

HAZARDOUS MATERIALS SURVEY AND 2023 REASSESSMENT 150 LOUIS-PASTEUR PRIVATE (STEM COMPLEX), OTTAWA, ON



Project No.: Z2021101HZ / CCC-230252-00

Prepared for:

University of Ottawa

Prepared by:

McIntosh Perry Limited (MPL)

MPL Contact:

John Tufts, Project Manager

Hazardous Materials / Environmental Health & Safety

T: 613-836-2184 E: j.tufts@mcintoshperry.com

Date:

November 28, 2023

TABLE OF CONTENTS

REASSESSMENT SURVEY 2023	I
EXECUTIVE SUMMARY	I
1.0 INTRODUCTION	1
2.0 PROPERTY DESCRIPTION.....	2
3.0 FINDINGS & RECOMMENDATIONS.....	2
<i>Designated Substances</i>	<i>2</i>
3.1 Asbestos	2
3.2 Lead.....	2
3.2.1 Paint Finishes	2
3.2.2 Battery Packs.....	3
3.3 Mercury.....	4
3.3.1 Thermostat Switches.....	4
3.3.2 Fluorescent Light Tubes	4
3.3.3 Pressure Gauges and Float Switches.....	4
3.4 Silica	4
<i>Other Hazardous Materials.....</i>	<i>5</i>
3.5 Polychlorinated Biphenyls (PCBs).....	5
3.5.1 Light Ballasts	5
3.5.2 HID Light Ballasts.....	5
3.5.3 Transformers.....	5
3.6 Ozone-depleting Substances (ODSs) and Other Halocarbon.....	6
3.7 Radioactive Materials	6
3.8 Underground and Above Ground Storage Tanks (USTs and ASTs)	6
3.9 Mould	7
3.9.1 Mould.....	7
3.9.2 Water Damage	7
4.0 GENERAL CONSIDERATIONS AND LIMITATIONS	8

- Appendix A – Regulatory Requirements
- Appendix B – Survey Methodology & Background Information
- Appendix C – Laboratory Certificate of Analysis
- Appendix D – Site Photographs
- Appendix E – Asbestos-Containing Materials Checklist
- Appendix F – Hazardous Materials Checklist
- Appendix G - Site Sampling & Location Plans

REASSESSMENT SURVEY 2023

The University of Ottawa retained McIntosh Perry Limited (MPL) to complete a hazardous materials survey of the STEM Complex at 150 Louis Pasteur Private in Ottawa, ON. The initial hazardous materials survey was conducted on June 3 and 4, 2020. **The reassessment survey was completed on August 24, 2023.**

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 long-term management.

The assessment and reassessment determined the following findings and recommendations.

Summary of the Reassessment Findings:

- No ACMs were identified or suspected to be present in the building.
- No mould or water-damaged materials were observed 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

The University of Ottawa retained McIntosh Perry Limited (MPL) to complete a Hazardous Materials Survey at the STEM Complex at 150 Louis Pasteur Private in Ottawa, ON. The initial hazardous materials survey was conducted on June 3rd and 4th, 2020. **The Reassessment survey was completed on August 24, 2023.**

The purpose of the survey was to determine 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 polychlorinated biphenyls (PCBs), radioactive materials, ozone-depleting substances (ODSs), other halocarbons and mould.

Based on the assessment conducted by MPL, no ACMs were identified or suspected to be present in the building.

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 A: Summary of Designated Substances & Hazardous Materials Identified

Material Description	Location
Mercury Vapour	Specific Equipment
Radioactive Materials	Specific Equipment
Ozone Depleted Substances	Specific Equipment
Silica	Throughout Building

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 involve disturbance of the materials mentioned above:

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

Prior to any renovations or demolition activities within the 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 not assessed as part of this survey should be assumed to contain designated substances 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 shall furnish this report to subcontractors.

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

November 28, 2023

University of Ottawa

141 Louis-Pasteur Private

Ottawa, Ontario

K1N 1E3

via email: martine.bergeron@uottawa.ca

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

Re: STEM Complex - 150 Louis Pasteur Private in Ottawa, ON
Hazardous Materials Survey and 2023 Reassessment
McIntosh Perry Limited Reference No. Z2021101HZ / CCC-230252-00

1.0 INTRODUCTION

Under your instructions, McIntosh Perry Limited (MPL) conducted a Hazardous Materials Survey and 2023 Reassessment in the STEM Complex at 150 Louis Pasteur Private in Ottawa, ON. The site is on the southwest corner of Louis-Pasteur Private. The initial hazardous materials survey was conducted on June 3 and 4, 2020. **The reassessment survey was completed on August 24, 2023.**

The purpose of the survey was to determine 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 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;
- Bulk sampling and analysis of building materials suspected of containing asbestos (if required);
- Bulk sampling and analysis of representative paints and finishes suspected of containing lead (if required);
- 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 fifteen-storey building constructed in 2018 and covers approximately 335, 887 square feet. The subject building was observed to be constructed with a concrete slab floor flat conventional roof supported by steel trusses, beams and columns. The interior walls consist of gypsum wallboard and concrete block. Throughout the subject building, ceilings were observed to be open and exposed concrete. The floors were generally concrete.

3.0 FINDINGS & RECOMMENDATIONS

Designated Substances

3.1 Asbestos

Findings

Due to the age of the subject building, no asbestos was suspected to be present and therefore, no samples were previously collected during the site investigation.

Recommendations

Any suspect building materials not assessed as part of this survey should be assumed to contain asbestos until proven otherwise by analytical testing.

3.2 Lead

Findings

3.2.1 Paint Finishes

Four (4) paint samples from the subject building were previously collected and analyzed for lead content. Results of bulk sampling testing are summarized in Table 2, and the Laboratory Certificate of Analysis can be found in Appendix C.

Table 2:
Previously Identified Lead Paint Finishes

Sample I.D.	Location	Material	Colour	Lead Concentration Weight by Conc. (%)
Pb01	Room 400N	Door Paint	Dark Grey	<0.018
Pb02	Room 300G	Wall Paint	Yellow	<0.014
Pb03	Room 018	Floor Paint	Grey	<0.0081
Pb04	Room 400H	Wall Paint	Orange	<0.032

The paint finishes in the above table were determined to contain concentrations of lead, which are below the limit of detection. However, all other paints throughout the subject building not mentioned in this report must be considered to be lead-containing unless sampling and analysis are proven otherwise.

