

HAZARDOUS MATERIALS SURVEY AND 2023 REASSESSMENT HAGEN HALL, 115 SERAPHIN-MARION PRIVATE, OTTAWA, ON



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Prepared for:

University of Ottawa

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McINTOSH PERRY

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REASSESSMENT SURVEY 2023

McIntosh Perry Limited (**MPL**) was retained by the University of Ottawa, to complete to a hazardous materials survey of Marchand Residence located at 115 Séraphin-Marion Private. The survey was conducted between August 7th & 8th, 2019. **The reassessment was completed on January 25th, 2024.**

The purpose of the reassessment was to evaluate the condition and quantity of previously reported asbestos-containing materials (ACM) and develop corrective action plans as required for the purposes of long-term management.

The assessment and reassessment determined the following findings and recommendations.

Summary of the Reassessment Findings:

- ACM Vinyl Floor Tiles was observed to be in Poor Condition in Rooms 305
- ACM Drywall Joint Compound (DJC) was observed to be in Good condition except for basement stairwell, rooms 100, 106, 200, and 206 which was found to be in Poor condition within the subject building
- ACM HVAC Duct Insulation was observed to be in Good Condition in the Basement.
- Mould and water damaged materials were observed in room 106, 106A, 106C, and 305 during the site survey.

Summary of Recommendations:

- Perform a reassessment of asbestos materials on an annual basis.
- Perform a pre-construction assessment and remove all asbestos-containing materials (ACM) prior to alterations or maintenance work if ACM may be disturbed by the work.
- Follow appropriate safe work procedures when handling or disturbing asbestos.

Sample any presumed ACM prior to alteration or maintained work if presumed ACM may be disturbed by the work.

EXECUTIVE SUMMARY

McIntosh Perry Limited (**MPL**) was retained by the University of Ottawa, to complete a hazardous materials survey for Hagen Hall located at 115 Séraphin-Marion Private in Ottawa, ON. The survey was conducted between August 7th & 8th, 2019. **The reassessment was completed on January 25th, 2024.**

The purpose of the survey was to determine the presence of building materials containing Designated Substances and other hazardous materials, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09. In addition, a visual assessment was conducted for the presence of polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons and mould.

Based on the assessment conducted by MPL, the following ACMs were identified or suspected to be present in the building:

Table A: Summary of Asbestos-Containing Materials Identified

Material Description	Friable?	Location	Type of Asbestos
Drywall Joint Compound	-	Throughout Building	Chrysotile
Vinyl Floor Tiles	No	Specific Areas Only	Chrysotile
Ceiling Tiles	No	Specific Areas Only	Amosite
Roofing Materials	-	Roof	Suspected
Fire doors	-	Throughout Building	Suspected

Note: Please refer to the complete report for specific details and recommendations.

All repairs or removal of asbestos-containing materials must be conducted according to Ontario Regulation 278/05, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act. Asbestos-containing waste must also be handled and disposed of according to Ontario Regulation 347/90 as amended – made under the Environmental Protection Act. Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain asbestos until proven otherwise by analytical testing;

Sub-trades working with or in close proximity to asbestos-containing material should be informed of its presence;

Given that asbestos containing materials (ACMs) have been identified and will likely remain in place, an Asbestos Management Plan (AMP) is therefore required and an inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities.

Based on the assessment conducted by MPL, the following Designated Substances and Hazardous Materials were identified or suspected to be present in the building:

Table B: Summary of Designated Substances & Hazardous Materials Identified

Material Description	Location
Lead Paint	Throughout Building
Lead Acid Batteries	Specific Areas Only
Mercury Liquid	Specific Areas Only
Ozone Depleted Substances	Specific Areas Only
Silica	Throughout Building
Mercury Vapour	Throughout Building
Mould/ Water Damage	Specific Areas Only

Note: Please refer to the complete report for specific details and recommendations.

Designated Substances area regulated under Ontario Regulation 490/09 — Designated Substances, made under the Ontario Health and Safety Act, which applies to controlling designated substances in the workplace.

In addition to Ontario Regulation 490/09, the following guidelines must also be adhered to when conducting work activities that that involve disturbance of the above-mentioned materials:

- Guideline: Lead on Construction Projects, issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour
- Guideline: Silica on Construction Projects issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour.
- Environmental Abatement Council of Canada (EACC) Mould Abatement Guidelines.

Prior to any renovations or demolition activities within building, designated substances and hazardous materials must be decommissioned by a licensed contractor such that they are contained and not released to the environment during decommissioning as per O. Reg. 347/09- made under the Environmental Protection Act.

Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain designated substances or hazardous materials until proven otherwise by analytical testing.

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

This executive summary is not to be used alone. This report should be reviewed in its entirety.

McINTOSH PERRY

February 20, 2024

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Attention: Martine Bergeron, Senior Specialist, Occupational Health and Safety

Re: Hagen Hall, University of Ottawa - 115 Séraphin-Marion Private
Hazardous Materials Survey and 2023 Reassessment
McIntosh Perry Limited Reference No. Z1920014HZ / CCC-230252-00

1.0 INTRODUCTION

In accordance with your instructions, McIntosh Perry Limited (**MPL**) carried out a Hazardous Materials Survey at Hagen Hall, the institutional building located at 115 Séraphin-Marion Private in Ottawa, ON. The site is situated on the northwest corner of the intersection of Séraphin-Marion Private and Cumberland Street. The survey of the building was conducted on August 7th and 8th, 2019. **The reassessment was completed on January 25th, 2023.**

The purpose of the survey was to determine the presence of building materials containing Designated Substances and other hazardous materials, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09. In addition, a visual assessment was conducted for the presence of polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons and mould.

MPL completed the following,

- Visual review of the building to identify materials which could contain Designated Substances and hazardous materials;
- Review of previously completed Hazardous Materials Survey(s) and historical building record(s); and,
- Recommendations for appropriate action where required.

2.0 PROPERTY DESCRIPTION

The subject building is a three-storey institutional building, covering approximately 17, 200 square feet and constructed circa 1931. The subject building was observed to be constructed with a concrete slab floor, exterior walls, and roof deck. The interior walls were gypsum wallboard and concrete block with plaster. Ceilings were observed to be either suspended ceiling tiles or plaster. The floors generally consisted of terrazzo, vinyl floor tiles, ceramic tiles, vinyl sheet flooring, laminate wood, and carpet.

3.0 FINDINGS & RECOMMENDATIONS

Designated Substances

3.1 Asbestos

Findings

A total of fifty-nine (59) bulk samples were previously collected during the survey and sent to an independent accredited laboratory for analysis. A summary of potential asbestos-containing samples previously collected along with the sample location, type and friability are presented in Table 1.

Laboratory certificates of analysis for asbestos are included in Appendix C.

Table 1:
Asbestos Laboratory Results

Sample ID	Location	Material	Type and Content	Friability
BS 1.1	Room 100	Wall Plaster (Grey)	None Detected	N/A
BS 1.2	Room 104D	Wall Plaster (Grey)	None Detected	N/A
BS 1.3	Room 105	Wall Plaster (Grey)	None Detected	N/A
BS 1.4	Room 106	Wall Plaster (Grey)	None Detected	N/A
BS 1.5	Room 207A	Wall Plaster (Grey)	None Detected	N/A
BS 1.6	Room 305	Wall Plaster (Grey)	None Detected	N/A
BS 1.7	Room 307	Wall Plaster (Grey)	None Detected	N/A
BS 2.1	Room 200	Ceiling Plaster (Grey)	None Detected	N/A
BS 2.2	Room 200	Ceiling Plaster (Grey)	None Detected	N/A
BS 2.3	Room 200	Ceiling Plaster (Grey)	None Detected	N/A
BS 2.4	Room 207	Ceiling Plaster (White)	None Detected	N/A
		Ceiling Plaster (Grey)	None Detected	N/A
BS 2.5	Room 207	Ceiling Plaster (White)	None Detected	N/A
		Ceiling Plaster (Grey)	None Detected	N/A
BS 2.6	Room 305	Ceiling Plaster (White)	None Detected	N/A
		Ceiling Plaster (Grey)	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
BS 2.7	Room 305	Ceiling Plaster (Grey)	None Detected	N/A
BS 3.1	Room 201C	VFT (12"x12"-Cream w/ Dark Streaks)	None Detected	N/A
BS 3.2	Room 201C	VFT (12"x12"-Cream w/ Dark Streaks)	None Detected	N/A
		Levelling Compound (Grey)	None Detected	N/A
BS 3.3	Room 201C	VFT (12"x12"-Cream w/ Dark Streaks)	None Detected	N/A
		Levelling Compound (Grey)	None Detected	N/A
BS 4.1	Room 208	VSF (Beige)	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 4.2	Room 208	VSF (Beige)	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 4.3	Room 208	VSF (Beige)	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 5.1	Room 210	VSF (Dark Brown w/ Light & Dark Streaks)	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
Bs 5.2	Room 210	VSF (Dark Brown w/ Light & Dark Streaks)	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 5.3	Room 210	VSF (Dark Brown w/ Light & Dark Streaks)	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A

N/A – Not Applicable

VFT – Vinyl Floor Tiles VSF – Vinyl Sheet Flooring

Stop Positive – Material considered being asbestos-containing as per O. Reg. 278/05.

Please refer to Appendix E – Asbestos-Containing Materials Checklist for material conditions, approximate quantities (where applicable), and recommended actions.

The following building materials (if present) were investigated for asbestos content,

3.1.1 Fireproofing

No fireproofing was observed in the subject building.

3.1.2 Mechanical Pipe Insulation

3.1.2.1 Mechanical Pipe Straight Insulation

Mechanical pipe straight insulation was observed in Room 107F and 207. MPL made several incisions throughout to investigate its composition, and it was visually identified as fiberglass, and therefore not suspected of containing asbestos.

3.1.2.2 Mechanical Piping Elbows/Fittings Insulation

Mechanical pipe elbow/fitting insulation was observed in Room 107F and 207. MPL made several incisions throughout to investigate its composition, and it was visually identified as fiberglass, and therefore not suspected of containing asbestos.

3.1.2.3 Mechanical Piping Hangers Insulation

No mechanical pipe hanger insulation was observed in the subject building.

3.1.2.4 HVAC Duct Insulation

HVAC duct insulation was observed in Room 107 and 207. MPL made several incisions throughout to investigate its composition, and it was visually identified as fiberglass, and therefore not suspected of containing asbestos.

3.1.2.5 Other Mechanical Insulation

No other mechanical insulation was observed in the subject building.

3.1.3 Flexible Duct Connector

No flexible duct connectors were observed in the subject building.

3.1.4 Heat Shield or Heat Shield Insulation

No potential asbestos-containing heat shield insulation was observed in the subject building.

3.1.5 Plaster

Wall plaster was observed and previously sampled from Rooms 100, 104D, 105, 106, 2017A, 305, and 307. The laboratory analytical results of the wall plaster samples collected indicated that this material does not contain asbestos.

