# HAZARDOUS MATERIALS SURVEY AND 2022 REASSESSMENT
# 538-540 KING EDWARD AVENUE, OTTAWA, ON


Project No.: Z2021101HZ / CCC-230252-00

Prepared for:

University of Ottawa

Prepared by:

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Date:

September 20, 2022

McINTOSH PERRY

# TABLE OF CONTENTS

# REASSESSMENT SURVEY 2022

McIntosh Perry Limited **(MPL)** was retained by the University of Ottawa, to complete a Hazardous Materials Survey for the building located at 538-540 King Edward Avenue in Ottawa, Ontario. MPL was also retained to reassess the condition of hazardous building materials found. The survey was conducted on March 3rd, 2020. The reassessment was completed on June 20th, 2022.

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 Drywall Joint Compound was observed to be in Good Condition throughout the subject building.
- ACM Plaster was observed to be in Good Condition throughout the subject building.
- Suspected ACM in Vermiculite, Brick Mortar, Concrete Block Mortar and Roofing Material were observed to be in Good Condition throughout the subject 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.
- Sample any presumed ACM prior to alteration or maintained work if presumed ACM may be disturbed by the work.
- 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.

# EXECUTIVE SUMMARY

McIntosh Perry Limited **(MPL)** was retained by the University of Ottawa, to complete a Hazardous Materials Survey for the building located at 538-540 King Edward Avenue in Ottawa, Ontario. The survey was conducted on March 3rd, 2020. **The Reassessment Survey was conducted on June 20th, 2022.**

The purpose of the survey was to determine the presence of building materials containing Designated Substances, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09.

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 |
| Plaster | Yes | Throughout Building | Chrysotile |
| Vermiculite in Plaster | Yes | Throughout Building | Suspect |
| Brick Mortar | - | Throughout Building | Suspect |
| Concrete Block Mortar | - | Throughout Building | Suspect |
| Fire Doors | - | Throughout Building | Suspect |
| Roofing Materials | - | Roof | Suspect |

**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 Equipment |
| Mercury Vapour | Specific Equipment |
| Silica | Throughout Building |
| Radioactive Materials | Specific Equipment |
| Ozone Depleting Substances | Specific Equipment |

**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 Ontario (EACO) Lead 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 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

September 20, 2022

**University of Ottawa**
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via email: joel.lajeunesse@uottawa.ca

Attention: Joel Lajeunesse, Project Manager

Re: 538-540 King Edward Avenue in Ottawa, Ontario
Hazardous Materials Survey
McIntosh Perry Limited Reference No. Z2021101HZ / CCC-230252-00

# 1.0 INTRODUCTION

In accordance with your instructions, McIntosh Perry Limited (MPL) carried out a Hazardous Materials Survey at the academic building located at 538-540 King Edward Avenue in Ottawa, Ontario. The site is situated on the west side of King Edward Avenue, south of Laurier Avenue East. The survey of the building was conducted on March 6, 2020. **The Reassessment Survey was conducted on June 20th, 2022.**

The purpose of the survey was to determine the presence of building materials containing Designated Substances, 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;
- 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 two-storey academic building with a finished attic and a basement. The subject building was constructed in 1920 and covering approximately 7,061 square feet. The subject building was observed to be of wooden beam construction with a stone and concrete foundation. The interior walls were gypsum wallboard and concrete block. Within the subject building, ceilings were observed to be either ceiling tiles, gypsum wallboard or plaster. The floors were generally covered with carpet, vinyl floor tiles, vinyl sheet flooring or hardwood flooring.

# 3.0 FINDINGS & RECOMMENDATIONS

## Designated Substances

## 3.1 Asbestos

*Findings*

A total of forty-four (44) bulk samples were collected during the survey and sent to an accredited laboratory for analysis. A summary of potential asbestos-containing samples 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 | 003 | CT (1'x1'- Scattered Pinholes) | None Detected | N/A |
| BS 1.2 | 003 | CT (1'x1'- Scattered Pinholes) | None Detected | N/A |
| BS 1.3 | 001 | CT (1'x1'- Scattered Pinholes) | None Detected | N/A |
| BS 2.1 | 012 | VFT (12"x12"-Grey w/ Grey and White) | None Detected | N/A |
| BS 2.2 | 012 | VFT (12"x12"-Grey w/ Grey and White) | None Detected | N/A |
| BS 2.3 | 012 | VFT (12"x12"-Grey w/ Grey and White) | None Detected | N/A |
| | | Mastic (Yellow) | None Detected | N/A |
| BS 3.1 | 010B | VFT (12"x12"-Orange w/ Black Marks) | None Detected | N/A |
| | | Mastic (Black) | None Detected | N/A |
| | | Leveler (Grey) | None Detected | N/A |
| | | Compound (White) | None Detected | N/A |
| BS 3.2 | 010B | VFT (12"x12"-Orange w/ Black Marks) | None Detected | N/A |
| | | Mastic (Black) | None Detected | N/A |
| | | Leveler (Grey) | None Detected | N/A |