3.2.2 Battery Packs

MPL did not observe any lead-containing acid battery packs throughout the subject 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

Detailed worker protection protocols are outlined in the OMOL Guideline “Lead on Construction Projects” dated April 2011. Generally, removing the lead-based paint using a chemical gel or paste or a power tool equipped with a HEPA filter is considered a Type 1 operation. Removing lead-based paint by scraping or sanding using non-powered hand tools is considered a Type 2 operation. Removing 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 removed lead materials must follow the Ministry of Labour and Environmental Abatement Council of Canada (EACC) Lead Guidelines.

Please refer to Appendix F – Hazardous Materials Checklist for material conditions, 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 do 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 the Leachate Criteria (Schedule 4) of this regulation.

3.3 Mercury

Findings

3.3.1 Thermostat Switches

No thermostats containing liquid mercury were observed throughout the subject building.

3.3.2 Fluorescent Light Tubes

Fluorescent light fixtures were identified throughout the subject building, containing 2 to 4 tubes per fixture. Mercury is likely to be present in vapour form in fluorescent light tubes.

3.3.3 Pressure Gauges and Float Switches

No pressure gauges or float switches suspected of containing mercury were noted in the subject building.

Recommendations

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

Precautions must be taken to prevent mercury liquid/vapours from becoming airborne during building demolition. Mercury exposure 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 under 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 throughout the structures. Free crystalline silica (α -Quartz) may be a component in ceiling tiles and gypsum boards. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Recommendations

Please refer to Appendix E – Hazardous Materials Checklist for equipment conditions, 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, masonry demolition, etc.) to ensure that workers' exposure levels to airborne silica do 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.

Any demolition works likely to impact silica-containing materials should be conducted under 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

LED and fluorescent lights illuminate the subject building. Based on the age of the building, the lamp ballasts are not suspected to contain PCBs.

3.5.2 HID Light Ballasts

MPL observed HID Lamps at the interior of the building. Based on the age of the building, the HID lamp ballasts are not suspected to contain PCBs.

3.5.3 Transformers

No PCBs containing electrical transformers were observed throughout the subject building. Transformers that could be assessed were observed to be dry-type and manufactured by Hammond Manufacturing.

Recommendations

Since no PCB-containing materials were 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. MPL observed equipment such as refrigerators, water fountains, water coolers, freezers, etc., which contain or are suspected of containing ODSs or other halocarbons.

No other equipment containing ODSs or other halocarbons was observed throughout the subject building.

Recommendations

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

Under the management of a licensed contractor, equipment containing R-22 and 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

A visual assessment of the subject building was conducted to determine if any electrical components containing radioactive materials were present. Smoke detectors were observed throughout the subject building containing radioactive materials.

Recommendations

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

The radioactive sources in smoke alarms are sealed and contained within a metal case inside the smoke detector and must not be damaged or tampered with. These materials do not pose a hazard as long as they remain contained and properly disposed of at the time of removal or replacement.

Prior to any renovations or building demolition, all equipment containing radioactive materials must be decommissioned by a licensed contractor such that radioactive materials are contained and not released to the environment during decommissioning as per O.Reg. 347/09.

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 throughout 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 observe any areas with obvious signs of visible mould growth.

3.9.2 Water Damage

A visual survey of the subject building was conducted to determine if water damage was present. MPL did not find any areas with water damage.

Recommendations

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

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders 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 results of laboratory testing as identified herein.

It should be noted that there might be Designated Substances in locations not visible during our investigation. In the event such material is encountered during demolition operations in the building, the 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



Jane Zhang, M.Sc.
Hazardous Materials, EH&S 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 in April 2011 by the Occupational Health and Safety branch of the Ministry of Labour

Guideline: Silica on Construction Projects issued in 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 every 12 months 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 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

Not all Designated Substances or suspect hazardous materials were previously sampled for this survey. Selective sampling was conducted only for substances suspected to be present or those deemed to have a likely source of origin in the survey areas.

Materials that were homogeneous 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 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 Designated Substances until proven otherwise.

During the survey, representative samples of suspect building materials were previously collected and sent to AIHAn accredited independent laboratory for analysis. Laboratory Certificates of Analysis are attached in Appendix C.

Other Designated Substances 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 the STEM Complex located at 150 Louis-Pasteur Private, Ottawa, ON, 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 at 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.). It did 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 not conducted as part of this assessment. Results for lead samples can be found in the Findings & Recommendation Section 3.0.

A historical review of previous designated substance survey reports, and abatement reports were examined as part of this survey.

The reports are listed as follows,

- Hazardous Materials Survey: STEM Complex, Ottawa, ON, McIntosh Perry Limited (dated October 9, 2020), reference Z2021101HZ);
- Hazardous Materials Survey and 2022 Reassessment: STEM Complex, Ottawa, ON, McIntosh Perry Limited (dated November 28, 2022), reference Z2021101HZ / CCC-230252-00);

Asbestos

Background Information on Asbestos

Asbestos is a generic name for a group of naturally occurring fibrous minerals. Asbestos was commonly used in building materials such as insulation, fireproofing and acoustic or decorative panels. Although there are many types of asbestos, Ontario's three primary forms of commercial importance 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 due to material aging, physical damage, 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 identifying 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 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 under Table 1. O. Reg. 278/05 s. 3 (3) below. Building materials suspected of containing asbestos were previously 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, troweling or, such	Less than 90 square metres	3
		90 or more square metres but less than 450 square metres	5

	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), confirming the 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.

Evaluation of ACMs Based on Condition

In evaluating an ACM's condition, the following criteria were 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 near the end of useful life. This includes minor shrinking, cracking, delamination and/ or other damage. The 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 were also applied to other Designated Substances. Please refer to the Hazardous Materials Checklist in Appendix E 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 the paint's shelf life and 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 hemoglobin 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.

No regulatory limit in Ontario determines what lead concentration 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 importing or selling of products within Canada. Therefore, this is not to be misconstrued as a limit established to define a lead-containing material or a limitation 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 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 non-aggressively and performed using adequate dust control procedures. In that case, 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 has been used in solder on copper plumbing fixtures, lead conduit pipes, lead-calcium battery plates, ammunition, and nuclear and X-ray shielding devices. However, these materials were not sampled during this investigation but were noted.