Ceiling plaster was observed and previously sampled from Rooms 200, 207, and 305. The laboratory analytical results of the ceiling plaster samples collected indicated that this material does not contain asbestos.

3.1.6 Drywall Joint Compound

Previously identified asbestos-containing drywall joint compound was observed throughout the subject building. The laboratory analytical results of drywall joint compound samples previously collected throughout the 1st and 2nd level indicated that this material **contains 2% Chrysotile asbestos**. Since drywall joint compound

is a homogeneous material, all areas must be treated as asbestos-containing unless additional bulk sampling and analysis proves otherwise. This material was observed to be in good condition with the exception of select areas that were observed in **poor condition during the 2023 Reassessment Survey**.

3.1.7 Ceiling Tiles

Suspended ceiling tiles were observed in various locations throughout the subject building.

- Suspended ceiling tiles (2'x4' Pinholes & Small Fissures) were observed throughout the 1st Level. The date stamp on the back of these ceiling tiles indicated that they were manufactured in 2006 and therefore, this material is not considered to contain asbestos.
- Previously identified suspended ceiling tiles (2'x4' – White w/ Small Pinholes) were observed in Room 104D, 200A, 200D, 302, 304, 306, and 307. This material **contains 2% Amosite asbestos**. This material was observed in good condition, with select areas observed to be in fair condition. **This material was not observed in Rooms 100 and 106 during the 2023 Reassessment Survey**.

3.1.8 Vinyl Floor Tiles

Several different types of vinyl floor tiles were observed and sampled within the building as follows:

- Previously identified asbestos-containing vinyl floor tiles (12"x12" – Gold w/ White Streaking) were observed in Room 305. This material **contains 9.8% Chrysotile asbestos** and is considered to be non-friable. This material was observed to be in good condition with the exception of select areas that were observed in poor condition.
- Previously identified asbestos-containing vinyl floor tiles (12"x12" – Grey w/ Streaks) were observed in Room 107J. This material **contains 2% Chrysotile asbestos** and is considered to be non-friable.
- Previously identified asbestos-containing vinyl floor tiles (12"x12" – Beige w/ Streaks) were observed in Room 107J. This material **contains 1% Chrysotile asbestos** and is considered to be non-friable.
- Vinyl floor tiles (12"x12"-Cream with Dark Streaks) were observed and sampled in Room 201C. The laboratory analytical results of the vinyl floor tile samples collected indicate that this material does not contain asbestos. The associated levelling compound (Grey) was also found not to contain asbestos.
- Vinyl floor tiles (12"x12"- Grey and Brown) were previously sampled in Room 107G and 107J. The laboratory analytical results of the vinyl floor tile samples collected indicated that this material does not contain asbestos.

- Vinyl floor tiles (12"x12"- Beige w/ Black Specks) were previously sampled in Room 107K. The laboratory analytical results of the vinyl floor tile samples collected indicated that this material does not contain asbestos.

3.1.9 Vinyl Sheet Floor

Several different types of vinyl sheet flooring were observed and previously sampled within the subject building as follows:

- Vinyl sheet flooring (Beige) was observed and previously sampled in Room 208. The laboratory analytical results of the vinyl sheet flooring samples collected indicate that this material does not contain asbestos. The associated mastic/backing material (Yellow) was also found not to contain asbestos.
- Vinyl sheet flooring (Dark Brown w/ Light & Dark Streaks) was observed and previously sampled in Room 210. The laboratory analytical results of the vinyl sheet flooring samples collected indicate that this material does not contain asbestos. The associated mastic/backing material (Yellow) was also found not to contain asbestos.

3.1.10 Vinyl Base Board

Vinyl base boards (Black) were previously sampled in Room 107K. The laboratory analytical results of the vinyl base board samples collected indicated that this material does not contain asbestos.

Vinyl base boards (Beige) were previously sampled in Room 107. The laboratory analytical results of the vinyl base board samples collected indicated that this material does not contain asbestos.

3.1.11 Caulking

Window caulking (Black) was previously sampled in Room 107B. The laboratory analytical results of the window caulking samples collected indicated that this material does not contain asbestos.

3.1.12 Transite (Asbestos Cement)

No transite materials were observed in the subject building.

3.1.13 Cementitious Coating

No cementitious coating finishes were observed in the subject building.

3.1.14 Fire Doors

Fire doors were observed at various locations throughout the subject building. To avoid possible damage, no bulk samples of the internal door insulation materials were collected. Prior to removal and/or replacement, fire doors should be examined and tested for asbestos content. Fire doors should be considered to contain asbestos until bulk samples and analysis proves otherwise. All fire doors were observed to be in good condition.

3.1.15 Roofing Material

To avoid damage and compromising the integrity of roofing material, no bulk samples of the roofing materials were collected. Prior to removal and/or replacement, roofing materials should be examined and tested for asbestos content. Roofing materials should be considered to contain asbestos until bulk samples and analysis proves otherwise.

Recommendations

- Asbestos-containing materials identified to be in poor condition must be repaired/removed immediately, following Type 1/2/3 asbestos abatement work procedures as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;
- Asbestos-containing materials that have been identified to be in fair condition should be either repaired (where possible) and/or closely monitored for signs of further deterioration. Depending on type of material and location, these materials should be scheduled for removal if there is potential risk of exposure to worker and/or occupants;
- Materials identified to contain asbestos that are in good condition and do not pose a risk to workers or occupants can be managed in place. Prior to renovation/demolition activities that may disturb the ACMs, these materials must be removed following appropriate Type 1/2/3 asbestos abatement work procedures as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;
- Please refer to Appendix E – Asbestos-Containing Materials Checklist for material conditions, approximate quantities (where applicable), and recommended actions;
- Entry into ceiling spaces where asbestos-containing ceiling tiles are present will require Type 1/2 asbestos abatement procedures.
- Prior to renovation/demolition of materials which are assumed to be asbestos-containing (suspect materials which were not sampled, i.e., roofing materials and fire doors), these materials must either be tested for asbestos content or removed following appropriate asbestos abatement work procedures (Type 1/2/3) as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;
- All repairs or removal of asbestos-containing materials must be conducted according to Ontario Regulation 278/05, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act. Asbestos containing waste must also be handled and disposed of according to Ontario Regulation 347/90 as amended – made under the Environmental Protection Act. Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain asbestos until proven otherwise by analytical testing;

- Sub-trades working with or in close proximity to asbestos-containing material should be informed of its presence; and
- Given that asbestos containing materials (ACMs) have been identified and will likely remain in place, an Asbestos Management Plan (AMP) is therefore required and an inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities

3.2 Lead

Findings

3.2.1 Paint Finishes

Various paint finishes previously identified to contain lead were observed throughout the subject building as follows,

Table 2:
Previously Identified Lead Paint Finishes

Sample I.D.	Location	Material	Colour	Lead Concentration Weight by Conc. (%)
HGN-2-LBP-111706-01	Room 200	Ceiling Paint	White	0.09
HGN-2-LBP-111706-04	Room 200	Column Paint	Light Purple	0.03
HGN-2-LBP-111706-05	Room 305	Window Frame Paint	White	2.70
HGN-2-LBP-111706-06	Room 305	Door Paint	Brown/ Green	0.05
HGN-2-LBP-111706-07	Room 310	Railing Paint	Black	0.40
HGN-2-LBP-111706-08	Room 100	Wall Paint	Beige	0.01
HGN-2-LBP-111706-09	Room 100	Door Paint	Blue	0.04
HGN-2-LBP-111706-010	Room 106A	Stalls & Countertop Paint	Yellow	7.20

The paint finishes highlighted in blue in the above table were determined to contain low concentrations of lead which are less than or equal to 0.1%. The paint finishes highlighted in pink in the above table are considered lead-containing paints or surface coatings with concentrations greater than 0.1% lead by weight. However, all

other paints throughout the subject building that are not mentioned in this report must be considered to be lead-containing unless sampling and analysis proves otherwise.

These paint finishes were observed to be in good condition with the exception of select areas that were observed in poor condition.

3.2.2 Battery Packs

MPL identified lead-containing acid battery packs throughout the subject building. These battery packs were observed on walls and above exits throughout the surveyed building.

Lead may also be present in the following materials in the building:

- Solder used on copper domestic water lines;
- Solder used in bell fittings for cast iron pipes;
- Solder used in electrical equipment;
- Ceramic tile glaze; and
- Concrete and mortar products, etc.

Recommendations

Paints identified to contain lead that are in poor condition must be immediately repaired and/or stabilized following a minimum Type 1/2 lead abatement procedures as per “Lead on Construction Project” dated April 2011.

Paints identified to contain lead that are in fair condition should be either repaired (where possible) and/or closely monitored for signs of further deterioration.

Paints identified to contain lead that are in good condition and do not pose a risk to workers or occupants can be managed in place.

Detailed worker protection protocols are outlined in the OMOL Guideline “Lead on Construction Projects” dated April 2011. Generally, the removal of the lead-based paint with the use of a chemical gel or paste, or a power tool equipped with a HEPA filter is considered a Type 1 operation. The removal of lead-based paint by scraping or sanding using non-powered hand tools is considered a Type 2 operation. The removal of lead-based paint using abrasive blasting, or power tools without a HEPA filter, is considered a Type 3 operation, and requires the most stringent worker protection protocols (similar to asbestos); Furthermore, high temperature cutting or welding would also require Type 3 Operations under the Guideline for Lead on Construction Projects. If this type of work is required, it may be prudent to chemically remove the lead paint in selected locations prior to performing any high temperature cutting or welding.

All lead materials that are removed must follow the Ministry of Labour and Environmental Abatement Council of Ontario Lead Guidelines.

Please refer to Appendix F – Hazardous Materials Checklist for material conditions, approximate quantities (where applicable), and recommended actions.

Precautions should be taken as required during major renovations and demolition projects to ensure that workers' exposure levels to airborne lead does not exceed 0.05 mg/m³. This can be achieved by:

- providing workers with proper training;
- providing the workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions; and,
- providing workers with hygiene facilities to properly wash prior to exiting the work area.

Sub-trades working with or in close proximity to lead based paint should be informed of its presence.

All waste material must be handled and disposed of according to the Revised Regulation of Ontario 347/90 as amended – made under the Environmental Protection Act. Lead waste generated may also be subject to Leachate Criteria (Schedule 4) of this regulation.

3.3 Mercury

Findings

3.3.1 Thermostat Switches

MPL observed thermostat switches suspected of containing liquid mercury throughout the subject building.

3.3.2 Fluorescent Light Tubes

MPL identified fluorescent light fixtures throughout the surveyed area containing 2 to 4 fluorescent light tubes per fixture. Mercury is likely to be present in vapor form in the fluorescent light tubes. The fluorescent lights were observed to be manufactured by Alto.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, approximate quantities (where applicable), and recommended actions.

