND DISCUSSION

Based on the review of previous reports and visual assessment, the following is a summary of the results. A comprehensive drawing is attached as **Appendix B**.

6.1 Plaster Ceilings

6.1.1. Open Plaster Ceilings:

The following areas were noted to have open asbestos-containing plaster ceilings (no acoustic tiles):

- Main staircase within C-Wing, levels 0-3
- B staircase, levels 0-3
- D staircase, levels 0-3
- E staircase, levels 0-3
- Room W112, levels 1-2
- Main Entrances
- Mechanical Room C12G, H, J, and K
- Mechanical Room L236A
- M staircase, levels 3-4
- F staircase, level 5

6.1.2. Plaster above dropped ceiling:

The remaining areas noted on drawings labelled as plaster ceilings were observed to have plaster ceilings above the dropped acoustic ceiling tile grid or plaster above solid drywall (observed through a hatch).

6.2 Non-Plaster Ceilings

The following areas were observed as non-plaster ceilings:

- W-Wing level 00 → Concrete slab
- Area around staircase C (C01B) → Concrete Slab
- Room M083A-E and Room C01D → Corrugated Metal
- Area L113 → Concrete Slab
- Area N101 → Concrete Slab
- L-Wing level 3 → Concrete Slab
- C-Wing level 4 (C450, C452, C455-C459) → Concrete Slab

7 RECOMMENDATIONS

7.1 General Recommendations

Based on the findings, the *general recommendations* are:

- Entry into ceiling spaces throughout the building where plaster was identified above dropped acoustic ceiling tile grid will require Type-2 asbestos abatement precautions due to the presumed presence of asbestos-containing plaster debris.
 - Please refer to **Appendix B** for locations of asbestos-containing plaster;
- This report should be provided along with the full building DSR and project specific DSR to contractors prior to conducting demolition or renovation work at the Site. Further, contractors shall have an exposure control plan in place for each designated substance identified in this report.
- This report should be used to supplement the full building DSR as there are many other asbestos-containing materials within the building that could impact work being completed in ceiling spaces (asbestos-containing ceiling tiles, asbestos-containing drywall joint compound, etc.)

8 REPORT LIMITATIONS

This report was prepared for the exclusive use of the Client. This report is based on data and information collected during the Site visit by Buller Crichton Environmental Inc. as described in this report.

The conclusions and recommendations contained in this report are based upon professional opinions regarding the subject matter. These opinions are in accordance with currently accepted environmental assessment standards and practices applicable to these locations and are subject to the following inherent limitations:

- The data and findings presented in this report are valid as of the date of the investigation. The passage of time, manifestation of latent conditions or occurrence of future events may warrant further exploration at the properties, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in this report.
- The findings, observations and conclusions expressed by BCE in this report are not, and should not be considered, an opinion concerning compliance of any past or present owner or operator of the building with any federal, provincial, or local laws or regulations.
- Additional Designated Substances not identified in this report may become evident during demolition activities. Should additional information become available, BCE requests that this information be brought to our attention so that we may re-assess the conclusions presented herein. All quantities contained in this report are approximate and based on visual observations made in accessible areas.
- Although effort was made to expose and sample potential designated substances, there is a possibility that additional concealed substances/materials may be present beneath existing flooring, behind wall cavities, roof systems, above ceilings, and any other inaccessible areas such as pipe chases at the Site.
- Should further designated substances be encountered during any renovation or demolition activities, those materials must be managed in accordance with applicable regulations.

9 CLOSURE

If you have any questions or require any further information, please feel free to contact the undersigned at 613-729-5291. Thank you for the opportunity to be of service. We look forward to working with you again.

Best Regards,

BULLER CRICHTON ENVIRONMENTAL INC.
1 Raymond St., Suite 102
Ottawa, ON K1R 1A2

Prepared by:



Jessica Joubarne, HBSc.
Jr. Environmental Health & Safety Technician

Reviewed by:



Derek Stashick, B.Ed, CMI, C-NRPP
Senior Project Manager/Consultant

Appendix A - Site Photographs




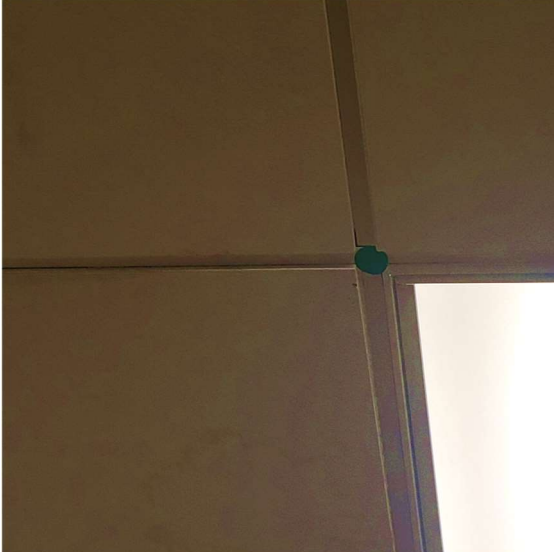
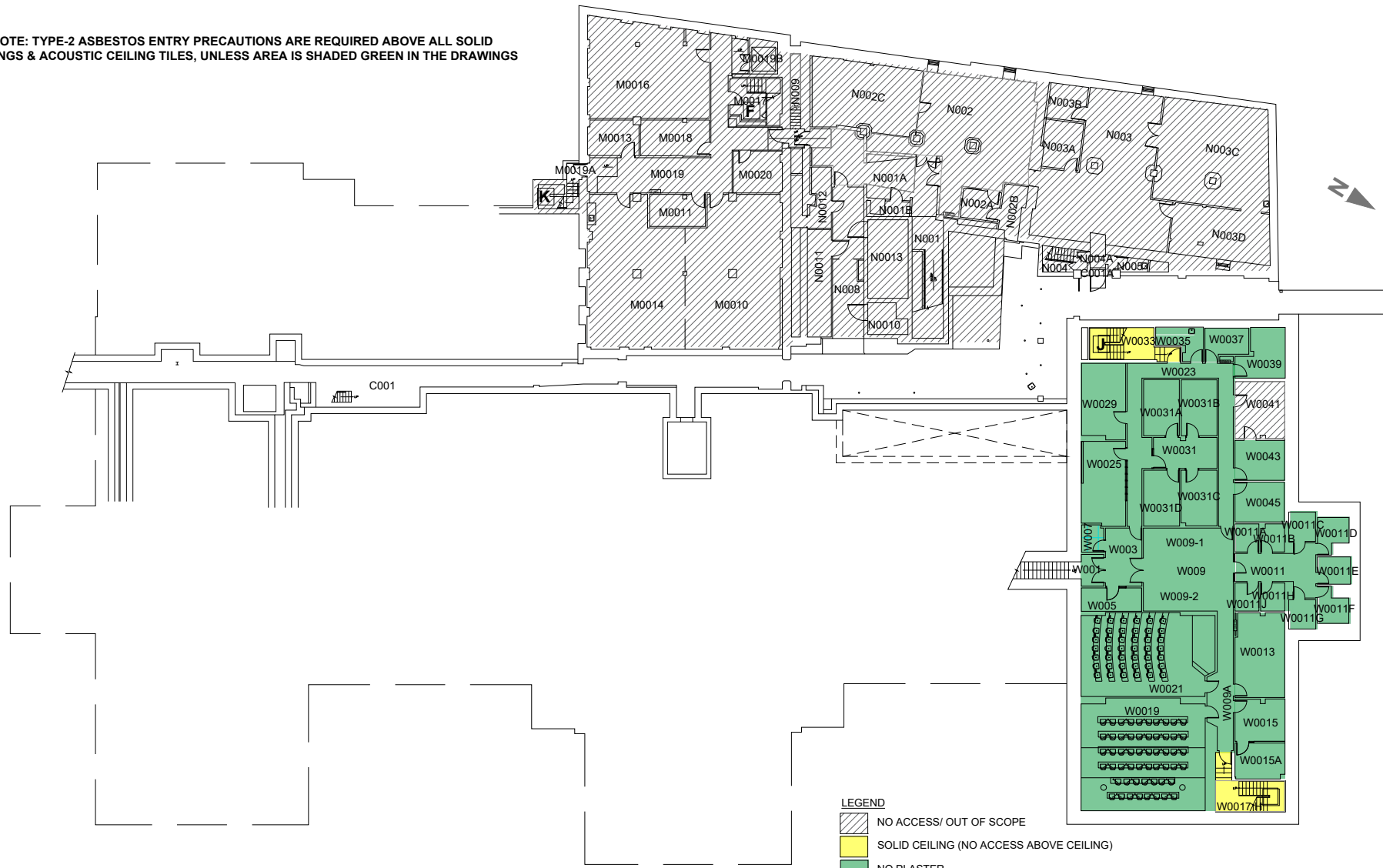
Photo #		Material Location / Description
1		View of Type 2 (intermediate/Moderate Risk) mobile containment used during the ceiling space investigation.
2		View of corrugated metal ceiling observed in room M083A-E and room C01D.