Representative bulk samples of paint and finishes suspected of containing lead were previously collected to verify lead content in paints. Bulk samples were scraped down to the building base structure, with all possible layers present, placed in sealed and labelled plastic bags and then submitted to an independent laboratory for analysis. Samples were treated with a dilute nitric acid sample digestion prior to filtration. The 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 human poisoning through inhaling vapours, ingesting 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 building demolition. 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 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 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 the thermostat switch contains approximately 3-4 grams 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 and the phosphor coating on the lamp tube are in a vapour form. 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 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, the facility must treat the waste as hazardous. 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 throughout the structures. Free crystalline silica (α-Quartz) may be a component in ceiling tiles and gypsum boards. 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.

Polychlorinated Biphenyls (PCBs)

Background Information on PCBs

Polychlorinated Biphenyls (PCBs) were commonly used as a dielectric insulating fluid in electrical equipment such as transformers, capacitors, and fluorescent and HID lamp ballasts. The production of PCBs in North America started in 1929 and was banned at the beginning of 1979. After 1981, no manufacturers produced fluorescent and HID lamps with PCB-containing ballasts.

PCBs are not a designated substance under the Occupational Health and Safety Act.

PCB Regulations (SOR/2008-273)

The *PCB Regulations* (the Regulations) set specific deadlines for ending the use of PCBs in concentrations at or above 50 mg/kg, eliminating all PCBs and equipment containing PCBs currently in storage and limiting the period PCBs can be stored before being destroyed. The Regulations also establish sound practices for the better management of the remaining PCBs in use (i.e. those with content of less than 50 mg/kg) until their eventual elimination to prevent contamination of dielectric fluids and dispersion of PCBs in small quantities into other liquids.

Ozone-depleting Substances (ODSs) and Other Halocarbons

Background Information on ODSs

Within Ontario, the general use of ozone-depleting substances (ODSs) and other halocarbons is controlled through Regulation 463/10 of the Environmental Protection Act. Production of ODSs in hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs) ceased in Canada in 1993 due to their ozone-depleting characteristics. The importation of CFCs into Canada ceased in 1997, and a total ban was placed on their use in 2010. The use of these materials is still permitted in existing equipment. However, equipment must be serviced by a licensed contractor such that CFCs are contained and not released to the environment during servicing or operation.

Radioactive Materials

Two types of smoke detectors are common in buildings (residential, institutional, commercial, industrial, etc.). Photoelectric-type smoke detectors detect smoke using an optical sensor, whereas ionization-type smoke detectors use an ionization chamber containing radioactive material. The ionization type is cheaper and is particularly common in older buildings. A typical modern detector contains about 1.0 microcurie of the radioactive element americium, a decrease from 3 microcurie in 1978. Sealed radioactive material sources in fire detection systems are still permitted and regulated by the Canadian Nuclear Safety Commission and the Canadian Nuclear Safety Act. The radioactive sources in smoke alarms are sealed and contained within a metal case inside the smoke detector and must not be damaged or tampered with.

Mould & Water Damage

Mould growth inside buildings is due to excess moisture caused by leakages, condensation or capillary movement of water into the building. Toxic moulds such as *Stachybotrys chartarum* and some species of *Aspergillus* spp. are greenish-black, wet and slimy moulds that grow on soaking wet cellulose-based materials. They are often found near water leaks or where drying is very slow and can form after flooding if insufficient cleanup and drying occur. They will generally not occur if materials are kept dry.

MPL conducted a general visual assessment for any obvious signs of visible mould and/or water damage. Based on our visual observations, the following guidelines were used in providing our recommendations for remedial action where required:

- Institute of Inspection Cleaning and Restoration Certification (IICRC) S520 Standard and Reference for Professional Mould Remediation,
- The Canadian Construction Association (CCA) Mould Guidelines for the Canadian construction industry (CCA document 82-2004)
- Environmental Abatement Council of Canada (EACC) Mould Abatement Guidelines.

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 (vinyl cyanide) is an explosive, flammable liquid used to manufacture 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, to 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 nor 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 producing styrene, phenol, cyclohexane, and other organic chemicals and to manufacture 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 a benzene-soluble fraction of the 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

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

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

APPENDIX C

Laboratory Certificate of Analysis

APPENDIX D

Site Photographs



Photo 1: View of typical building finishes.



Photo 2: View of typical building finishes.

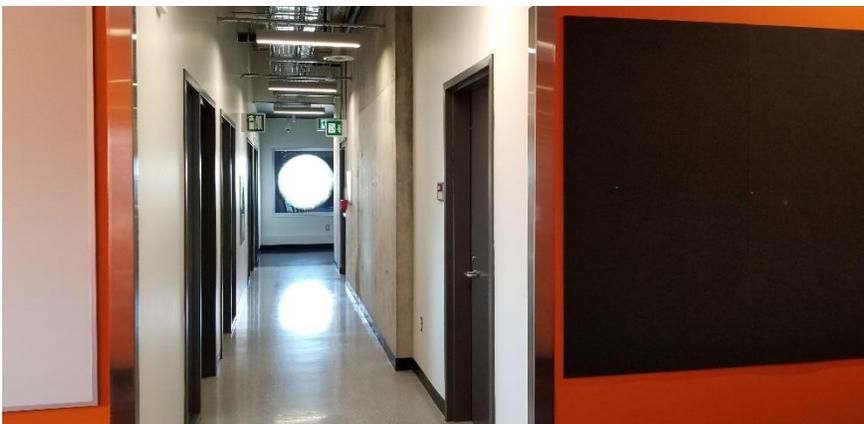


Photo 3: View of typical hallway finishes.



Photo 4: View of typical hallway finishes.

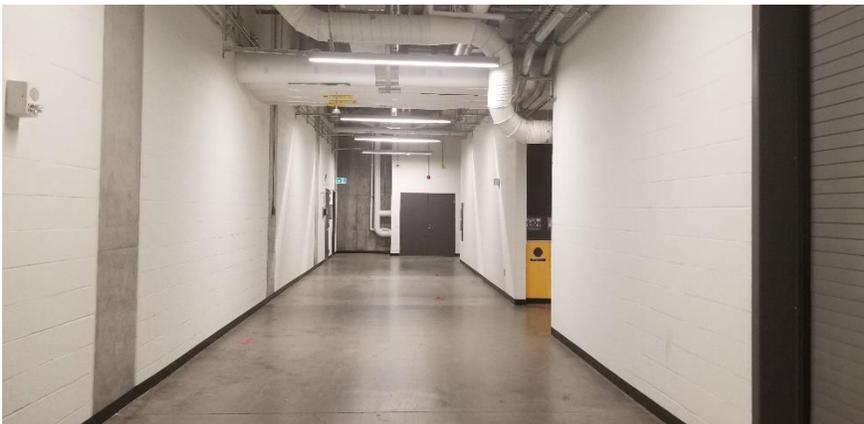


Photo 5: View of typical hallway finishes.