Precautions must be taken to prevent mercury liquid/vapours from becoming airborne during building demolition. Exposure to mercury is regulated under Ontario Regulation 490/09, Designated Substances - made under the Occupational Health and Safety Act." Prior to renovations to the building, all mercury containing fluorescent light tubes, thermostats, and equipment must be removed and stored in a safe, secure location and/or properly disposed of in accordance with R.R.O. 1990, Regulation 347 General – Waste Management, made under the Environmental Protection Act.

3.4 Silica

Findings

Silica is expected to be present in building materials such as concrete, brick, mortar and ceramic tiles located throughout the structures. Free crystalline silica (α -Quartz) may be a component in ceiling tiles and gypsum board. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, approximate quantities (where applicable), and recommended actions.

Precautions should be taken as required during major renovations and demolition projects on concrete (i.e. coring through concrete slabs, demolition of masonry, etc.) to ensure that workers' exposure levels to airborne silica does not exceed 0.05 mg/m³.

This can be achieved by:

- providing workers with proper training;
- providing the workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions; and,
- providing workers with facilities to properly wash prior to exiting the work area.

Demolition work that is likely to impact silica-containing materials should be carried out in accordance with the requirement detailed in the Ontario Ministry of Labour document entitled "Guideline: Silica on Construction Projects", dated April 2011.

Other Hazardous Materials

3.5 Polychlorinated Biphenyls (PCBs)

Findings

3.5.1 Light Ballasts

The subject building is illuminated by LED and fluorescent lights. MPL assessed representative ballasts in the building, and these ballasts were identified as non-PCBs content.

3.5.2 Transformers

MPL did not observe any PCBs containing electrical transformers within the subject building. Transformers that could be assessed were observed to be dry-type and manufactured by Hammond Manufacturing.

Recommendations

Since no PCB-containing equipment was observed or suspected to be present during the site survey, no further action is required.

3.6 Ozone Depleting Substances (ODSs) and Other Halocarbon

Findings

A visual assessment for equipment potentially containing ODSs and other halocarbons was conducted. Equipment containing ODSs or other halocarbons was observed in the subject building.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, approximate quantities (where applicable), and recommended actions.

Under the management of a licensed contractor, equipment containing R-134a does not represent a significant threat to human health or the environment however, a licensed contractor must decommission equipment such that CFCs are contained and not released to the environment during servicing or operation.

3.7 Radioactive Materials

Findings

MPL did not observe any electrical components containing radioactive materials.

Recommendations

Since no radioactive materials were observed or suspected to be present during the site survey, no further action is required.

3.8 Underground and Above Ground Storage Tanks (USTs and ASTs)

Findings

A visual survey of the subject building was conducted to determine if any USTs and ASTs were present. No USTs and ASTs were present within the surveyed area.

Recommendations

Since no underground and/or above ground storage tanks (USTs and ASTs) were observed or suspected to be present during the site survey, no further action is required.

3.9 Mould

Findings

3.9.1 Mould

A visual survey of the subject building was conducted to determine if any mould was present. MPL did not identify any areas with mould growth.

3.9.2 Water Damage

A visual survey of the subject building was conducted to determine if any water damaged was present. MPL identified select areas throughout the subject building, where materials were affected by water damage.

Recommendations

- Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, approximate quantities (where applicable), and recommended actions.
- Water stained/damaged ceiling tiles observed throughout the subject building should be replaced as part of regular maintenance and the underlying cause of the water leakage should be identified and repaired;
- Water stained/damaged ceiling tiles that are also determined to contain asbestos must be replaced following appropriate asbestos abatement procedures as outlined in O.Reg. 278/05.

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders from subcontractors shall furnish this report to subcontractors

4.0 GENERAL CONSIDERATIONS AND LIMITATIONS

The information presented in this report is based on information provided by others, direct visual observation made by personnel with **McIntosh Perry Limited (MPL)**, and the results of laboratory testing as identified herein.

It should be noted that there might be hazardous materials in locations not visible during our investigation. In the event such material is encountered during demolition operations in the building, this material should be tested and dealt with accordingly.

The findings detailed in this report are based upon the information available at the time of preparation of the report. No investigative method eliminates the possibility of obtaining imprecise or incomplete information. Professional judgement was exercised in gathering and analyzing the information obtained and in the formulation of our conclusions and recommendations.

MPL does not certify or warrant the environmental status of the property nor the building on the property.

Please note that the passage of time affects the information provided in the report. Environmental conditions of a site can change. Opinions relating to the site conditions are based upon information that existed at the time that the conclusions were formulated.

The client expressly agrees that it has entered into this agreement with MPL, both on its own behalf and as agent on behalf of its employees and principals.

The client expressly agrees that MPL's employees and principals shall have no personal liability to the client in respect of a claim, whether in contract, tort and/or any other cause of action in law. Accordingly, the client expressly agrees that it will bring no proceedings and take no action in any court of law against any of MPL's employees or principals in their personal capacity.

We trust that we have detailed our findings clearly and that we have satisfactorily addressed the scope of work you require at this time. In the event you wish us to review our findings with you, or require our services further in this regard, please do not hesitate to contact our office.

Yours truly,

MCINTOSH PERRY LIMITED



Pegah Parichehreh, M.Sc.
Project Technician
Hazardous Materials/ Environmental Health & Safety



John Tufts, B.Sc.
Project Manager
Hazardous Materials/ Environmental Health & Safety

APPENDIX A

Regulatory Requirements

REGULATORY REQUIREMENTS

In Ontario, there is a total of eleven Designated Substances. These substances have been regulated under Ontario Regulation 490/09 — *Designated Substances*, made under the Ontario Health and Safety Act, which applies to controlling designated substances in the workplace.

In addition to the Ontario Regulation 490/09 noted above, the following were observed for this survey:

Guideline: Lead on Construction Projects, issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour

Guideline: Silica on Construction Projects issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour.

The Occupational Health and Safety Act (OHSA), R.S.O. 1990, c.0.1, s.30 (1) specifies that: “Before beginning a project, the owner shall determine whether any Designated Substances are present at the project site and shall prepare a list of all Designated Substances that are present at the site.

Section 30 of The Act requires that the list of Designated Substances be provided to prospective contractors and subcontractors who may do work on a site and come into contact at the site with Designated Substances.

The Ministry of Labour has designated the following substances:

- Acrylonitrile
- Arsenic
- Asbestos
- Benzene
- Coke Oven Emissions
- Ethylene Oxide
- Isocyanates
- Lead
- Mercury
- Silica
- Vinyl Chloride

Ontario Regulation 278/05 (O. Reg. 278/05), the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act (OHSA), requires owners of a building to identify Asbestos-containing Materials (ACMs) prior to potential disturbance of the materials.

In addition, an owner of a building is required to have an Asbestos Management Plan (AMP) if ACMs (friable or non-friable) are present in the building and are to remain in place. An inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities. Removal of all asbestos-containing materials is required prior to building demolition.

In addition to the Designated Substances, the building was also surveyed for the presence of other hazardous materials such as polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons, and mould.

We understand that this survey has been conducted to comply with the regulatory requirements of Ontario Regulation 278/05.

APPENDIX B

Survey Methodology & Background Information

SURVEY METHODOLOGY

For the purpose of this survey, not all Designated Substances or suspect hazardous material were sampled. Selective sampling was carried out only for substances that were suspected to be present or those deemed to have a likely source of origin in the survey areas.

Materials that were homogeneous in nature and/or similar in appearance to other materials tested were considered to be of similar composition. The likelihood of ACMs being present in inaccessible areas such as above gypsum board ceilings or behind gypsum wallboards was determined by assessing the presence of asbestos-containing systems in adjacent areas. Equipment such as boilers, motors, blowers, electrical panels, fire doors etc., were not de-energized or disassembled to examine internal components or materials. These items should be considered to contain hazardous materials until proven otherwise.

During the survey, representative samples of suspect building materials were collected and sent to AIHA accredited independent laboratory for analysis. Laboratory Certificate of Analysis are attached in Appendix A.

Other potential hazardous materials were identified by visual observation and/or by reviewing Material Safety Data Sheets (MSDS) and/or safety labels where available.

Investigated Areas

The survey included all accessible areas and ceiling space within CAREG as required under our scope of work. No destructive investigations were performed as part of this survey. Photographs of the areas investigated can be found in Appendix D.

The assessment was directed on the interior structure and finishes of the building. It did not consider current or past owner or occupant articles within the building (i.e. contents, furniture, etc.) and does not report on possible contaminants in the soil under and surrounding the building, or contents of vessels, drums, etc. that may be concealed.

Sampling and Assessment Methodologies

Sampling was conducted as part of this assessment. Results for asbestos and lead samples can be found in the Findings & Recommendation Section 3.0.

A historical review of previous designated substance survey reports and abatement reports was examined as part of this survey. Due to concerns regarding certain historical analytical results, mainly in 2008 and prior years, confirmatory re-sampling was conducted for selected materials previously identified not to contain asbestos. However, building materials previously identified to be asbestos-containing were not re-sampled. The reports are listed as follows,

- Designated Substance Inventory, CAREG Building, Ottawa, Ontario, prepared by Conestoga-Rovers & Associates (dated August 2008, reference # 045870 (94)).

Asbestos

Background Information on Asbestos

Asbestos is a generic name that has been given to a group of naturally occurring fibrous minerals. In the past, asbestos was commonly used as a component in building materials such as insulation, fireproofing and acoustic or decorative panels. Although there are many types of asbestos, the three main forms of commercial importance in Ontario are chrysotile, amosite and crocidolite.

An Asbestos-Containing Material (ACM) is defined by O. Reg. 278/05 as a material that contains 0.5% or more asbestos by dry weight. ACMs are placed into two general classes, “friable” and “non-friable” ACMs. Friable ACMs are those materials that when dry can be crumbled, pulverized and reduced to powder by hand pressure. Typical friable ACMs include acoustical or decorative texture coats, fireproofing and thermal insulation. Non-friable ACMs are much more durable as they are held together by a binder such as cement, vinyl or asphalt. Typical non-friable ACMs include floor tiles, fire blankets, roofing materials and cementitious products such as wallboards, pipes or siding.

It has been recognized that hazardous situations may exist in buildings where asbestos-containing materials are found. This is especially true where asbestos fibres may become airborne as a result of material ageing, physical damage, and water damage or air movement.

In contrast, there is little reason for concern if the asbestos is in good condition, has not been damaged and is not in a location where it is likely to be disturbed.

Asbestos Survey Methodology

The asbestos survey included the identification of potential friable and non-friable asbestos-containing materials within the surveyed areas of the subject building.

The likelihood of ACMs being present in inaccessible areas such as above gypsum wallboard ceilings and walls was determined by assessing the presence of asbestos-containing materials in adjacent areas.

Fiberglass insulation was not submitted for analysis as it can be identified visually as non-asbestos material.

Building materials suspected of containing asbestos were identified and representative sampling and laboratory testing of these materials was conducted. The number of bulk material samples collected from a homogeneous area was in accordance with Table 1. O. Reg. 278/05 s. 3 (3) below. Building materials suspected of containing asbestos were collected using wetting techniques and hand sampling tools.