Photo #		Material Location / Description
3	 A photograph showing a close-up view of a ceiling. The top part of the image shows a dark, textured surface, likely the acoustic ceiling tiles. Below this, there is a large, irregular hole in the ceiling, revealing a rough, greyish-brown plaster surface. A white pipe or duct is visible on the left side, and a yellowish-green material is visible at the bottom of the hole.	General view of plaster ceiling observed above acoustic ceiling tiles.
4	 A photograph showing a close-up view of a ceiling. The image shows a dark, textured surface, likely the acoustic ceiling tiles. A green sticker is placed on the frame of the tiles, indicating that plaster is not present on the ceiling above the tiles.	View of green sticker placed on the acoustic ceiling tile frame indicating plaster is not present on the ceiling above the tiles.

Appendix B - Site Drawings

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS

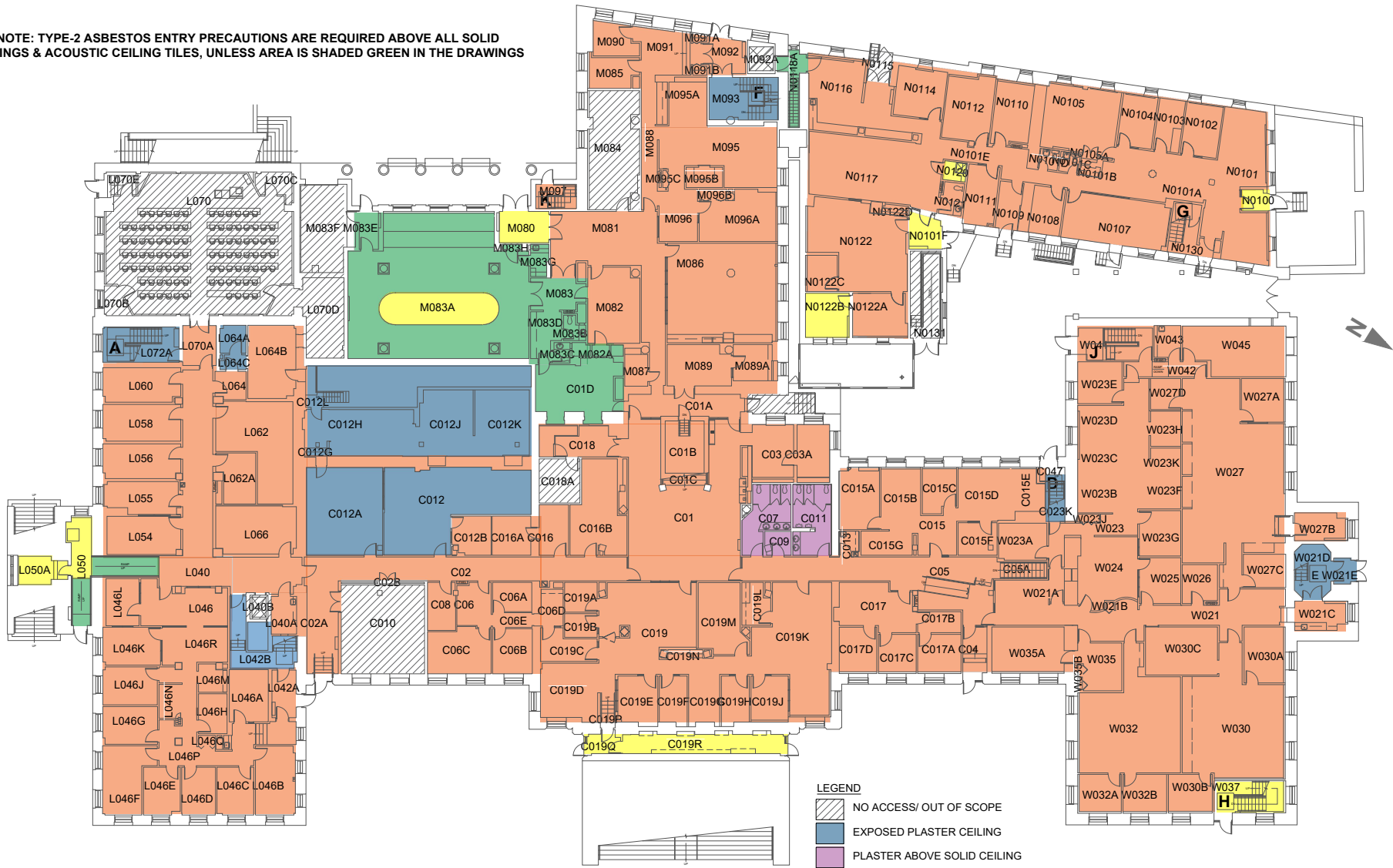


1 LEVEL 00 FLOOR PLAN, TABARET HALL
NTS

LEGEND
 [Diagonal Lines] NO ACCESS/ OUT OF SCOPE
 [Yellow] SOLID CEILING (NO ACCESS ABOVE CEILING)
 [Green] NO PLASTER