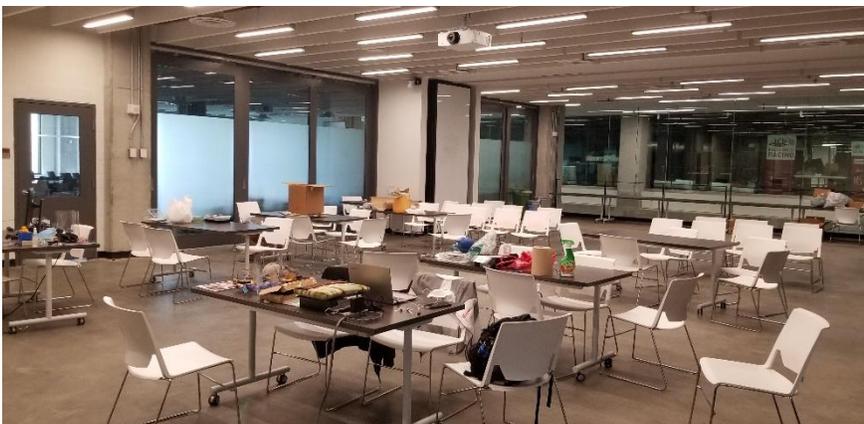


Photo 6: View of typical classroom finishes.



Photo 7: View of typical office finishes.



Photo 8: A typical view of the ODS-containing equipment was observed throughout the subject building.



Photo 9: View of the floor with non-lead-containing paint (Grey) in Room 018.



Photo 10: Typical silica containing concrete finishes.



Photo 11: Typical view of fibreglass mechanical insulation throughout the subject building.

APPENDIX E

Hazardous Materials Checklist



EMSL Canada Inc.

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: (289) 997-4602 / (289) 997-4607

<http://www.EMSL.com>

torontolab@emsl.com

EMSL Canada Or	552006368
CustomerID:	55CTCS25
CustomerPO:	OZ2021101HZ
ProjectID:	

Attn: **Diana Banakh**
McIntosh Perry
6240 Highway 7
Suite 200
Woodbridge, ON L4H 4G3

Phone: (905) 856-5200
 Fax: (905) 856-1455
 Received: 06/11/20 4:01 PM
 Collected: 6/11/2020

Project: OZ2021101HZ

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
Pb1 552006368-0001	6/11/2020	6/12/2020 Site: Door Paint - Dark Grey Insufficient sample to reach reporting limit.	0.1102 g	0.018 % wt	<0.018 % wt
Pb2 552006368-0002	6/11/2020	6/12/2020 Site: Wall Paint - Yellow Insufficient sample to reach reporting limit.	0.1470 g	0.014 % wt	<0.014 % wt
Pb3 552006368-0003	6/11/2020	6/12/2020 Site: Floor Paint - Grey	0.2456 g	0.0081 % wt	<0.0081 % wt
Pb4 552006368-0004	6/11/2020	6/12/2020 Site: Wall Paint - Orange Insufficient sample to reach reporting limit.	0.0627 g	0.032 % wt	<0.032 % wt

Rowena Fanto, Lead Supervisor
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the results, it will be noted on the report. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.
 Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 06/18/2020 11:00:17

APPENDIX E

Asbestos-Containing Materials Checklists

150 Louis-Pasteur Private (STEM Complex), Ottawa, ON
Hazardous Materials Survey and 2023 Reassessment
Appendix E - Asbestos-Containing Materials Checklist

Z2021101HZ / CCC-230252-00

Floor/Level	Room	Type of ACM	Description	Asbestos Confirmed/Suspected	Friable/Non-Friable	Damaged/Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action	Comments
No suspect or asbestos-containing materials were observed.												

APPENDIX F
Hazardous Containing Materials Checklists

150 Louis-Pasteur Private (STEM Complex), Ottawa, ON
Hazardous Materials Survey and 2023 Reassessment
Appendix F - Hazardous Materials Checklist

Z2021101HZ / CCC-230252-00

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
00	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
00	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
00	Throughout Level	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Room 010	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Whirpool, Beaumark, Therma Scientific	3	C	Confirmed	Manage in Place	R404
1	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Room 100	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Murdoch	1	C	Confirmed	Manage in Place	R134a
1	Room 139A	Ozone Depleting Substances (ODS)	Vending Machine	N/A	Good Condition	Pepsi	2	C	Confirmed	Manage in Place	R134a
1	Room	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Arctic King	1	C	Confirmed	Manage in Place	R134a

150 Louis-Pasteur Private (STEM Complex), Ottawa, ON
Hazardous Materials Survey and 2023 Reassessment
Appendix F - Hazardous Materials Checklist

Z2021101HZ / CCC-230252-00

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
2	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	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	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	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	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Room 308	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a
4	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
4	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
4	Throughout Level	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
4	Room 470	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a
4	Room 476	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Woods, VWR, Therma Scientific	3	C	Confirmed	Manage in Place	R404a
4	Room 477	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Fisher Brand	2	C	Confirmed	Manage in Place	Unknown Refrigerant
4	Room 477B	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a