Table 1 - O. Reg. 278/05 s. 3(3): Minimum Asbestos Bulk Material Sample Requirements

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including without limitation, material that is applied to surfaces by spraying, by troweling or	Less than 90 square metres	3
		90 or more square metres, but less than 450 square metres	5

	otherwise, such as acoustical plaster on ceilings and fireproofing materials on structural members	450 or more square metres	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
4.	Other material	Any size	3

Preliminary identification of the samples was made using polarized light microscopy (PLM), with confirmation of presence and type of asbestos made by dispersion staining optical microscopy. This analytical procedure follows the U.S. Environmental Protection Agency Test Method EPA/600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials, June 1993.

All bulk samples were analysed for asbestos content by EMSL Canada Inc. (EMSL), an independent laboratory. EMSL is an independent laboratory accredited by National Institute of Standards and Technology/National Voluntary Laboratory Accreditation (NIST/NVLAP) (Lab Code #200877-0).

Vinyl floors tiles were analyzed using the phase light microscopy (PLM) method of analysis. However, given the composition of vinyl floor products, the PLM analysis method may be prone to yielding false negative analytical results. Therefore, prior to removal or replacement, vinyl floor products previously identified to be negative, should undergo additional analysis by Transmission Electron Microscopy (TEM) to confirm asbestos content, if any.

Materials identified to contain asbestos were assessed on the relative possibility of fibre release into the air due to a combination of their condition and accessibility.

Evaluation of ACMs Based on Condition

In evaluating an ACM's condition, the following criteria was applied:

- **Good** – Material shows no signs of damage and/or is encapsulated. Asbestos-containing material could remain in place until eventual building demolition or major renovation.
- **Fair** – Material shows signs of minor damage (<5% damage) or otherwise near the end of useful life. This includes minor shrinking, cracking, delamination and/ or other damage. Material should be monitored closely and scheduled to be repaired, encapsulated or removed.
- **Poor** – Damage is greater than 5% to any ACM material and is highly recommended to be removed, repaired or encapsulated.

Note: The above evaluation criteria was also applied to other hazardous materials where applicable. Please refer to the Asbestos and Hazardous Materials Checklist in Appendix E & F for further details.

Lead

Background Information on Lead

Lead was a common additive in exterior and hard-wearing paint applications. Lead was used to prolong shelf life of paint and to increase its flexibility and durability to wear and weather. Acute exposure to lead by inhalation or ingestion may cause headaches, fatigue, nausea, abdominal cramps and joint pain. Chronic

exposures can cause reduced haemoglobin production and reduced lifespan. It has also been known to impact the body's central and peripheral nervous systems and brain function and has been linked to learning disabilities in children.

Currently in Ontario, there is no regulatory limit that determines what concentration of lead constitutes a "lead containing material". On October 21, 2010, Health Canada, under the *Hazardous Products Act*, stated that the lead content in surface-coating materials, furniture, toys and other articles for children, should not exceed 90 mg/kg (0.009%, 90 ppm). However, this is intended for the importation or sale of products within Canada. Therefore, this is not to be misconstrued as a limit established to define a lead-containing material or a limit with respect to lead on construction projects.

The Environmental Abatement Council of Canada (EACC) has also developed the "*Lead Guideline for Construction, Renovation, Maintenance or Repair*" dated October 2014, which discusses the classification, handling, disturbance and removal of lead-containing materials. For the purpose of this guideline, paints or surface coatings containing less than or equal to 0.1% lead by weight (1000 mg/kg or 1000 ppm) are considered low-level lead paints or surface coatings. If these materials (and their respective surfaces) are disturbed in a non-aggressive manner and performed using adequate dust control procedures, then worker protection from the inhalation of lead is not required.

Furthermore, paints or surface coatings containing greater than 0.1% lead by weight are considered lead-containing paints or surface coatings. If these materials (and their respective surfaces) are disturbed, appropriate lead abatement procedures must always be followed.

Exposure to lead-containing materials is regulated under Ontario Regulation 490/09, *Designated Substances* - made under the Occupational Health and Safety Act. Care must be taken to prevent lead-containing particles from becoming airborne during the disturbance of lead-containing surfaces (i.e., during renovation or demolition projects). All lead abatement work must follow procedures outlined in the Guideline Lead on Construction Projects, issued in September 2004 (amended in April 2011) by the Occupational Health and Safety branch of the Ministry of Labour (Type 1-3). Similarly, the lead abatement work procedures outlined in the EACC Lead Guideline for Construction, Renovation, Maintenance or Repair (October 2014) may also be implemented (Class 1-3).

Lead is known to have been used in solder on copper plumbing fixtures, in lead conduit pipes, in lead-calcium battery plates, ammunition, and in nuclear and X-ray shielding devices. However, these materials were not sampled during this investigation, but were noted where applicable.

To verify lead content in paints, representative bulk samples of paint and finishes suspected of containing lead were collected. Bulk samples were scraped down to the building base structure, with all possible layer's present, placed in sealed plastic bags and labeled; and then submitted to an independent laboratory for analysis. Samples were treated with a dilute nitric acid sample digestion prior to filtration. Analysis utilized for lead detection in filtered samples was inductively coupled plasma optical emission spectrometry (ICP-OES).

Mercury

Background Information on Mercury

Mercury is known to cause poisoning in humans through the inhalation of vapours, ingestion of contaminated materials or skin absorption through direct contact with the liquid.

Precautions must be taken to prevent mercury vapours from becoming airborne during renovations or demolition of the building. Exposure to airborne mercury is regulated under the Revised O. Reg. 490/09 as amended – Regulation respecting Mercury – made under the Occupational Health and Safety Act; and under O. Reg. 558, which amended O. Reg. 347/90 (General - Waste Management), mercury is classified as a Schedule 2(b) Hazardous Waste Chemical. Its hazardous waste number is U151.

Mercury is found in products such as thermostats, temperature and pressure gauges, fluorescent lamps and batteries. Mercury in products can be released to the environment through breakage, or disposal at the end of a product's useful life. Improper disposal of these mercury products poses a health and environmental risk to everyone. In addition, the disposal of mercury-containing products can create wastes that are often classified as hazardous. Wastes that leach mercury in concentrations exceeding Ontario Regulation 347/90 (General - Waste Management) limits are also considered hazardous.

The mercury in thermostat switch contains approximately 3-4 grams of mercury in a glass ampoule, typically attached to a metal coil. Mercury-containing switches have been used in thermostats for over 40 years.

Mercury is an essential component in fluorescent lamps and HID lamps. The mercury is in a vapour form and in the phosphor coating on the lamp tube. Estimates of the mercury content contained in compact, 4 foot, and 8-foot lamps are 10 mg, 23 mg, and 46 mg respectively.

Most fluorescent lamps qualify as hazardous waste when removed from service and are therefore prohibited from disposal in the solid waste stream. Fluorescent lamps would be classified as 146T on your facility Generator Registration Report under O. Reg. 347/90 - General Waste Management, as amended by O. Reg. 558/00. Under this regulation, if the leachate results exceed 0.1 milligrams of mercury per litre for a given waste, then the facility must treat the waste as hazardous waste. Most fluorescent and HID lamps will exceed the leachate toxicity limit; therefore, these wastes must be registered and treated as hazardous waste or sent for recycling.

Silica

Background Information on Silica

Silica is expected to be present in building materials such as concrete, brick, mortar and ceramic tiles located throughout the structures. Free crystalline silica (α-Quartz) may be a component in ceiling tiles and gypsum board. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Exposure to airborne silica is regulated under Ontario Regulation 490/09, *Designated Substances* - made under the Occupational Health and Safety Act.

Other Designated Substances

Select Designated Substances (acrylonitrile, arsenic, coke oven emissions, ethylene oxide, isocyanates, benzene, or vinyl chloride) are not expected to be present in the building in matrix or sufficient quantities to cause an exceedance of Ministry of Labour exposure guidelines. As such, no sampling was conducted for these materials.

Vinyl Chloride

Vinyl chloride (monomer) is likely to be present in stable form within poly vinyl-chloride (PVC) piping and conduits and as a component of interior finishes. Such building materials are not considered to be hazardous in their current matrix/composition.

Acrylonitrile

Acrylonitrile or ACN (also known as vinyl cyanide) is an explosive, flammable liquid used in the manufacture of acrylic fibres, rubber-like materials and pesticide fumigants. Acrylonitrile was not noted and would not be expected to be present in the project specific area/surveyed area/subject building.

Arsenic

Arsenic is used in metallurgy for hardening copper, lead and alloys, in pigment production, in the manufacture of certain types of glass, in insecticides, fungicides and rodenticides, as a by-product in the smelting of copper ores, and as a dopant material in semiconductor manufacturing. Arsenic or arsenic compounds were not noted and are not expected to be present in the project specific area/surveyed area/subject building.

Benzene

Benzene or benzol is a colourless liquid. It is used as an intermediate in the production of styrene, phenol, cyclohexane, and other organic chemicals, and in the manufacture of detergents, pesticides, solvents, and paint removers. It is also found in gasoline. Benzene may be present in stable form in roofing materials, paints and adhesives located throughout the subject building. Such building materials are not considered to be hazardous in their current matrix/composition.

Coke Oven Emissions

Coke oven emission is benzene soluble fraction of total particulate matter of the substances emitted into the atmosphere from metallurgical coke ovens.

Ethylene Oxides

Ethylene oxide is a colourless gas liquefying below 12°C. It is used generally as a fumigant and sterilizing agent for medical equipment. It is used generally as a fumigant and sterilizing agent for medical equipment.

Isocyanates

Isocyanates compounds may be present in stable form in paint finishes, varnishes, and polyurethane plastics, synthetic rubbers, foams and adhesives. Such building materials are not considered to be hazardous in their current matrix/composition.

In order to reduce the potential for exposure to workers or occupants, any suspect hazardous building material(s) that are not detailed within this survey due to inaccessibility and/or are discovered during renovation/demolition activities, must be properly assessed and/or tested prior to their disturbance.