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-01

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS

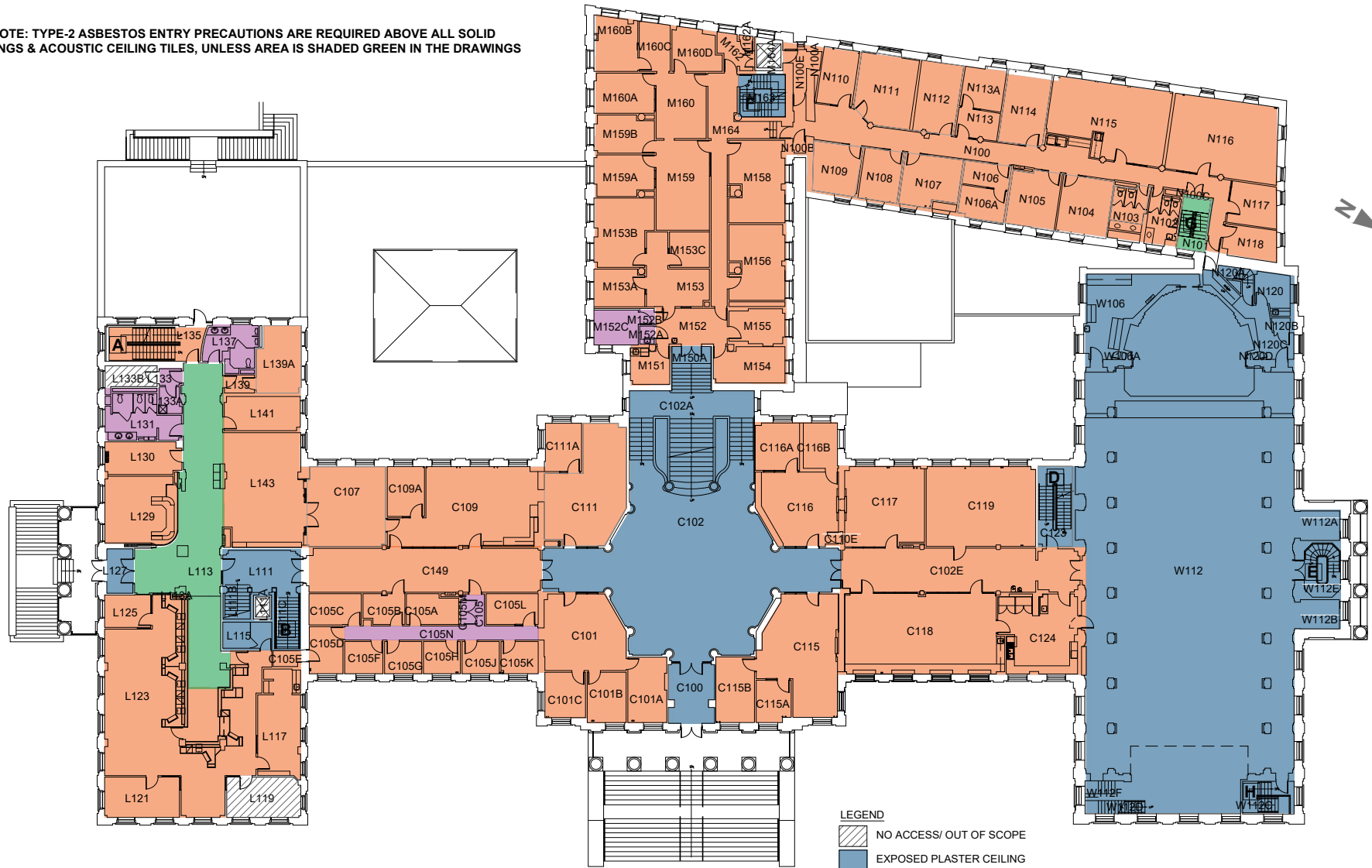


1 LEVEL 0 FLOOR PLAN, TABARET HALL
NTS

- LEGEND**
- NO ACCESS/ OUT OF SCOPE
 - EXPOSED PLASTER CEILING
 - PLASTER ABOVE SOLID CEILING
 - PLASTER ABOVE ACOUSTIC CEILING TILE
 - SOLID CEILING (NO ACCESS ABOVE CEILING)
 - NO PLASTER