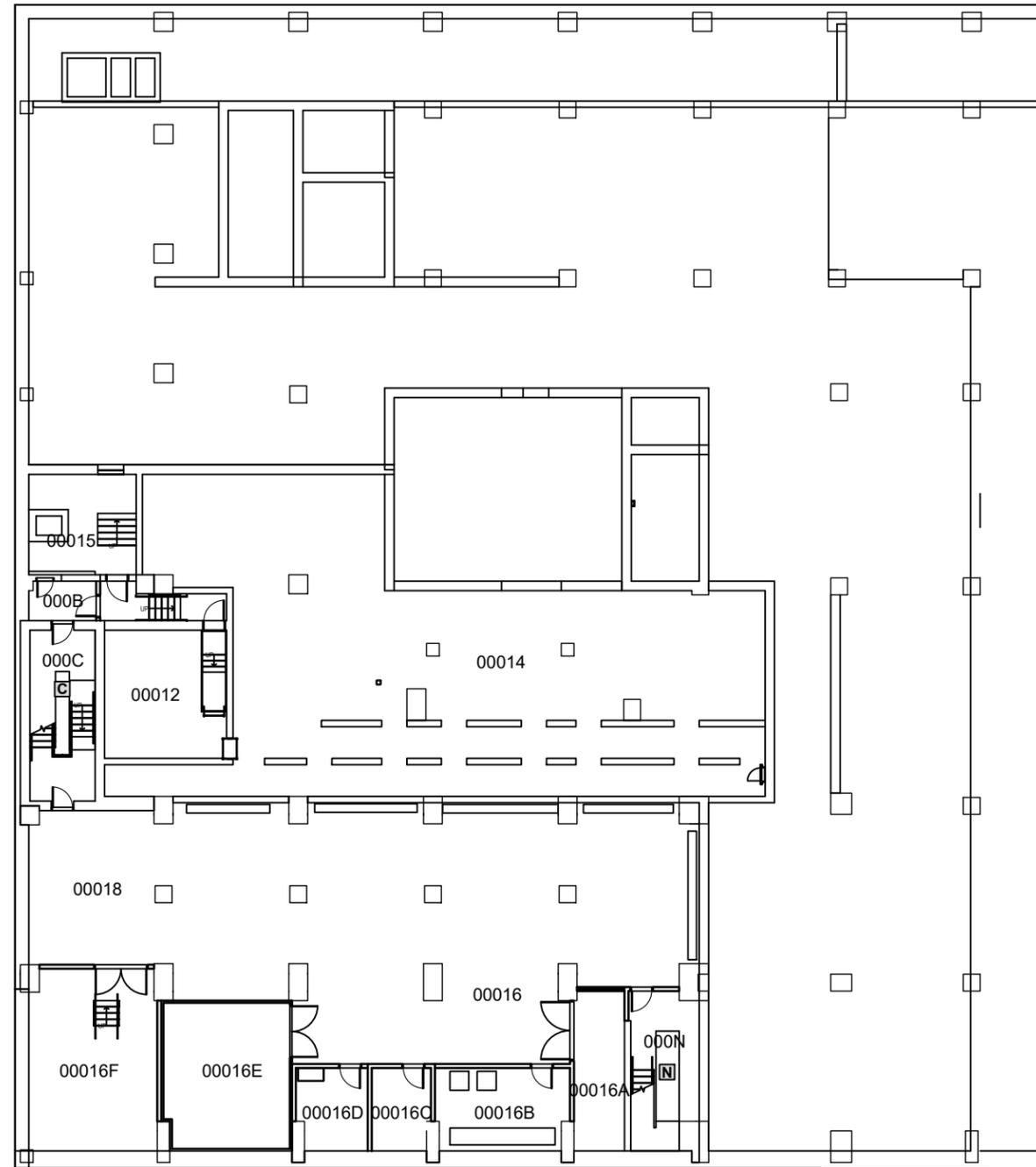
150 Louis-Pasteur Private (STEM Complex), Ottawa, ON
 Hazardous Materials Survey and 2023 Reassessment
 Appendix F - Hazardous Materials Checklist

Z2021101HZ / CCC-230252-00

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
4	Room 483	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Kenmore	1	C	Confirmed	Manage in Place	R134a
4	Room 485	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby, HG	2	C	Confirmed	Manage in Place	R134a
4	Room 486	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Master Chef	1	C	Confirmed	Manage in Place	R600a
4	Room 488	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Kenmore	2	C	Confirmed	Manage in Place	R134a
5	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
5	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
5	Throughout Level	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
6	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
6	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
6	Throughout Level	Radioactive Materials	Smoke Detectors	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
6	Room 636B	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a

APPENDIX G

Site Sampling & Location Plans



W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\02Z-02101-HZ PHASE 1\PROJECTS\36 150 LOUIS PASTEUR (STEM)\DRAWINGS\DWG - SAMPLE LOCATION - STEM COMPLEX.DWG

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:
□ Lead Paint Sample <LOD
■ Lead Paint Sample >LOD

CLIENT: UNIVERSITY OF OTTAWA

TITLE: SAMPLE LOCATIONS
LEVEL 000

PROJECT: STEM COMPLEX
HAZARDOUS MATERIALS SURVEYS

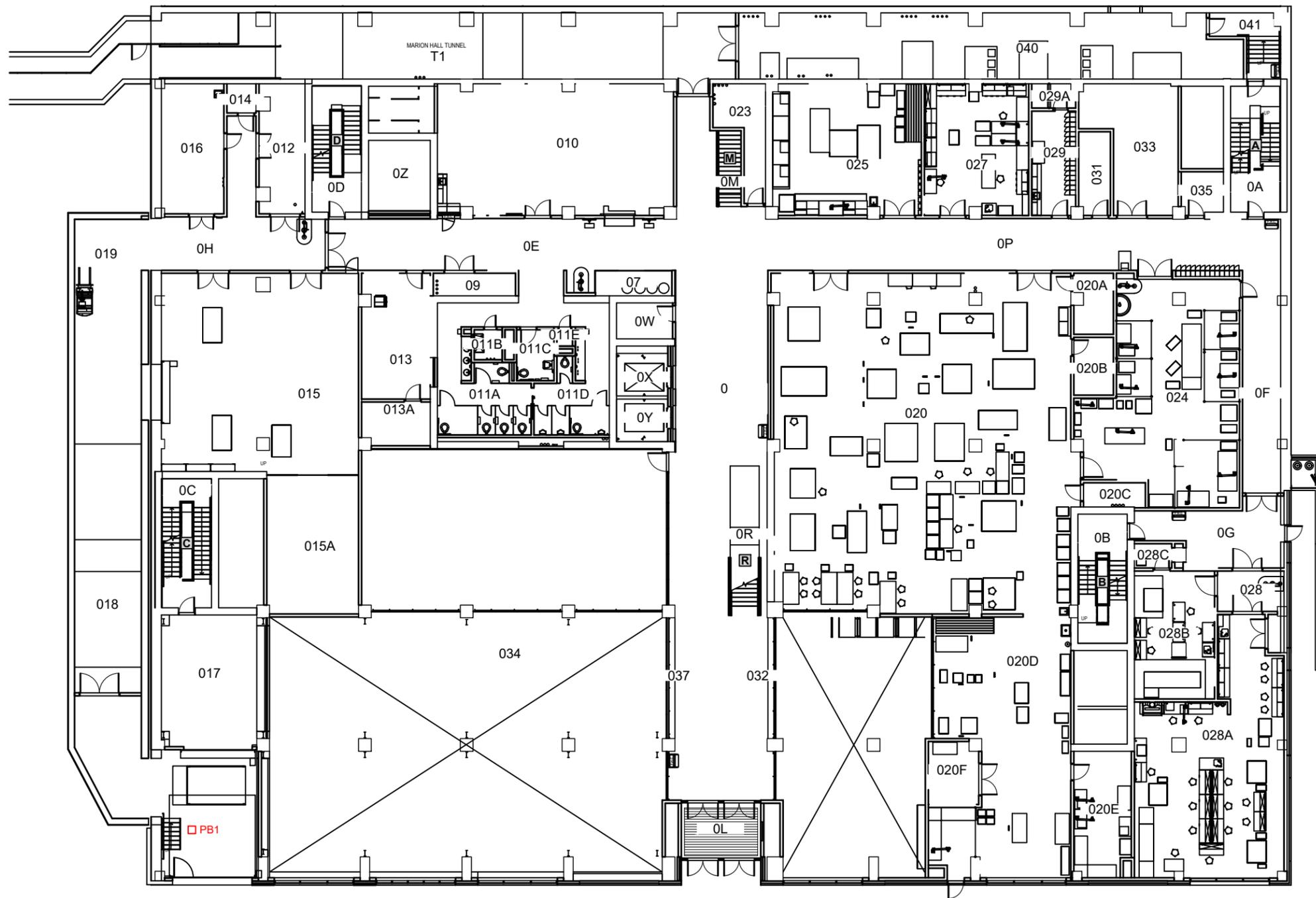
SCALE: 1:300
DRAWN: O.B.