APPENDIX C

Laboratory Analytical Reports

Certificate of Analysis

McIntosh Perry Limited (Concord)

6240 Hwy 7, Suite 200
Woodbridge, ON L4H 0R2
Attn: Diana Banakh

Client PO:
Project: Z1920014HZ
Custody:

Report Date: 5-Sep-2019
Order Date: 30-Aug-2019

Order #: 1936165

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Parcel ID	Client ID
1936165-01	BS1.1 100 - Wall Plaster
1936165-02	BS1.2 104D - Wall Plaster
1936165-03	BS1.3 105 - Wall Plaster
1936165-04	BS1.4 106 - Wall Plaster
1936165-05	BS1.5 207A - Wall Plaster
1936165-06	BS1.6 305 - Wall Plaster
1936165-07	BS1.7 307 - Wall Plaster
1936165-08	BS2.1 200 - Ceiling Plaster
1936165-09	BS2.2 200 - Ceiling Plaster
1936165-10	BS2.3 200 - Ceiling Plaster
1936165-11.1	BS2.4 207 - Ceiling Plaster
1936165-11.2	BS2.4 207 - Ceiling Plaster
1936165-12.1	BS2.5 207 - Ceiling Plaster
1936165-12.2	BS2.5 207 - Ceiling Plaster
1936165-13.1	BS2.6 305 - Ceiling Plaster
1936165-13.2	BS2.6 305 - Ceiling Plaster
1936165-14	BS2.7 305 - Ceiling Plaster
1936165-15	BS3.1 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-16.1	BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-16.2	BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-17.1	BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-17.2	BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-18.1	BS4.1 208 - VSF - Beige
1936165-18.2	BS4.1 208 - VSF - Beige
1936165-19.1	BS4.2 208 - VSF - Beige
1936165-19.2	BS4.2 208 - VSF - Beige

Approved By:



Emma Diaz
Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Client: **McIntosh Perry Limited (Concord)**

Client PO:

Report Date: 05-Sep-2019

Order Date: 30-Aug-2019

Project Description: **Z1920014HZ**

1936165-20.1	BS4.3 208 - VSF - Beige
1936165-20.2	BS4.3 208 - VSF - Beige
1936165-21.1	BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-21.2	BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-22.1	BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-22.2	BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-23.1	BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-23.2	BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks

Certificate of Analysis
 Client: McIntosh Perry Limited (Concord)
 Client PO:

Report Date: 05-Sep-2019
 Order Date: 30-Aug-2019
 Project Description: Z1920014HZ

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1936165-01	07-Aug-19	Beige	Plaster	No	Client ID: BS1.1 100 - Wall Plaster Non-Fibers	100
1936165-02	07-Aug-19	Beige	Plaster	No	Client ID: BS1.2 104D - Wall Plaster Non-Fibers	100
1936165-03	07-Aug-19	Beige	Plaster	No	Client ID: BS1.3 105 - Wall Plaster Non-Fibers	100
1936165-04	07-Aug-19	Beige	Plaster	No	Client ID: BS1.4 106 - Wall Plaster Non-Fibers	100
1936165-05	07-Aug-19	Beige	Plaster	No	Client ID: BS1.5 207A - Wall Plaster Non-Fibers	100
1936165-06	07-Aug-19	Beige	Plaster	No	Client ID: BS1.6 305 - Wall Plaster Non-Fibers	100
1936165-07	07-Aug-19	Beige	Plaster	No	Client ID: BS1.7 307 - Wall Plaster Non-Fibers	100
1936165-08	07-Aug-19	White	Plaster	No	Client ID: BS2.1 200 - Ceiling Plaster Non-Fibers	100
1936165-09	07-Aug-19	White	Plaster	No	Client ID: BS2.2 200 - Ceiling Plaster Non-Fibers	100
1936165-10	07-Aug-19	White	Plaster	No	Client ID: BS2.3 200 - Ceiling Plaster Non-Fibers	100
1936165-11.1	07-Aug-19	White	Plaster	No	Client ID: BS2.4 207 - Ceiling Plaster Non-Fibers	100
1936165-11.2	07-Aug-19	Grey	Plaster	No	Client ID: BS2.4 207 - Ceiling Plaster Non-Fibers	100

Certificate of Analysis
 Client: **McIntosh Perry Limited (Concord)**
 Client PO:

Report Date: 05-Sep-2019
 Order Date: 30-Aug-2019
 Project Description: **Z1920014HZ**

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1936165-12.1	07-Aug-19	White	Plaster	No	Client ID: BS2.5 207 - Ceiling Plaster	
					Non-Fibers	100
1936165-12.2	07-Aug-19	Grey	Plaster	No	Client ID: BS2.5 207 - Ceiling Plaster	
					Non-Fibers	100
1936165-13.1	07-Aug-19	White	Plaster	No	Client ID: BS2.6 305 - Ceiling Plaster	
					Non-Fibers	100
1936165-13.2	07-Aug-19	Grey	Plaster	No	Client ID: BS2.6 305 - Ceiling Plaster	
					Non-Fibers	100
1936165-14	07-Aug-19	White	Plaster	No	Client ID: BS2.7 305 - Ceiling Plaster	
					Non-Fibers	100
1936165-15	07-Aug-19	Cream	Vinyl Floor Tile	No	Client ID: BS3.1 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-16.1	07-Aug-19	Cream	Vinyl Floor Tile	No	Client ID: BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-16.2	07-Aug-19	Grey	Leveling Compound	No	Client ID: BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-17.1	07-Aug-19	Cream	Vinyl Floor Tile	No	Client ID: BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-17.2	07-Aug-19	Grey	Leveling Compound	No	Client ID: BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-18.1	07-Aug-19	Beige	Vinyl Sheet Flooring	No	Client ID: BS4.1 208 - VSF - Beige	
					Cellulose	10
					Non-Fibers	90
1936165-18.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS4.1 208 - VSF - Beige	
					Non-Fibers	100

Certificate of Analysis
 Client: McIntosh Perry Limited (Concord)
 Client PO:

Report Date: 05-Sep-2019
 Order Date: 30-Aug-2019
 Project Description: Z1920014HZ

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1936165-19.1	07-Aug-19	Beige	Vinyl Sheet Flooring	No	Client ID: BS4.2 208 - VSF - Beige	
					Cellulose	10
					Non-Fibers	90
1936165-19.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS4.2 208 - VSF - Beige	
					Non-Fibers	100
1936165-20.1	07-Aug-19	Beige	Vinyl Sheet Flooring	No	Client ID: BS4.3 208 - VSF - Beige	
					Cellulose	10
					Non-Fibers	90
1936165-20.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS4.3 208 - VSF - Beige	
					Non-Fibers	100
1936165-21.1	07-Aug-19	Brown	Vinyl Sheet Flooring	No	Client ID: BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Cellulose	10
					Non-Fibers	90
1936165-21.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Non-Fibers	100
1936165-22.1	07-Aug-19	Brown	Vinyl Sheet Flooring	No	Client ID: BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Cellulose	10
					Non-Fibers	90
1936165-22.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Non-Fibers	100
1936165-23.1	07-Aug-19	Brown	Vinyl Sheet Flooring	No	Client ID: BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Cellulose	10
					Non-Fibers	90
1936165-23.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Non-Fibers	100

Certificate of Analysis
Client: **McIntosh Perry Limited (Concord)**
Client PO:

Report Date: 05-Sep-2019
Order Date: 30-Aug-2019
Project Description: **Z1920014HZ**

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	1 - Mississauga	200863-0	4-Sep-19

* Reference to the NVLAP term does not permit the user of this report to claim product certification , approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Mississauga Lab: 15 - 6800 Kitimat Rd Mississauga, Ontario, L5N 5M1

Work Order Revisions | Comments

None



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1936165



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Chain of Custody
(Lab Use Only)

Page 1 of 2

Client Name: McIntosh Perry
Contact Name: Diana Banakh
Address: 6240 Highway 7, Suite 200, Concord, Ontario L4K 2A3
Telephone: 905-856-5200

Project Reference: 21920019000
Quote #: 19-651
PO #:
Email Address: d.banakh@mcintoshperry.com

Turnaround Time:
 Immediate 1 Day
 4 Hour 2 Day
 8 Hour Regular
Date Required:

ASBESTOS & MOLD ANALYSIS

Matrix: Air Bulk Tape Lift Swab Other **Regulatory Guideline:** ON QC AB SK Other:

Analyses: Microscopic Mold Culturable Mold Bacteria GRAM PCM Asbestos PLM Asbestos Chatfield Asbestos TEM Asbestos

Paracel Order Number: 1936165		Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk		Positive Stop?	
Sample ID					Identify Distinct Building Materials to Be Analyzed			
BS1.1	100 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	1
BS1.2	104D - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	2
BS1.3	105 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	3
BS1.4	106 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	4
BS1.5	207A - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	5
BS1.6	305 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	6
BS1.7	307 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	7
BS2.1	200 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	8
BS2.2	200 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	9
BS2.3	200 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	10
BS2.4	207 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	11
BS2.5	207 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	12
BS2.6	305 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	13
BS2.7	305 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	14
BS3.1	201C - VFT 12"x12" - Cream w/ Dark Streaks	Aug. 7, 2019	N/A	PLM			X	15
BS3.2	201C - VFT 12"x12" - Cream w/ Dark Streaks	Aug. 7, 2019	N/A	PLM			X	16
BS3.3	201C - VFT 12"x12" - Cream w/ Dark Streaks	Aug. 7, 2019	N/A	PLM			X	17
BS4.1	208 - VSF - Beige	Aug. 7, 2019	N/A	PLM			X	18
BS4.2	208 - VSF - Beige	Aug. 7, 2019	N/A	PLM			X	19
BS4.3	208 - VSF - Beige	Aug. 7, 2019	N/A	PLM			X	20
BS5.1	210 - VSF - Dark Brown w/ Light & Dark Streaks	Aug. 7, 2019	N/A	PLM			X	24
BS5.2	210 - VSF - Dark Brown w/ Light & Dark Streaks	Aug. 7, 2019	N/A	PLM			X	25
BS5.3	210 - VSF - Dark Brown w/ Light & Dark Streaks	Aug. 7, 2019	N/A	PLM			X	26

Certificate of Analysis

McIntosh Perry Limited (Concord)

6240 Hwy 7, Suite 200
Woodbridge, ON L4H 0R2
Attn: Diana Banakh

Client PO:
Project: Z1920014HZ
Custody:

Report Date: 5-Sep-2019
Order Date: 30-Aug-2019

Order #: 1936165

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Parcel ID	Client ID
1936165-01	BS1.1 100 - Wall Plaster
1936165-02	BS1.2 104D - Wall Plaster
1936165-03	BS1.3 105 - Wall Plaster
1936165-04	BS1.4 106 - Wall Plaster
1936165-05	BS1.5 207A - Wall Plaster
1936165-06	BS1.6 305 - Wall Plaster
1936165-07	BS1.7 307 - Wall Plaster
1936165-08	BS2.1 200 - Ceiling Plaster
1936165-09	BS2.2 200 - Ceiling Plaster
1936165-10	BS2.3 200 - Ceiling Plaster
1936165-11.1	BS2.4 207 - Ceiling Plaster
1936165-11.2	BS2.4 207 - Ceiling Plaster
1936165-12.1	BS2.5 207 - Ceiling Plaster
1936165-12.2	BS2.5 207 - Ceiling Plaster
1936165-13.1	BS2.6 305 - Ceiling Plaster
1936165-13.2	BS2.6 305 - Ceiling Plaster
1936165-14	BS2.7 305 - Ceiling Plaster
1936165-15	BS3.1 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-16.1	BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-16.2	BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-17.1	BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-17.2	BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks
1936165-18.1	BS4.1 208 - VSF - Beige
1936165-18.2	BS4.1 208 - VSF - Beige
1936165-19.1	BS4.2 208 - VSF - Beige
1936165-19.2	BS4.2 208 - VSF - Beige