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-02

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS

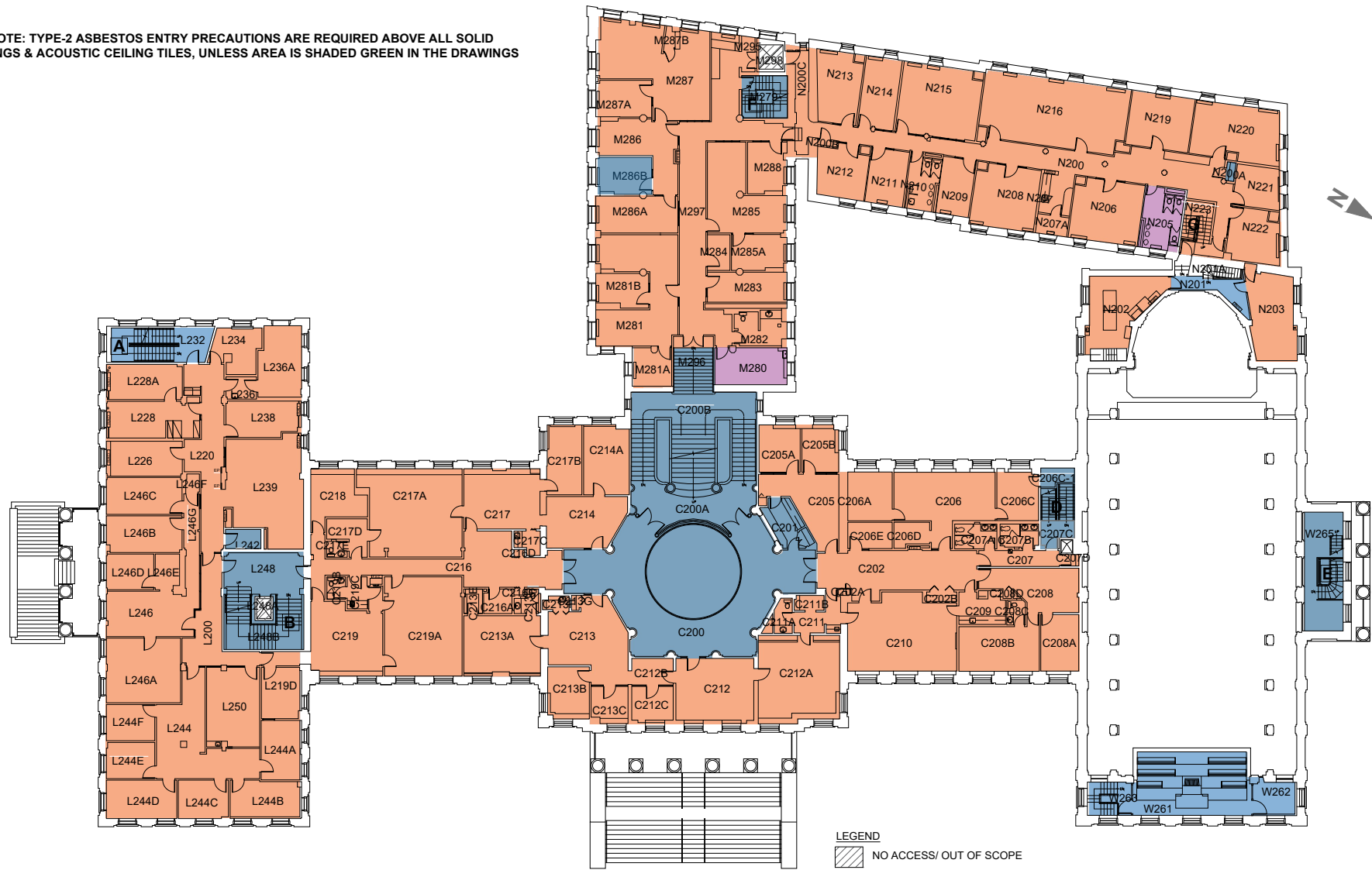


1 LEVEL 1 FLOOR PLAN, TABARET HALL
NTS

- LEGEND**
- NO ACCESS/ OUT OF SCOPE
 - EXPOSED PLASTER CEILING
 - PLASTER ABOVE SOLID CEILING
 - PLASTER ABOVE ACOUSTIC CEILING TILE
 - NO PLASTER OR OPEN ABOVE ACOUSTIC CEILING TILE

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-03

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS

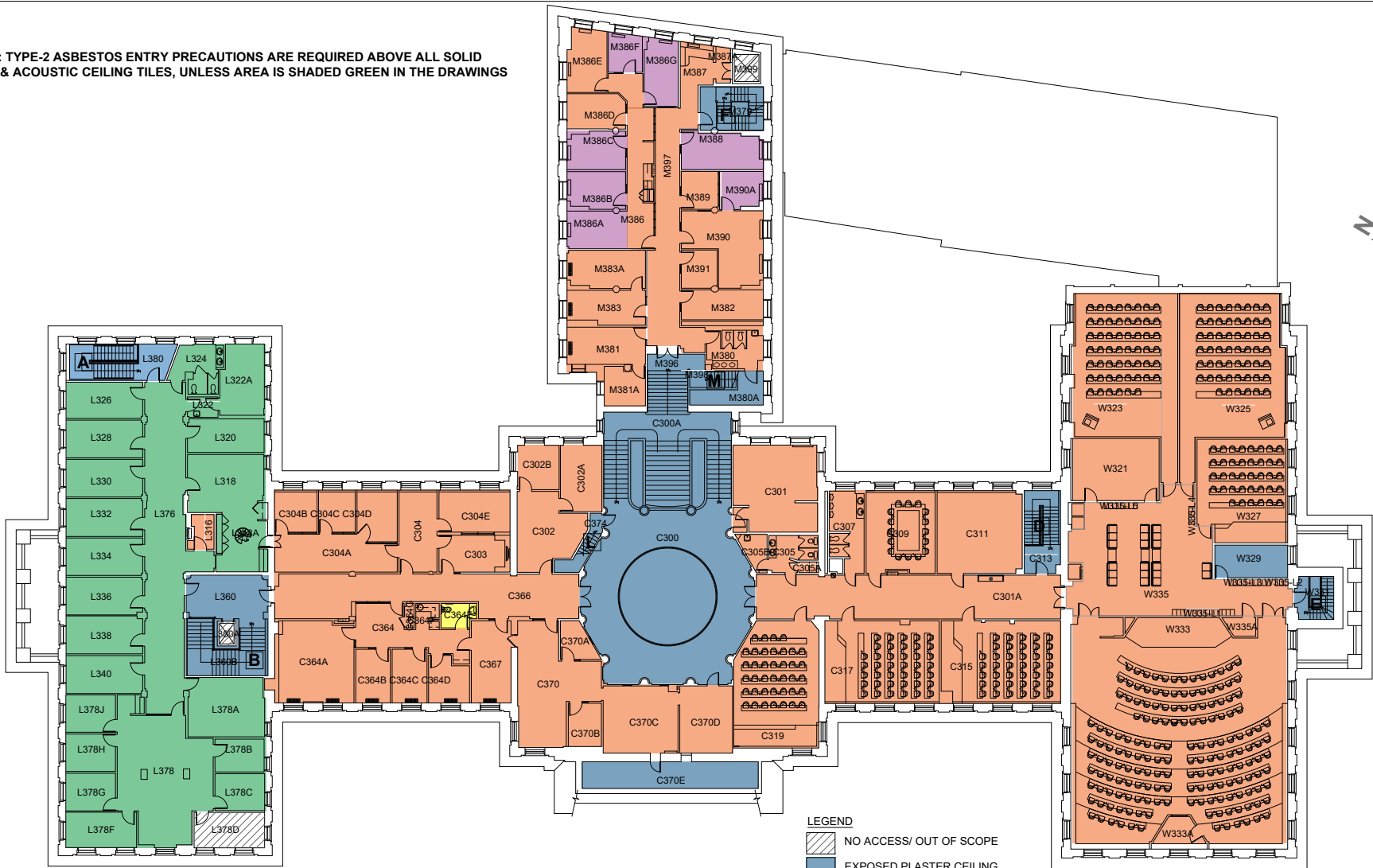


- LEGEND**
- NO ACCESS/ OUT OF SCOPE
 - EXPOSED PLASTER CEILING
 - PLASTER ABOVE SOLID CEILING
 - PLASTER ABOVE ACOUSTIC CEILING TILE