DATE: JULY 22, 2020
CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A000

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



Legend:

- Lead Paint Sample <LOD
- Lead Paint Sample >LOD

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

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: SAMPLE LOCATIONS
 LEVEL 0

PROJECT: STEM COMPLEX
 HAZARDOUS MATERIALS SURVEYS

SCALE: 1:300

DATE: JULY 22, 2020

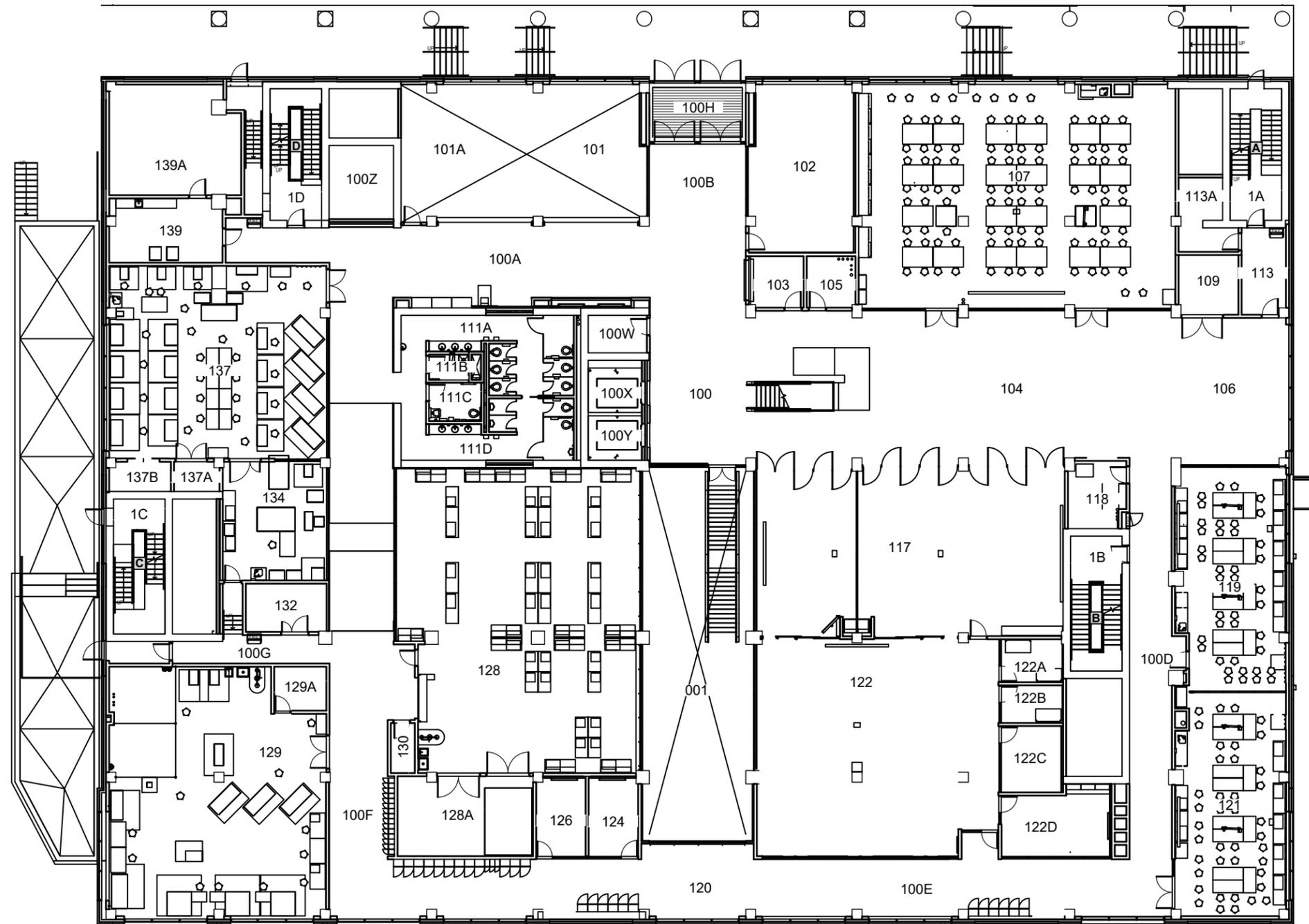
DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A0

W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\02Z-02101-HZ PHASE \PROJECTS\36 150 LOUIS PASTEUR (STEM)\DRAWINGS\DWG - SAMPLE LOCATION - STEM COMPLEX.DWG



Legend:

- Lead Paint Sample <LOD
- Lead Paint Sample >LOD

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

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: SAMPLE LOCATIONS
 LEVEL I

PROJECT: STEM COMPLEX
 HAZARDOUS MATERIALS SURVEYS

SCALE: 1:300

DATE: JULY 22, 2020

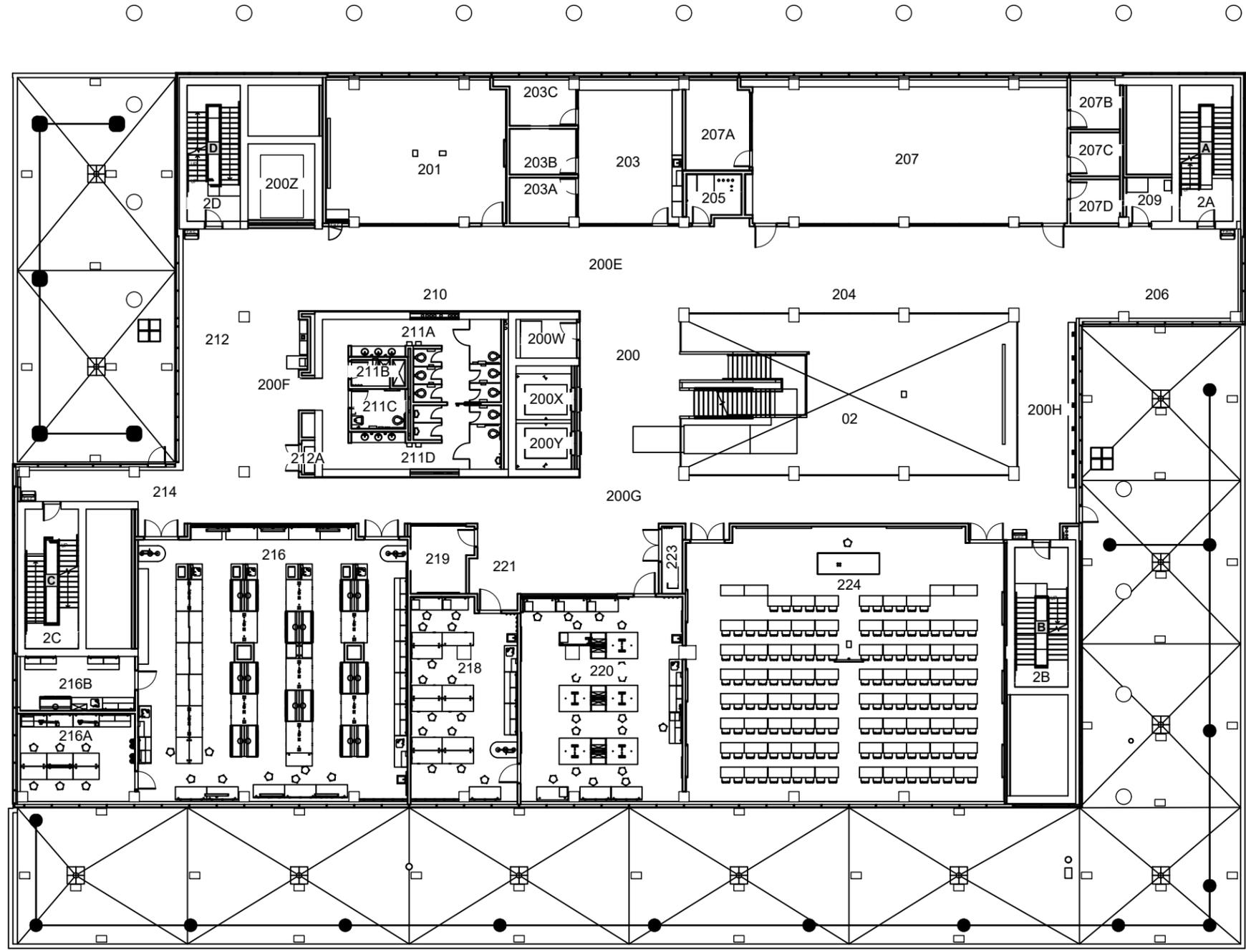
DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: AI

W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\02Z-02101-HZ PHASE 1\PROJECTS\36 150 LOUIS PASTEUR (STEM)\DRAWINGS\DWG - SAMPLE LOCATION - STEM COMPLEX.DWG



W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\02Z-02101-HZ PHASE \PROJECTS\36 150 LOUIS PASTEUR (STEM)\DRAWINGS\DWG - SAMPLE LOCATION - STEM COMPLEX.DWG

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:
 □ Lead Paint Sample <LOD
 ● Lead Paint Sample >LOD