Approved By:



Emma Diaz
Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Report Date: 05-Sep-2019

Client: **McIntosh Perry Limited (Concord)**

Order Date: 30-Aug-2019

Client PO:

Project Description: **Z1920014HZ**

1936165-20.1	BS4.3 208 - VSF - Beige
1936165-20.2	BS4.3 208 - VSF - Beige
1936165-21.1	BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-21.2	BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-22.1	BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-22.2	BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-23.1	BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks
1936165-23.2	BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks

Certificate of Analysis
 Client: McIntosh Perry Limited (Concord)
 Client PO:

Report Date: 05-Sep-2019
 Order Date: 30-Aug-2019
 Project Description: Z1920014HZ

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1936165-01	07-Aug-19	Beige	Plaster	No	Client ID: BS1.1 100 - Wall Plaster Non-Fibers	100
1936165-02	07-Aug-19	Beige	Plaster	No	Client ID: BS1.2 104D - Wall Plaster Non-Fibers	100
1936165-03	07-Aug-19	Beige	Plaster	No	Client ID: BS1.3 105 - Wall Plaster Non-Fibers	100
1936165-04	07-Aug-19	Beige	Plaster	No	Client ID: BS1.4 106 - Wall Plaster Non-Fibers	100
1936165-05	07-Aug-19	Beige	Plaster	No	Client ID: BS1.5 207A - Wall Plaster Non-Fibers	100
1936165-06	07-Aug-19	Beige	Plaster	No	Client ID: BS1.6 305 - Wall Plaster Non-Fibers	100
1936165-07	07-Aug-19	Beige	Plaster	No	Client ID: BS1.7 307 - Wall Plaster Non-Fibers	100
1936165-08	07-Aug-19	White	Plaster	No	Client ID: BS2.1 200 - Ceiling Plaster Non-Fibers	100
1936165-09	07-Aug-19	White	Plaster	No	Client ID: BS2.2 200 - Ceiling Plaster Non-Fibers	100
1936165-10	07-Aug-19	White	Plaster	No	Client ID: BS2.3 200 - Ceiling Plaster Non-Fibers	100
1936165-11.1	07-Aug-19	White	Plaster	No	Client ID: BS2.4 207 - Ceiling Plaster Non-Fibers	100
1936165-11.2	07-Aug-19	Grey	Plaster	No	Client ID: BS2.4 207 - Ceiling Plaster Non-Fibers	100

Certificate of Analysis
 Client: McIntosh Perry Limited (Concord)
 Client PO:

Report Date: 05-Sep-2019
 Order Date: 30-Aug-2019
 Project Description: Z1920014HZ

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1936165-12.1	07-Aug-19	White	Plaster	No	Client ID: BS2.5 207 - Ceiling Plaster	
					Non-Fibers	100
1936165-12.2	07-Aug-19	Grey	Plaster	No	Client ID: BS2.5 207 - Ceiling Plaster	
					Non-Fibers	100
1936165-13.1	07-Aug-19	White	Plaster	No	Client ID: BS2.6 305 - Ceiling Plaster	
					Non-Fibers	100
1936165-13.2	07-Aug-19	Grey	Plaster	No	Client ID: BS2.6 305 - Ceiling Plaster	
					Non-Fibers	100
1936165-14	07-Aug-19	White	Plaster	No	Client ID: BS2.7 305 - Ceiling Plaster	
					Non-Fibers	100
1936165-15	07-Aug-19	Cream	Vinyl Floor Tile	No	Client ID: BS3.1 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-16.1	07-Aug-19	Cream	Vinyl Floor Tile	No	Client ID: BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-16.2	07-Aug-19	Grey	Leveling Compound	No	Client ID: BS3.2 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-17.1	07-Aug-19	Cream	Vinyl Floor Tile	No	Client ID: BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-17.2	07-Aug-19	Grey	Leveling Compound	No	Client ID: BS3.3 201C - VFT 12"x12" - Cream w/ Dark Streaks	
					Non-Fibers	100
1936165-18.1	07-Aug-19	Beige	Vinyl Sheet Flooring	No	Client ID: BS4.1 208 - VSF - Beige	
					Cellulose	10
					Non-Fibers	90
1936165-18.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS4.1 208 - VSF - Beige	
					Non-Fibers	100

Certificate of Analysis
 Client: McIntosh Perry Limited (Concord)
 Client PO:

Report Date: 05-Sep-2019
 Order Date: 30-Aug-2019
 Project Description: Z1920014HZ

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1936165-19.1	07-Aug-19	Beige	Vinyl Sheet Flooring	No	Client ID: BS4.2 208 - VSF - Beige	
					Cellulose	10
					Non-Fibers	90
1936165-19.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS4.2 208 - VSF - Beige	
					Non-Fibers	100
1936165-20.1	07-Aug-19	Beige	Vinyl Sheet Flooring	No	Client ID: BS4.3 208 - VSF - Beige	
					Cellulose	10
					Non-Fibers	90
1936165-20.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS4.3 208 - VSF - Beige	
					Non-Fibers	100
1936165-21.1	07-Aug-19	Brown	Vinyl Sheet Flooring	No	Client ID: BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Cellulose	10
					Non-Fibers	90
1936165-21.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS5.1 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Non-Fibers	100
1936165-22.1	07-Aug-19	Brown	Vinyl Sheet Flooring	No	Client ID: BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Cellulose	10
					Non-Fibers	90
1936165-22.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS5.2 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Non-Fibers	100
1936165-23.1	07-Aug-19	Brown	Vinyl Sheet Flooring	No	Client ID: BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Cellulose	10
					Non-Fibers	90
1936165-23.2	07-Aug-19	Yellow	Mastic	No	Client ID: BS5.3 210 - VSF - Dark Brown w/ Light & Dark Streaks	
					Non-Fibers	100

Certificate of Analysis

Report Date: 05-Sep-2019

Client: McIntosh Perry Limited (Concord)

Order Date: 30-Aug-2019

Client PO:

Project Description: Z1920014HZ

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	1 - Mississauga	200863-0	4-Sep-19

* Reference to the NVLAP term does not permit the user of this report to claim product certification , approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Mississauga Lab: 15 - 6800 Kitimat Rd Mississauga, Ontario, L5N 5M1

Work Order Revisions | Comments

None



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Chain of Custody
(Lab Use Only)

Page 1 of 2

Client Name: McIntosh Perry
Contact Name: Diana Banakh
Address: 6240 Highway 7, Suite 200, Concord, Ontario L4K 2A3
Telephone: 905-856-5200

Project Reference: 21920019000
Quote #: 19-651
PO #:
Email Address: d.banakh@mcintoshperry.com

Turnaround Time:
 Immediate 1 Day
 4 Hour 2 Day
 8 Hour Regular
Date Required:

ASBESTOS & MOLD ANALYSIS

Matrix: Air Bulk Tape Lift Swab Other **Regulatory Guideline:** ON QC AB SK Other:

Analyses: Microscopic Mold Culturable Mold Bacteria GRAM PCM Asbestos PLM Asbestos Chatfield Asbestos TEM Asbestos

Paracel Order Number: 1936165		Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk		Positive Stop?	
Sample ID					Identify Distinct Building Materials to Be Analyzed			
BS1.1	100 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	1
BS1.2	104D - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	2
BS1.3	105 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	3
BS1.4	106 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	4
BS1.5	207A - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	5
BS1.6	305 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	6
BS1.7	307 - Wall Plaster	Aug. 7, 2019	N/A	PLM			X	7
BS2.1	200 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	8
BS2.2	200 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	9
BS2.3	200 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	10
BS2.4	207 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	11
BS2.5	207 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	12
BS2.6	305 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	13
BS2.7	305 - Ceiling Plaster	Aug. 7, 2019	N/A	PLM			X	14
BS3.1	201C - VFT 12"x12" - Cream w/ Dark Streaks	Aug. 7, 2019	N/A	PLM			X	15
BS3.2	201C - VFT 12"x12" - Cream w/ Dark Streaks	Aug. 7, 2019	N/A	PLM			X	16
BS3.3	201C - VFT 12"x12" - Cream w/ Dark Streaks	Aug. 7, 2019	N/A	PLM			X	17
BS4.1	208 - VSF - Beige	Aug. 7, 2019	N/A	PLM			X	18
BS4.2	208 - VSF - Beige	Aug. 7, 2019	N/A	PLM			X	19
BS4.3	208 - VSF - Beige	Aug. 7, 2019	N/A	PLM			X	20
BS5.1	210 - VSF - Dark Brown w/ Light & Dark Streaks	Aug. 7, 2019	N/A	PLM			X	24
BS5.2	210 - VSF - Dark Brown w/ Light & Dark Streaks	Aug. 7, 2019	N/A	PLM			X	25
BS5.3	210 - VSF - Dark Brown w/ Light & Dark Streaks	Aug. 7, 2019	N/A	PLM			X	26

APPENDIX D
Site Photographs



Photo 1: Representative view of the subject building located at 115 Seraphin-Marion Private, Ottawa, ON.



Photo 2: Representative view of the finishes observed throughout the 1st Floor offices and meeting rooms.

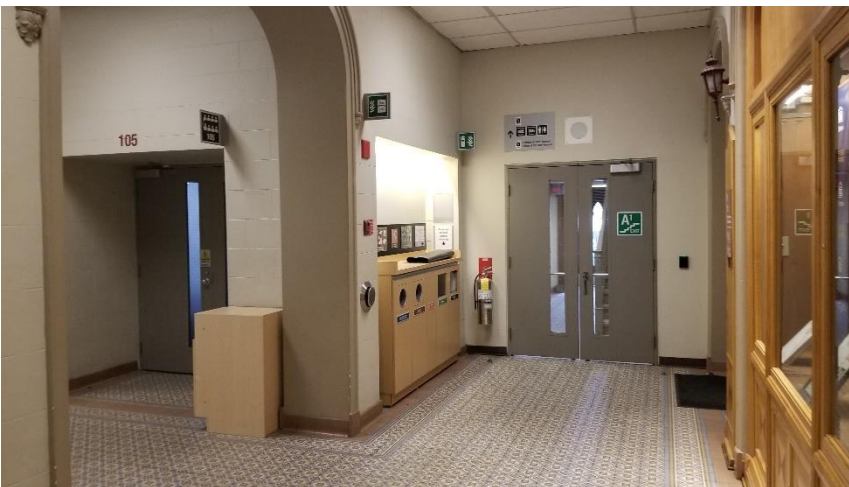


Photo 3: Representative view of the common area finishes observed throughout the 1st Floor.



Photo 4: View of the water damaged ceiling and wall paint identified in Room 101A.



Photo 5: View of the poor condition lead paint (Blue) observed on the doors of Room 106.



Photo 6: View of the water damaged ceiling tiles identified in Room 106A.