1 LEVEL 2 FLOOR PLAN, TABARET HALL
NTS

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-04

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS

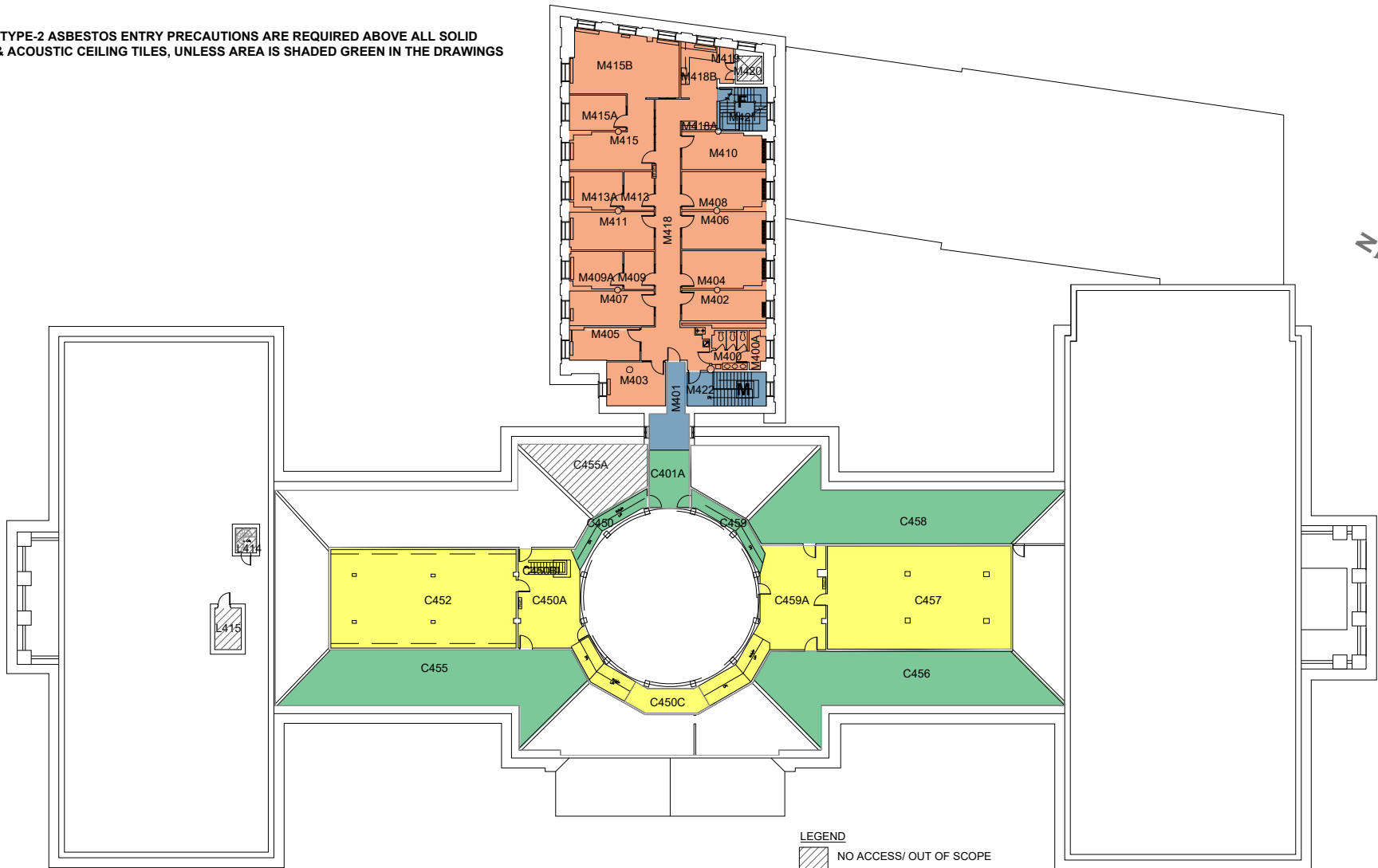


1 LEVEL 3 FLOOR PLAN, TABARET HALL
NTS

- LEGEND**
- NO ACCESS/ OUT OF SCOPE
 - EXPOSED PLASTER CEILING
 - PLASTER ABOVE SOLID CEILING
 - PLASTER ABOVE ACOUSTIC CEILING TILE
 - SOLID CEILING (NO ACCESS ABOVE CEILING)
 - NO PLASTER

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-05

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS

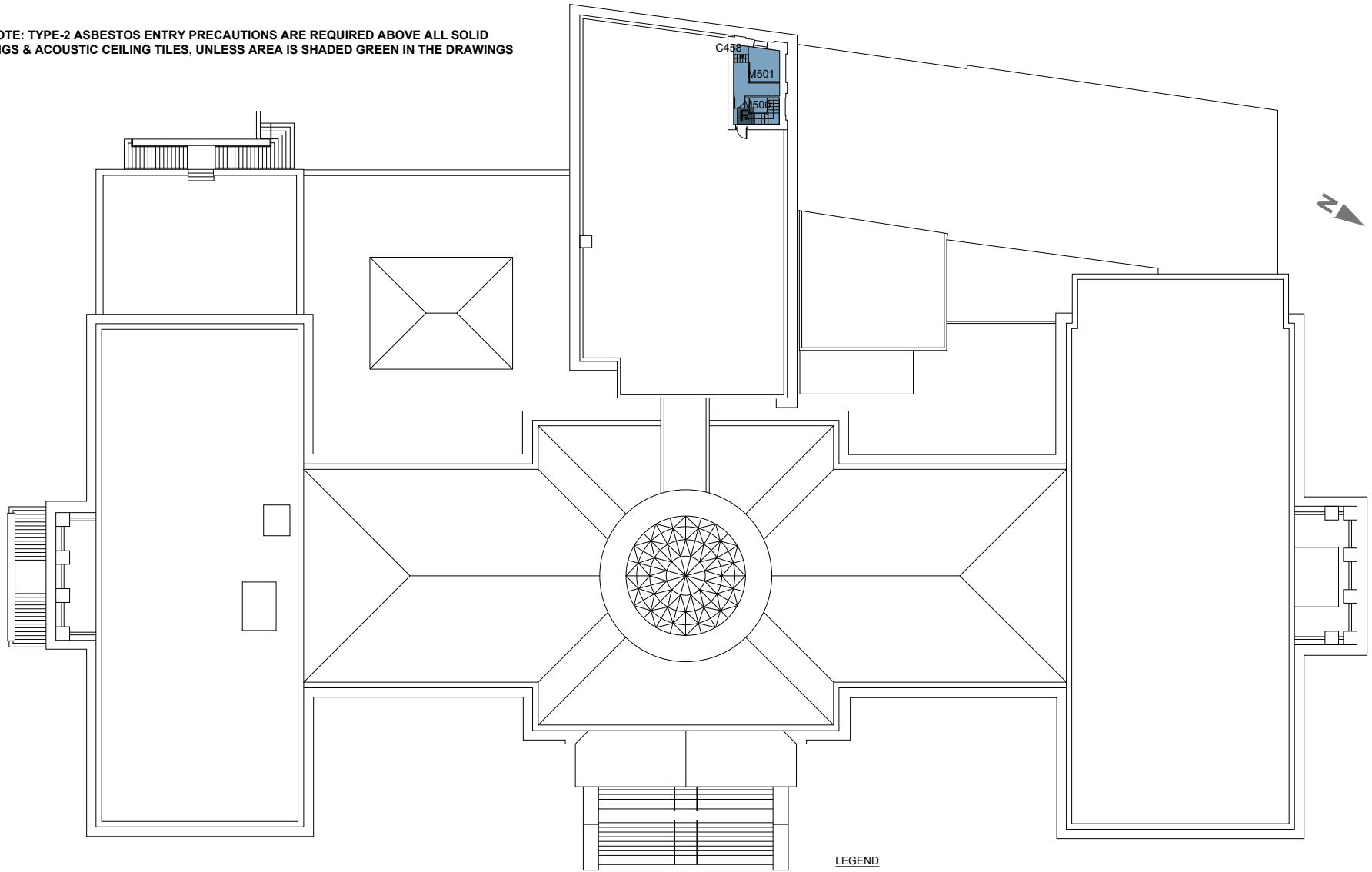


- LEGEND**
- NO ACCESS/ OUT OF SCOPE
 - EXPOSED PLASTER CEILING
 - PLASTER ABOVE ACOUSTIC CEILING TILE
 - SOLID CEILING (NO ACCESS ABOVE CEILING)
 - NO PLASTER