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: SAMPLE LOCATIONS LEVEL 2

PROJECT: STEM COMPLEX HAZARDOUS MATERIALS SURVEYS

SCALE: 1:300

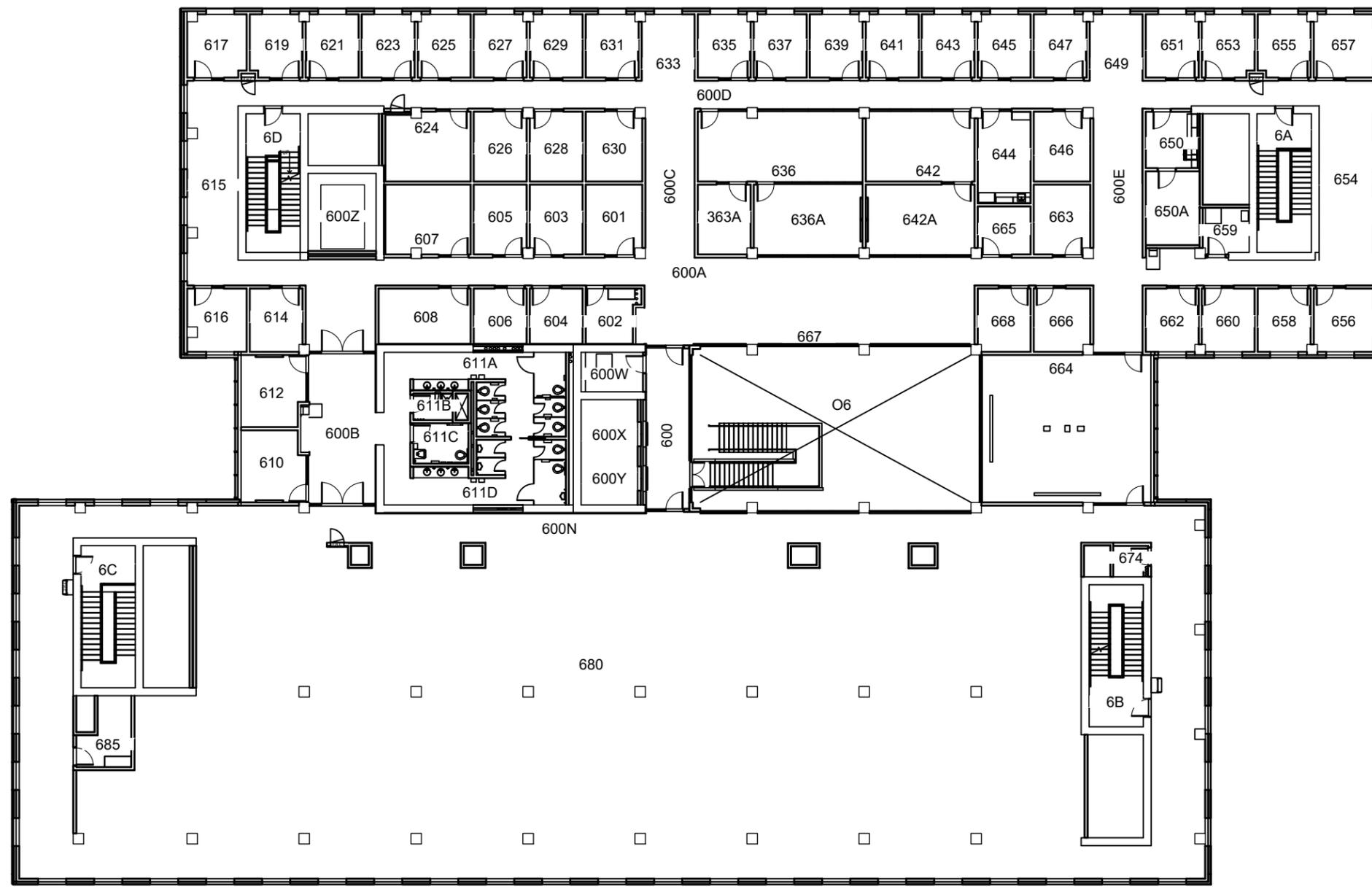
DATE: JULY 22, 2020

DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A2



W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\02Z-02101-HZ PHASE \PROJECTS\36 150 LOUIS PASTEUR (STEM)\DRAWINGS\DWG - SAMPLE LOCATION - STEM COMPLEX.DWG

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:
□ Lead Paint Sample <LOD
■ Lead Paint Sample >LOD

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: SAMPLE LOCATIONS LEVEL 6

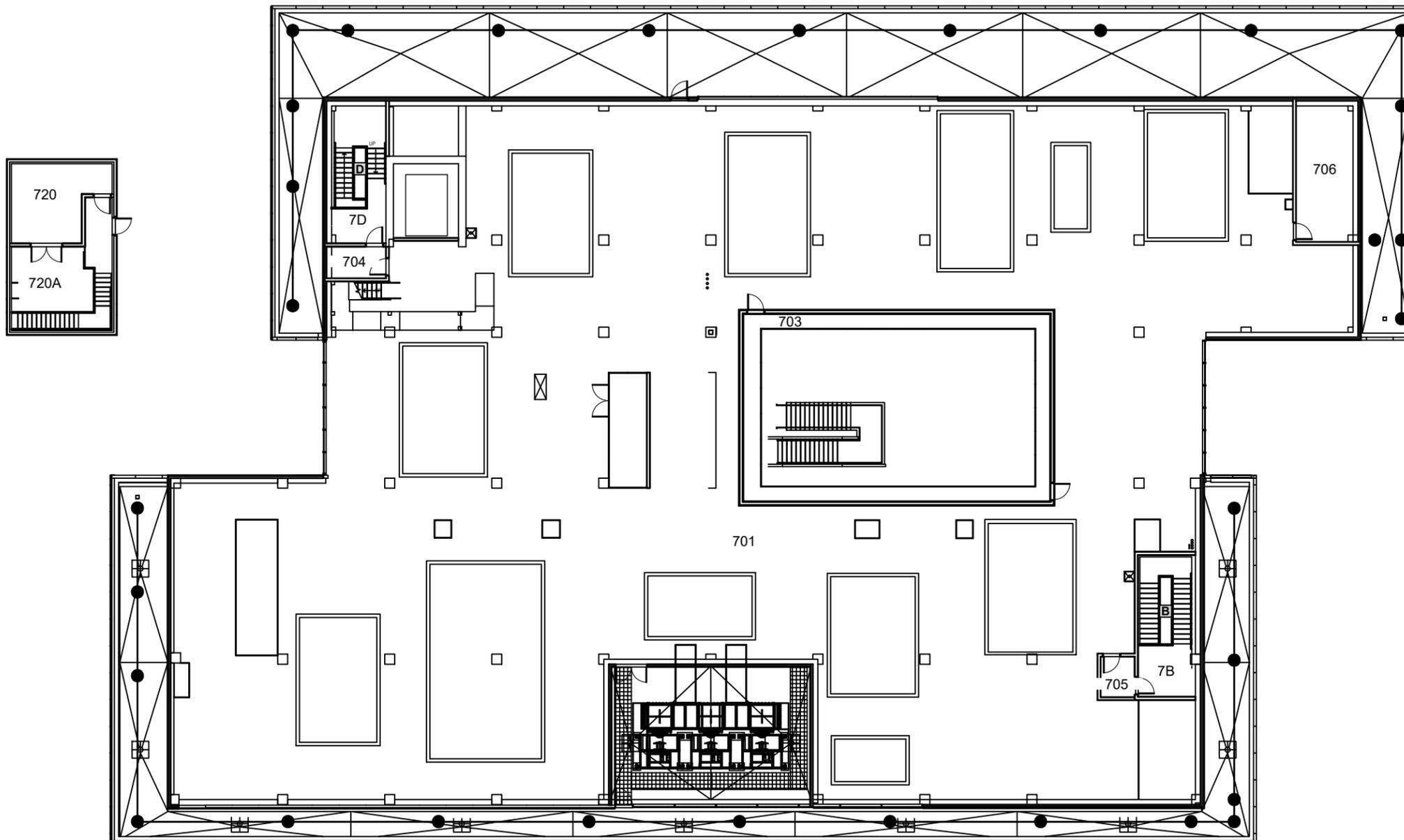
PROJECT: STEM COMPLEX HAZARDOUS MATERIALS SURVEYS

SCALE: 1:300
 DRAWN: O.B.

DATE: JULY 22, 2020
 CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A6



Legend:

- Lead Paint Sample <LOD
- Lead Paint Sample >LOD

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

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: SAMPLE LOCATIONS
 LEVEL 7

PROJECT: STEM COMPLEX
 HAZARDOUS MATERIALS SURVEYS

SCALE: 1:300

DATE: JULY 22, 2020

DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A7

W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\02Z-02101-HZ PHASE \PROJECTS\36 150 LOUIS PASTEUR (STEM)\DRAWINGS\DWG - SAMPLE LOCATION - STEM COMPLEX.DWG