Photo 7: View of the poor condition asbestos-containing drywall joint compound observed in Room 106.



Photo 8: View of the non-asbestos vinyl sheet flooring observed throughout the subject building.



Photo 9: View of the asbestos-containing vinyl floor tiles: (12"x12" – Gold w/ White Streaking), (12"x12" – Grey w/ Streaks), and (12"x12" – Beige w/ Streaks) observed in Room 107J.

Material not observed in this location during 2022 Reassessment.



Photo 10: View of the poor condition lead wall paint (Beige) observed in Room 201C.



Photo 11: Representative view of the common area finishes observed throughout the 2nd Floor.



Photo 12: View of the fiberglass mechanical pipe fitting and pipe straight insulation observed throughout the subject building.



Photo 13: Representative view of the classroom finishes observed throughout the 3rd Floor.



Photo 14: View of the poor condition lead window frame paint (White) observed in Room 302.



Photo 15: View of the date stamped suspended ceiling tiles (2'x4' – Pinholes & Small Fissures) observed throughout the subject building.



Photo 16: View of the asbestos-containing ceiling tiles (2'x4' White w/ Small Pinholes) observed in Room 106.

APPENDIX E
Asbestos-Containing Materials Checklists

**Hazardous Materials Survey and 2023 Reassessment
Hagen Hall, 115 Seraphin-Marion Private, Ottawa, Ontario
Appendix E - Asbestos Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type of ACM	Asbestos Confirmed/ Suspected	Friable/Non-Friable	Damaged/ Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action	Comments
1	Room 100	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	800	SF	Manage in Place	
1	Room 104D	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	90	SF	Manage in Place	
1	Room 106	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	345	SF	Manage in Place	
1	Room 106	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Fair Condition	Easy	Low	1	C	Monitor Condition of Material. Consider Removal or Repair.	
1	Room 106	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Fair Condition	Easy	Low	32	C	Monitor Condition of Material. Consider Removal or Repair.	
1	Throughout Level	Drywall Joint Compound	Confirmed	-	Good Condition	Easy	Low	-	-	Manage in Place	
1	Basement Stairwell	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	4	SF	Repair Following Type 1 Abatement Procedures	
1	Room 100	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	<1	SF	Repair Following Type 1 Abatement Procedures	
1	Room 106	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	<1	SF	Repair Following Type 1 Abatement Procedures	
1	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place	
2	Room 200A	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	144	SF	Manage in Place	

**Hazardous Materials Survey and 2023 Reassessment
Hagen Hall, 115 Seraphin-Marion Private, Ottawa, Ontario
Appendix E - Asbestos Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type of ACM	Asbestos Confirmed/Suspected	Friable/Non-Friable	Damaged/Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action	Comments
2	Room 200D	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	285	SF	Manage in Place	
2	Throughout Level	Drywall Joint Compound	Confirmed	-	Good Condition	Easy	Low	-	-	Manage in Place	
2	Room 200	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	<1	SF	Repair Following Type 1 Abatement Procedures	
2	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place	
3	Room 302	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	2000	SF	Manage in Place	
3	Room 304	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	248	SF	Manage in Place	
3	Room 306	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	375	SF	Manage in Place	
3	Room 307	Ceiling Tiles - 2'x4' White w/ Small Pinholes	Confirmed	Friable	Good Condition	Easy	Low	45	SF	Manage in Place	
3	Throughout Level	Drywall Joint Compound	Confirmed	-	Good Condition	Easy	Low	-	-	Manage in Place	
3	Room 206	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	<1	SF	Repair Following Type 1 Abatement Procedures	
3	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place	
3	Throughout Level	Roofing Materials	Suspected	-	Good Condition	Difficult	Low	-	-	Manage in Place	
3	Room 305	Vinyl Floor Tiles (12"x12" – Gold w/ White Streaking)	Confirmed	Non-Friable	Good Condition	Easy	Low	850	SF	Manage in Place	

**Hazardous Materials Survey and 2023 Reassessment
Hagen Hall, 115 Seraphin-Marion Private, Ottawa, Ontario
Appendix E - Asbestos Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type of ACM	Asbestos Confirmed/Suspected	Friable/Non-Friable	Damaged/Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action	Comments
3	Room 305	Vinyl Floor Tiles (12"x12" – Gold w/ White Streaking)	Confirmed	Non-Friable	Poor Condition	Easy	Low	<1	SF	Remove Following Minimum Type 1 Abatement Procedures	

APPENDIX F
Hazardous Containing Materials Checklists

**Hazardous Materials Survey and 2023 Reassessment
Hagen Hall, 115 Seraphin-Marion Private, Ottawa, Ontario
Appendix F - Hazardous Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
1	Room 106	Mould/ Water Damage	Ceiling Tiles	White	Poor Condition	Unknown	3	C	Confirmed	Should be replaced as part of regular maintenance.	*Asbestos-containing ceiling tiles present in area. Removal should be conducted as a Type 1/2 Abatement operation.
1	Room 101A	Lead	Ceiling Paint	White	Poor Condition	Unknown	7	SF	Confirmed	Patch and Paint - Type 1 Lead Abatement Procedures Scrape - Type 2 Lead Abatement Procedures	
1	Room 106A	Mould/ Water Damage	Ceiling Tiles	White	Poor Condition	Unknown	2	C	Confirmed	Should be replaced as part of regular maintenance.	
1	Room 106C	Mould/ Water Damage	Ceiling Tiles	White	Poor Condition	Unknown	4	C	Confirmed	Should be replaced as part of regular maintenance.	*Asbestos-containing ceiling tiles present in area. Removal should be conducted as a Type 1/2 Abatement operation.
1	Throughout Level	Lead	Ceiling Paint	White	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Room 101A	Lead	Ceiling Paint	White	Poor Condition	N/A	7	SF	Confirmed	Manage in Place	

**Hazardous Materials Survey and 2023 Reassessment
Hagen Hall, 115 Seraphin-Marion Private, Ottawa, Ontario
Appendix F - Hazardous Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
1	Room 107	Lead	Battery Pack	Battery Pack	Good Condition	Aim-Lite	2	C	Confirmed	Manage in Place	
1	Throughout Level	Lead	Column Paint	Light Purple	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Lead	Window Frame Paint	White	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Lead	Railing Paint	Black	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Lead	Wall Paint	Beige	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Lead	Door Paint	Blue	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Lead	Stall & Countertop Paint	Yellow	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Room 107	Lead	Battery Pack	N/A	Good Condition	Aim-Lite	2	C	Confirmed	Manage in Place	
1	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	Alta	-	-	Confirmed	Manage in Place	
1	105	Mercury	Thermostat	N/A	Good Condition	Barber Coleman	1	C	Suspected	Manage in Place	
1	Room 100	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Elkay	1	C	Confirmed	Manage in Place	R134a
1	Room 107	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	LG	1	C	Confirmed	Manage in Place	R134a
1	Room 104	Ozone Depleting Substances (ODS)	Mini Fridge	N/A	Good Condition	Whirlpool	1	C	Confirmed	Manage in Place	R134a
2	Throughout Level	Lead	Ceiling Paint	White	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Throughout Level	Lead	Window Frame Paint	White	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Throughout Level	Lead	Railing Paint	Black	Good Condition	N/A	-	-	Confirmed	Manage in Place	

**Hazardous Materials Survey and 2023 Reassessment
Hagen Hall, 115 Seraphin-Marion Private, Ottawa, Ontario
Appendix F - Hazardous Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
2	Throughout Level	Lead	Wall Paint	Beige	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Room 201C	Lead	Wall Paint	Beige	Poor Condition	N/A	10	SF	Confirmed	Paint must be removed and/or stabilized following Class 1/2 or Type 1/2 Lead Procedures as per MOL and EACO Guidelines.	
2	Room 202A	Lead	Wall Paint	Beige	Poor Condition	N/A	1	SF	Confirmed	Paint must be removed and/or stabilized following Class 1/2 or Type 1/2 Lead Procedures as per MOL and EACO Guidelines.	
2	Throughout Level	Lead	Door Paint	Blue	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Throughout Level	Lead	Stall & Countertop Paint	Yellow	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	Alta	-	-	Confirmed	Manage in Place	
2	Room 216	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Frigidaire	1	C	Confirmed	Manage in Place	R134a

**Hazardous Materials Survey and 2023 Reassessment
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Appendix F - Hazardous Containing Materials Checklist**

Z1920014HZ / CCC-230252-00

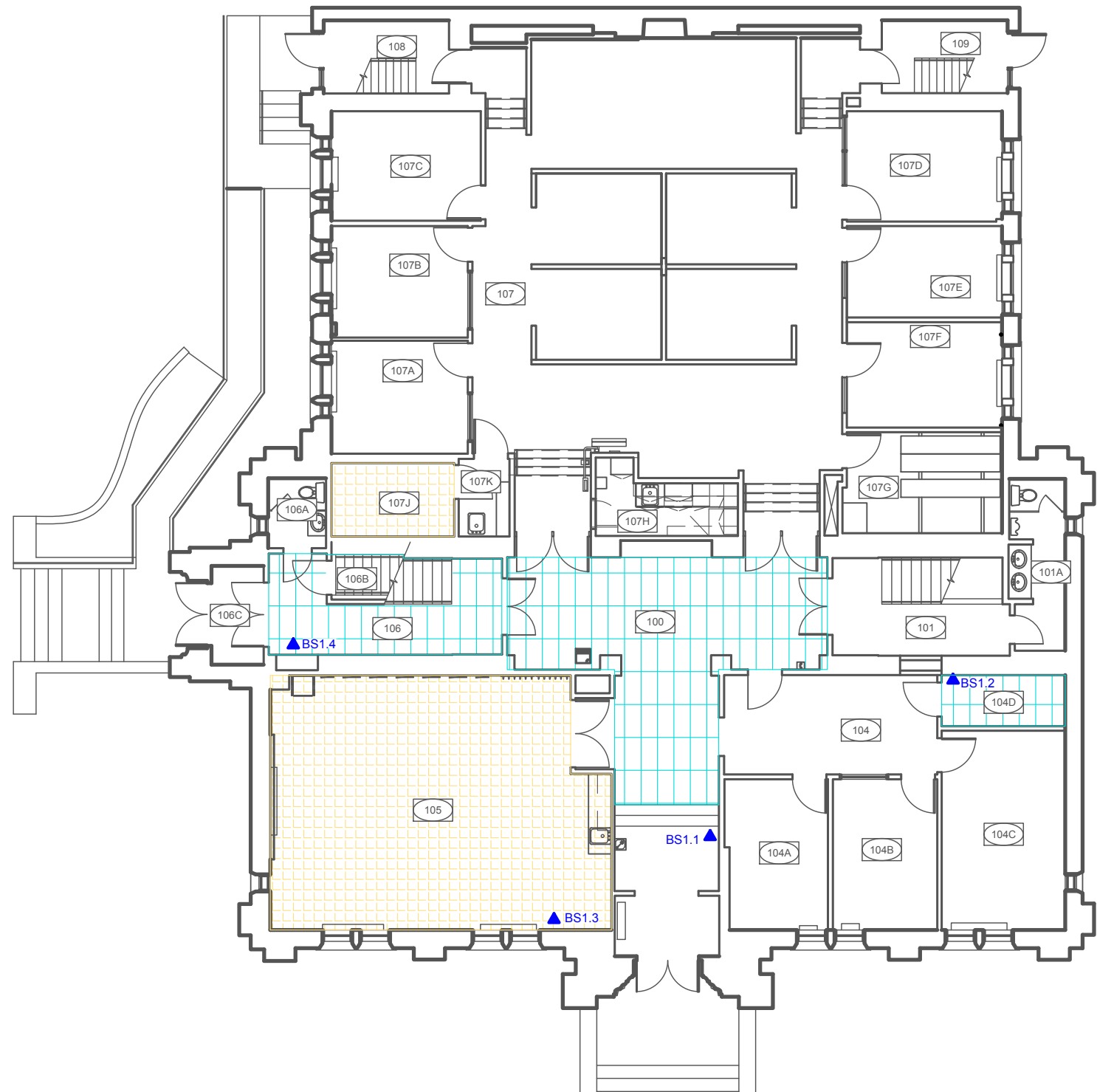
Floor/Level	Location	Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
3	Room 305	Mould/ Water Damage	Ceiling Tiles	White	Poor Condition	Unknown	3	C	Confirmed	Should be replaced as part of regular maintenance.	
3	Throughout Level	Lead	Ceiling Paint	White	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Lead	Window Frame Paint	White	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Lead	Railing Paint	Black	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Lead	Wall Paint	Beige	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Lead	Door Paint	Blue	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Lead	Stall & Countertop Paint	Yellow	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	Alta	-	-	Confirmed	Manage in Place	