1 LEVEL 4 FLOOR PLAN, TABARET HALL
NTS

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-06

NOTE: TYPE-2 ASBESTOS ENTRY PRECAUTIONS ARE REQUIRED ABOVE ALL SOLID CEILINGS & ACOUSTIC CEILING TILES, UNLESS AREA IS SHADED GREEN IN THE DRAWINGS



1 LEVEL 5 FLOOR PLAN, TABARET HALL
NTS

LEGEND
 EXPOSED PLASTER CEILING

Project:	CEILING PLASTER INVESTIGATION	Date:	OCTOBER 28, 2022
Project Location:	TABARET HALL, 550 CUMBERLAND STREET, OTTAWA ON	Completed by:	JR
Client:	UNIVERSITY OF OTTAWA	Checked by:	JJ
		Project Number:	22-824
		Figure Number:	TBT-07

Appendix C - PCM Air Sampling Reports

Precautionary Air Monitoring Report

DISTRIBUTION OF REPORT

Patrick Labrèche	plabrech@uottawa.ca	uOttawa
Derek Stashick	derek@bullercrichton.ca	Buller Crichton Environmental Inc.

PROJECT INFORMATION

Inspection Date: October 3 rd – 6 th , 2022 Report Date: October 21, 2022	BCE Representative(s): Jessica Joubarne	BCE Project: 22-824 Report: #1
Site Address: Tabaret Hall – uOttawa 550 Rue Cumberland Street, Ottawa, Ontario Site Specific Information: Throughout Building	Project Detail: Precautionary PCM Air Sampling During Type-2 Ceiling Space Investigation for Presence of Plaster	
	Client: uOttawa	Contractor: Elite Environmental Group Inc.

INTRODUCTION AND BACKGROUND

Buller Crichton Environmental Inc. (BCE) was retained by uOttawa (Client) to complete precautionary PCM air sampling during the Type 2 (Intermediate/Moderate Risk) work procedures occurring within Tabaret Hall located at 550 Rue Cumberland Street, Ottawa, Ontario (Site).

The mobile Type 2 (Intermediate/Moderate Risk) containment was provided and constructed by Elite Environmental Group Inc. personnel to allow for the inspection of the ceiling space for presence of asbestos-containing plaster.

SCOPE OF WORK

BCE's scope of work was limited to the following:

1. Reviewing all ceiling spaces above acoustic tiles within the building via Type-2 entry procedures to determine the presence/absence of plaster adhered to the concrete deck.
 - a. Access will be granted by a mobile Type-2 containment.
2. Applying green stickers to the ceiling tile grid in areas with no plaster present on the concrete deck.
3. Complete Precautionary PCM air samples within representative areas of Type-2 enclosures.

This report will address item #3.

STANDARDS, GUIDELINES AND REGULATIONS

- Ontario Regulation 278/05 made under the Occupational Health and Safety Act (O. Reg. 278/05):
 - O. Reg. 278/05 applies to every building in which asbestos is present and to the owner of the building.
 - O. Reg. 278/05 also applies to every project and its owner when the owner or his agent hires a contractor or subcontractor to perform work or supply services.
 - The Regulation requires that all work that may expose a worker to asbestos be classified as a Type 1, Type 2, or Type 3 operation. The procedures for carrying out Type 1, Type 2, and Type 3 operations are outlined in sections 14, 15, 16, 17, and 18 of the Regulation.

AIR SAMPLING METHODOLOGY

Air samples were collected using 25-mm three-piece filter cassettes containing a 0.8µm cellulose ester membrane filter and equipped with a 50-mm electrically conductive extension cowl. The filter cassettes were attached to a high-volume air sampling pump calibrated with a primary calibration device and filter cassette in line to a known flow rate. At the completion of air testing the samples were analyzed in accordance with U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, Issue 3: Asbestos and other Fibres by PCM (June 14, 2019), using the asbestos fibre counting rules. As required by NIOSH Method 7400, field blanks were also analyzed to ensure that no contamination of the filters occurred during sampling or analytical procedures.

The Limit of Detection (LOD) depends on sample volume and quantity of interfering dust. Fibres less than approximately 0.25 µm in diameter will not be detected by this method. This analytical method gives an index of airborne fibres as it cannot differentiate between asbestos and other fibres. Only fibres with a length greater than 5 µm and a length to width ratio equal or greater than 3:1 were counted. Fibres with a diameter 0.25 µm or smaller cannot be detected using this method. Other airborne particles that fall within the counting range criteria will act as positive interferences. Result of analysis has been field blank corrected and is reported as the concentration of fibres per cubic centimeter of air (f/cc).

AIR SAMPLING RESULTS

Table 1 provides a summary of PCM air sampling findings.

Table 1 – PCM Air Sampling

PCM Air Sampling Results – October 3 rd – 6 th , 2022								
Sample ID	Sample Type	Location/Description	Flow Rate (L/min)	Air Volume (L)	Fibres	Fields	Fibres/mm ²	Result (fibre/cc)
AS-824-01	Ambient	Oct 3 rd – Level 0 C-Wing	15.96	1,675.8	<5.5	100	<7	<0.05
AS-824-02	Ambient	Oct 4 th – Level 1 M-Wing	15.96	1,915.2	<5.5	100	<7	<0.05
AS-824-03	Ambient	Oct 5 th – Level 0 Adj. C018	15.96	877.8	<5.5	100	<7	<0.05
AS-824-04	Ambient	Oct 6 th – Level 00 W-Wing	15.96	957.6	<5.5	100	<7	<0.05
AS-824-05	Quality Control	Field Blank*	NA	NA	0	100	<7	NA
AS-824-06	Quality Control	Field Blank*	NA	NA	0	100	<7	NA

Analyst | Counter ID: Jessica Joubarne | 14 | NIOSH 7400, BCE 2021 Analyzed on: October 3rd – 7th, 2022
 Samples were analyzed at the BCE Laboratory, located at 102-1 Raymond Street, Ottawa, ON K1R 1A2
 BCE is in good standing with the EMSL Interlaboratory PCM Round Robin program.

1. Calibration of air sampling equipment checked against a primary standard.
2. *Field blanks per NIOSH requirement
3. Sample media to be discarded in 30 days unless otherwise requested by the client.
4. Results only relate to the samples tested.

PCM air monitoring results indicate that fibre concentrations were below the Occupational Exposure Limit - Time Weighted Average (OEL-TWA) of 0.1 fibres per cubic centimetre (f/cc) as prescribed by the Canadian Occupational Health and Safety Regulations (SOR/86-304) (0.1 f/cc).

Based on the analytical results obtained, no concerns were identified with respect to airborne fibre concentrations.

REPORT LIMITATIONS

In performing the assessment, BCE has relied in good faith on information provided by other individuals noted in this report.

Interpretation of the sample results are based on current industry standards. This includes sample comparison against applicable guidelines and threshold values as well as comparison against standard samples.

Work performed by BCE was conducted in accordance with generally accepted scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied, or intended by the agreement executed with the Client, or by furnishing oral or written reports or findings. The Client acknowledges that subsurface/concealed conditions may vary from those encountered inspected. BCE could only comment on the conditions observed on the dates and times the assessment was performed. The work was limited to those areas of concern identified by the Client. Other areas of concern may exist but were not investigated within the scope of this assignment.

BCE makes no other representations whatsoever, including those concerning the legal significance of its findings or as to other legal matters mentioned in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time. BCE accepts no responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Information provided by BCE is intended for Client use only. BCE will not provide results or information to any party other than the Client, unless the Client, in writing, requests information to be provided to a third party.

Any use which a third party makes of this report is the responsibility of such third parties. BCE accepts no responsibility for damages, if any, suffered by any third party because of decisions made or actions based on this report. BCE states that to the best of our knowledge, the information presented is accurate.

CLOSURE

If you have any questions or require any further information, please feel free to contact the undersigned at 613-729-5291. Thank you for the opportunity to be of service. We look forward to working with you again.

Best Regards,

BULLER CRICHTON ENVIRONMENTAL INC.

1 Raymond St., Suite 102

Ottawa, ON K1R 1A2

Prepared by:



Derek Stashick, B.Ed, CMI, C-NRPP
Jr. Environmental Health & Safety Technician

Reviewed by:



Derek Stashick, B.Ed, CMI, C-NRPP
Senior Project Manager/Consultant

Precautionary Air Monitoring Report

DISTRIBUTION OF REPORT

Patrick Labrèche	plabrech@uottawa.ca	uOttawa
Derek Stashick	derek@bullercrichton.ca	Buller Crichton Environmental Inc.

PROJECT INFORMATION

Inspection Date: October 7 th , 2022 Report Date: October 21, 2022	BCE Representative(s): Jessica Joubarne	BCE Project: 22-824 Report: #2
Site Address: Tabaret Hall – uOttawa 550 Rue Cumberland Street, Ottawa, Ontario	Project Detail: Precautionary PCM Air Sampling within Ceiling Plenum	
Site Specific Information: Within Ceiling Space of Room C018	Client: uOttawa	Contractor: N/A

INTRODUCTION AND BACKGROUND

Buller Crichton Environmental Inc. (BCE) was retained by uOttawa (Client) to complete precautionary PCM air sampling within a typical ceiling plenum within Tabaret Hall located at 550 Rue Cumberland Street, Ottawa, Ontario (Site).

The building historically contains asbestos-containing plaster within the ceiling space and has been previously observed to be in poor condition in various areas. The precautionary PCM air sampling was requested by the University to observe fibre concentrations within a typical ceiling space of the building.

SCOPE OF WORK

BCE's scope of work was limited to the following:

1. Complete a precautionary PCM air sample within a ceiling space air plenum.

This report will address item #31

STANDARDS, GUIDELINES AND REGULATIONS

- Ontario Regulation 278/05 made under the Occupational Health and Safety Act (O. Reg. 278/05):
 - O. Reg. 278/05 applies to every building in which asbestos is present and to the owner of the building.
 - O. Reg. 278/05 also applies to every project and its owner when the owner or his agent hires a contractor or subcontractor to perform work or supply services.
 - The Regulation requires that all work that may expose a worker to asbestos be classified as a Type 1, Type 2, or Type 3 operation. The procedures for carrying out Type 1, Type 2, and Type 3 operations are outlined in sections 14, 15, 16, 17, and 18 of the Regulation.

AIR SAMPLING METHODOLOGY

Air samples were collected using 25-mm three-piece filter cassettes containing a 0.8µm cellulose ester membrane filter and equipped with a 50-mm electrically conductive extension cowl. The filter cassettes were attached to a high-volume air sampling pump calibrated with a primary calibration device and filter cassette in line to a known flow rate. At the completion of air testing the samples were analyzed in accordance with U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, Issue 3: Asbestos and other Fibres by PCM (June 14, 2019), using the asbestos fibre counting rules. As required by NIOSH Method 7400, field blanks were also analyzed to ensure that no contamination of the filters occurred during sampling or analytical procedures.

The Limit of Detection (LOD) depends on sample volume and quantity of interfering dust. Fibres less than approximately 0.25 µm in diameter will not be detected by this method. This analytical method gives an index of airborne fibres as it cannot differentiate between asbestos and other fibres. Only fibres with a length greater than 5 µm and a length to width ratio equal or greater than 3:1 were counted. Fibres with a diameter 0.25 µm or smaller cannot be detected using this method. Other airborne particles that fall within the counting range criteria will act as positive interferences. Result of analysis has been field blank corrected and is reported as the concentration of fibres per cubic centimeter of air (f/cc).

AIR SAMPLING RESULTS

Table 1 provides a summary of PCM air sampling findings.

Table 1 – PCM Air Sampling

PCM Air Sampling Results – October 7 th , 2022								
Sample ID	Sample Type	Location/Description	Flow Rate (L/min)	Air Volume (L)	Fibres	Fields	Fibres/mm ²	Result (fibre/cc)
AS-824-07	Ambient	Level 0 Plenum of Room C018	15.96	957.6	<5.5	100	<7	<0.05
AS-824-08	Quality Control	Field Blank*	NA	NA	0	100	<7	NA
AS-824-09	Quality Control	Field Blank*	NA	NA	0	100	<7	NA

Analyst | Counter ID: Jessica Joubarne | 14 | NIOSH 7400, BCE 2021 Analyzed on: October 11th, 2022
 Samples were analyzed at the BCE Laboratory, located at 102-1 Raymond Street, Ottawa, ON K1R 1A2
 BCE is in good standing with the EMSL Interlaboratory PCM Round Robin program.

1. Calibration of air sampling equipment checked against a primary standard.
2. *Field blanks per NIOSH requirement
3. Sample media to be discarded in 30 days unless otherwise requested by the client.
4. Results only relate to the samples tested.

PCM air monitoring results indicate that fibre concentrations were below the Occupational Exposure Limit - Time Weighted Average (OEL-TWA) of 0.1 fibres per cubic centimetre (f/cc) as prescribed by the Canadian Occupational Health and Safety Regulations (SOR/86-304) (0.1 f/cc).

Based on the analytical results obtained, no concerns were identified with respect to airborne fibre concentrations.

REPORT LIMITATIONS

In performing the assessment, BCE has relied in good faith on information provided by other individuals noted in this report.

Interpretation of the sample results are based on current industry standards. This includes sample comparison against applicable guidelines and threshold values as well as comparison against standard samples.

Work performed by BCE was conducted in accordance with generally accepted scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied, or intended by the agreement executed with the Client, or by furnishing oral or written reports or findings. The Client acknowledges that subsurface/concealed conditions may vary from those encountered inspected. BCE could only comment on the conditions observed on the dates and times the assessment was performed. The work was limited to those areas of concern identified by the Client. Other areas of concern may exist but were not investigated within the scope of this assignment.

BCE makes no other representations whatsoever, including those concerning the legal significance of its findings or as to other legal matters mentioned in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time. BCE accepts no responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Information provided by BCE is intended for Client use only. BCE will not provide results or information to any party other than the Client, unless the Client, in writing, requests information to be provided to a third party.