**Hazardous Materials Survey and 2023 Reassessment
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Z1920014HZ / CCC-230252-00

Floor/Level	Location	Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
3	Room 301	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Elkay	1	C	Confirmed	Manage in Place	R134a
3	Room 306	Ozone Depleting Substances (ODS)	Mini Fridge	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a
3	Room 306	Ozone Depleting Substances (ODS)	Water Cooler	N/A	Good Condition	Aqualife	1	C	Confirmed	Manage in Place	R134a

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McINTOSH PERRY
 6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
 Tel: 905.856.5200 Fax: 905.695.0221
 Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:
 ▲ Asbestos Bulk Sample

- ACM Vinyl floor Tile (VFT)
- ACM Ceiling Tile
- Drywall with ACM joint compound is present throughout

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS, REPORT ALL ERRORS AND OMISSIONS TO THE CONSULTANTS, PRIOR TO PROCEEDING WITH ANY WORKS.

CLIENT: UNIVERSITY OF OTTAWA

TITLE: GROUND FLOOR SITE PLAN & SAMPLE LOCATION

PROJECT: DESIGNATED SUBSTANCE SURVEY HAGEN HALL, OTTAWA, ONTARIO

SCALE: 1:150

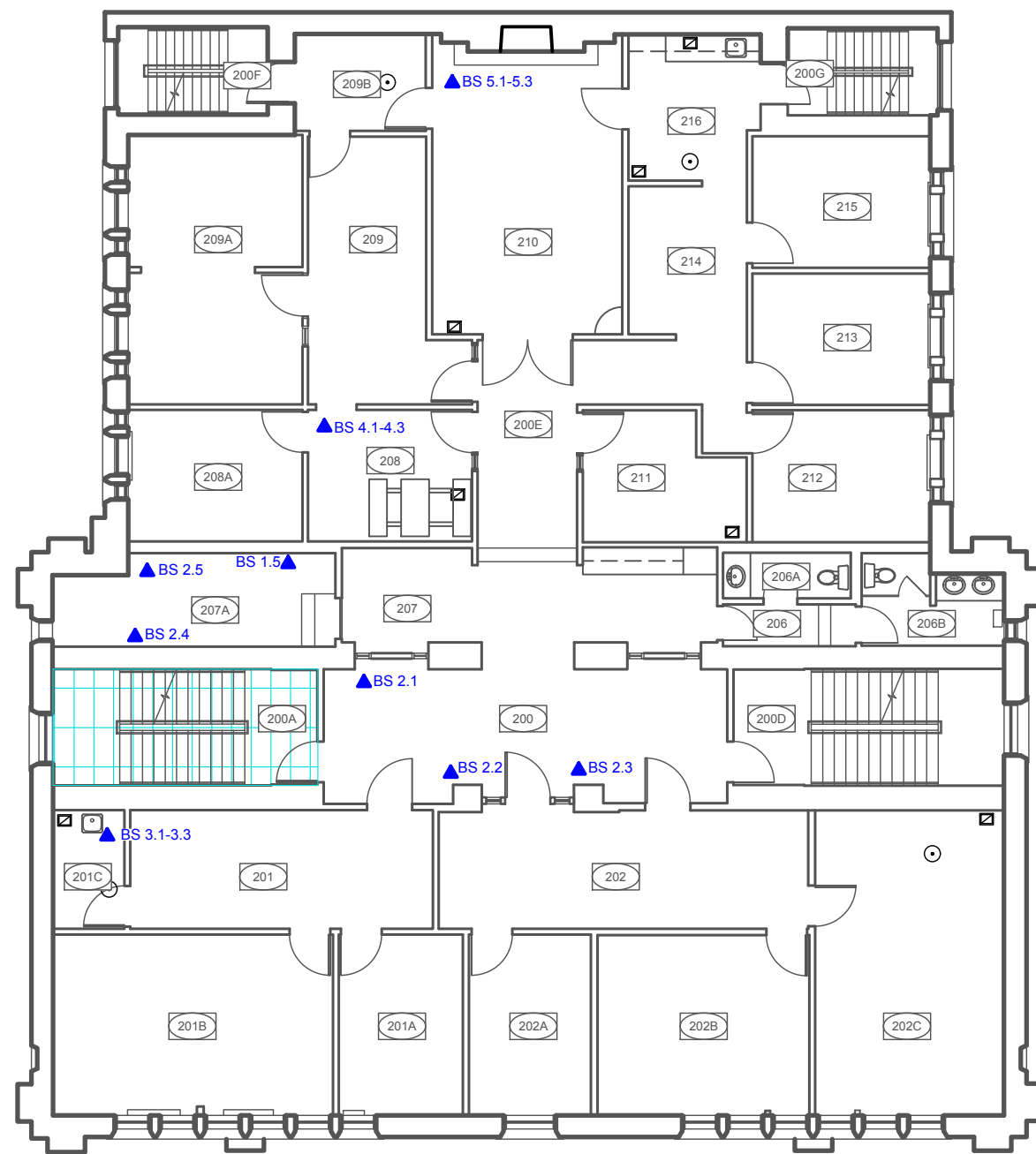
DATE: NOVEMBER 22, 2019

DRAWN: M.A.

CHECKED: M.M.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A-0.1



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ACM Ceiling Tile



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 SITE PLAN &
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PROJECT: DESIGNATED SUBSTANCE SURVEY
 HAGEN HALL, OTTAWA, ONTARIO

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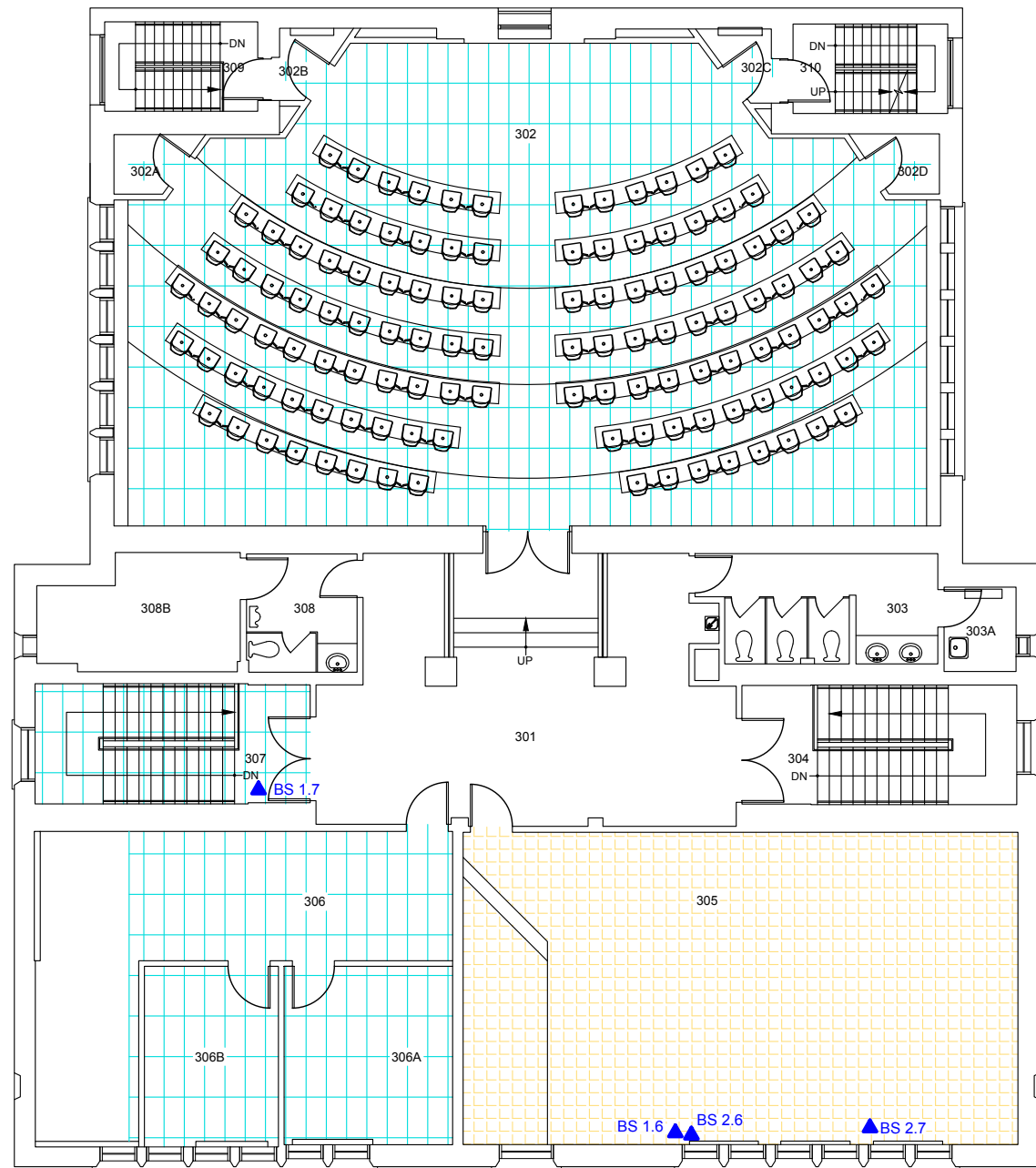
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