Any use which a third party makes of this report is the responsibility of such third parties. BCE accepts no responsibility for damages, if any, suffered by any third party because of decisions made or actions based on this report. BCE states that to the best of our knowledge, the information presented is accurate.

CLOSURE

If you have any questions or require any further information, please feel free to contact the undersigned at 613-729-5291. Thank you for the opportunity to be of service. We look forward to working with you again.

Best Regards,

BULLER CRICHTON ENVIRONMENTAL INC.

1 Raymond St., Suite 102

Ottawa, ON K1R 1A2

Prepared by:



Derek Stashick, B.Ed, CMI, C-NRPP
Jr. Environmental Health & Safety Technician

Reviewed by:



Derek Stashick, B.Ed, CMI, C-NRPP
Senior Project Manager/Consultant

Precautionary Air Monitoring Report

DISTRIBUTION OF REPORT

Patrick Labrèche	plabrech@uottawa.ca	uOttawa
Derek Stashick	derek@bullercrichton.ca	Buller Crichton Environmental Inc.

PROJECT INFORMATION

Inspection Date: October 20 th , 2022 Report Date: October 21, 2022	BCE Representative(s): Jessica Joubarne	BCE Project: 22-824 Report: #3
Site Address: Tabaret Hall – uOttawa 550 Rue Cumberland Street, Ottawa, Ontario Site Specific Information: Rooms M083E, L131, L137, L324	Project Detail: Type 2 (intermediate/Moderate Risk) Ceiling Space Investigation for Presence of Plaster	
	Client: uOttawa	Contractor: Elite Environmental Group Inc.

INTRODUCTION AND BACKGROUND

Buller Crichton Environmental Inc. (BCE) was retained by uOttawa (Client) to complete inspections and air monitoring during the Type 2 (Intermediate/Moderate Risk) work procedures occurring within Tabaret Hall located at 550 Rue Cumberland Street, Ottawa, Ontario (Site).

Four (4) Type 2 (Intermediate/Moderate Risk) containments were constructed by Elite Environmental Group Inc. personnel to allow for the inspection of the ceiling space for asbestos-containing plaster.

SCOPE OF WORK

BCE's scope of work was limited to the following:

1. Complete PCM air sampling as outlined in Ontario Regulation 278/05.

This report will address item #1.

STANDARDS, GUIDELINES AND REGULATIONS

- Ontario Regulation 278/05 made under the Occupational Health and Safety Act (O. Reg. 278/05):
 - O. Reg. 278/05 applies to every building in which asbestos is present and to the owner of the building.
 - O. Reg. 278/05 also applies to every project and its owner when the owner or his agent hires a contractor or subcontractor to perform work or supply services.
 - The Regulation requires that all work that may expose a worker to asbestos be classified as a Type 1, Type 2, or Type 3 operation. The procedures for carrying out Type 1, Type 2, and Type 3 operations are outlined in sections 14, 15, 16, 17, and 18 of the Regulation.

AIR SAMPLING METHODOLOGY

Air samples were collected using 25-mm three-piece filter cassettes containing a 0.8µm cellulose ester membrane filter and equipped with a 50-mm electrically conductive extension cowl. The filter cassettes were attached to a high-volume air sampling pump calibrated with a primary calibration device and filter cassette in line to a known flow rate. At the completion of air testing the samples were analyzed in accordance with U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, Issue 3: Asbestos and other Fibres by PCM (June 14, 2019), using the asbestos fibre counting rules. As required by NIOSH Method 7400, field blanks were also analyzed to ensure that no contamination of the filters occurred during sampling or analytical procedures.

The Limit of Detection (LOD) depends on sample volume and quantity of interfering dust. Fibres less than approximately 0.25 µm in diameter will not be detected by this method. This analytical method gives an index of airborne fibres as it cannot differentiate between asbestos and other fibres. Only fibres with a length greater than 5 µm and a length to width ratio equal or greater than 3:1 were counted. Fibres with a diameter of 0.25 µm or smaller cannot be detected using this method. Other airborne particles that fall within the counting range criteria will act as positive interferences. Result of analysis has been field blank corrected and is reported as the concentration of fibres per cubic centimeter of air (f/cc).

AIR SAMPLING RESULTS

Table 1 provides a summary of PCM air sampling findings.

Table 1 – PCM Air Sampling

PCM Air Sampling Results – October 20 th , 2022								
Sample ID	Sample Type	Location/Description	Flow Rate (L/min)	Air Volume (L)	Fibres	Fields	Fibres/mm ²	Result (fibre/cc)
AS-824-10	Clearance	Mo83E FAC #1	15.99	2,478.5	<5.5	100	<7	<0.01
AS-824-11	Clearance	Mo83E FAC #2	15.92	2,467.6	<5.5	100	<7	<0.01
AS-824-12	Clearance	L131 FAC #1	15.95	2,871.0	<5.5	100	<7	<0.01
AS-824-13	Clearance	L131 FAC #2	15.91	2,863.8	<5.5	100	<7	<0.01
AS-824-14	Clearance	L137 FAC #1	15.92	2,865.6	<5.5	100	<7	<0.01
AS-824-15	Clearance	L137 FAC #2	15.95	2,871.0	<5.5	100	<7	<0.01
AS-824-16	Clearance	L324 FAC #1	15.93	2,708.1	<5.5	100	<7	<0.01
AS-824-17	Clearance	L324 FAC #2	15.98	2,716.6	<5.5	100	<7	<0.01
AS-824-18	Quality Control	Field Blank*	NA	NA	0	100	<7	NA
AS-824-19	Quality Control	Field Blank*	NA	NA	0	100	<7	NA
Analyst Counter ID: Jessica Joubarne 14 NIOSH 7400, BCE 2021 Analyzed on: October 20 th , 2022 Samples were analyzed at the BCE Laboratory, located at 102-1 Raymond Street, Ottawa, ON K1R 1A2 BCE is in good standing with the EMSL Interlaboratory PCM Round Robin program.								

1. Calibration of air sampling equipment checked against a primary standard.
2. *Field blanks per NIOSH requirement
3. Sample media to be discarded in 30 days unless otherwise requested by the client.
4. Results only relate to the samples tested.

PCM air clearance results indicate that fibre concentrations were below the Ontario Regulation 278/05 clearance criteria of 0.01 fibres per cubic centimetre (f/cc).

Based on the analytical results obtained, no concerns were identified with respect to airborne fibre concentrations.

REPORT LIMITATIONS

In performing the assessment, BCE has relied in good faith on information provided by other individuals noted in this report.

Interpretation of the sample results are based on current industry standards. This includes sample comparison against applicable guidelines and threshold values as well as comparison against standard samples.

Work performed by BCE was conducted in accordance with generally accepted scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied, or intended by the agreement executed with the Client, or by furnishing oral or written reports or findings. The Client acknowledges that subsurface/concealed conditions may vary from those encountered inspected. BCE could only comment on the conditions observed on the dates and times the assessment was performed. The work was limited to those areas of concern identified by the Client. Other areas of concern may exist but were not investigated within the scope of this assignment.

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CLOSURE

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Best Regards,

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