| Sample ID | Location | Material | Type and Content | Friability |
|---|---|---|---|---|
| BS 3.3 | Room 010B | VFT (12”x12”-Orange w/ Black Marks) | None Detected | N/A |
| | | Mastic/Leveler (Grey/Black) | None Detected | N/A |
| BS 4.1 | Room 005 | Ceiling Texture Coat (White) | None Detected | N/A |
| | | Ceiling Texture Coat (Grey) | None Detected | N/A |
| BS 4.2 | Room 005 | Ceiling Texture Coat (White) | None Detected | N/A |
| | | Ceiling Texture Coat (Grey) | None Detected | N/A |
| BS 4.3 | Room 005 | Ceiling Texture Coat (White) | None Detected | N/A |
| | | Ceiling Texture Coat (Grey) | None Detected | N/A |
| BS 5.1 | Room 005 | Plaster | None Detected | N/A |
| BS 5.2 | Room 010B | Plaster (Skim Coat) | None Detected | N/A |
| | | Plaster (Base Coat) | None Detected | N/A |
| **BS 5.3** | **Room 113** | **Plaster (Joint Compound 1)** | **2% Chrysotile** | **Friable** |
| | | **Plaster (Joint Compound 2)** | **3% Chrysotile** | **Friable** |
| | | **Plaster (Drywall)** | **None Detected** | **N/A** |
| **BS 5.4** | **Room 206** | **Plaster** | **Stop Positive- Not Analyzed** | **Friable** |
| **BS 5.5** | **Room 105** | **Plaster** | **Stop Positive- Not Analyzed** | **Friable** |
| **BS 5.6** | **Room 301A** | **Plaster** | **Stop Positive- Not Analyzed** | **Friable** |
| **BS 5.7** | **Room 302** | **Plaster** | **Stop Positive- Not Analyzed** | **Friable** |
| BS 6.1 | Room 200 | VSF (Black w/Lines) | None Detected | N/A |
| BS 6.2 | Room 200 | VSF (Black w/Lines) | None Detected | N/A |
| | | Mastic (Beige) | None Detected | N/A |
| BS 6.3 | Room 200 | VSF (Black w/Lines) | None Detected | N/A |
| BS 7.1 | Room 013 | VFT (12”x12”- Brown w/ White and Grey) | None Detected | N/A |
| BS 7.2 | Room 013 | VFT (12”x12”- Brown w/ White and Grey) | None Detected | N/A |
| BS 7.3 | Room 013 | VFT (12”x12”- Brown w/ White and Grey) | None Detected | N/A |
| | | Mastic (Black) | None Detected | N/A |
| BS 8.1 | Room 001 | CT (1’x1’- Linear with Pinholes) | None Detected | N/A |
| BS 8.2 | Room 001 | CT (1’x1’- Linear with Pinholes) | None Detected | N/A |
| | | Joint Compound | None Detected | N/A |
| BS 8.3 | Room 001 | CT (1’x1’- Linear with Pinholes) | None Detected | N/A |
| BS 9.1 | Room 113 | VFT (12”x12”- Grey w/ White Markings) | None Detected | N/A |
| BS 9.2 | Room 113 | VFT (12”x12”- Grey w/ White Markings) | None Detected | N/A |
| | | Mastic (Yellow) | None Detected | N/A |

| Sample ID | Location | Material | Type and Content | Friability |
|---|---|---|---|---|
| BS 9.3 | Room 113 | VFT (12”x12”- Grey w/ White Markings) | None Detected | N/A |
| BS 10.1 | Room 112 | VFT (12”x12”- Beige w/ Light and Dark Markings) | None Detected | N/A |
| BS 10.2 | Room 112 | VFT (12”x12”- Beige w/ Light and Dark Markings) | None Detected | N/A |
| | | Mastic (Black) | None Detected | N/A |
| BS 10.3 | Room 004 | VFT (12”x12”- Beige w/ Light and Dark Markings) | None Detected | N/A |
| **BS 11.1** | **Room 012** | **Drywall Joint Compound** | **4% Chrysotile** | **-** |
| **BS 11.2** | **Room 001** | **Drywall Joint Compound** | **Stop Positive- Not Analyzed** | **-** |
| **BS 11.3** | **Room 304** | **Drywall Joint Compound** | **Stop Positive- Not Analyzed** | **-** |
| **BS 11.4** | **Room 305** | **Drywall Joint Compound** | **Stop Positive- Not Analyzed** | **-** |
| **BS 11.5** | **Room 206** | **Drywall Joint Compound** | **Stop Positive- Not Analyzed** | **-** |
| **BS 11.6** | **Room 010** | **Drywall Joint Compound** | **Stop Positive- Not Analyzed** | **-** |
| **BS 11.7** | **Room 101** | **Drywall Joint Compound** | **Stop Positive- Not Analyzed** | **-** |
| BS 12.1 | Room 200 | Texture Coat -Wall | None Detected | N/A |
| BS 12.2 | Room 200 | Texture Coat -Wall | None Detected | N/A |
| BS 12.3 | Room 200 | Texture Coat -Wall | None Detected | N/A |

N/A – Not Applicable
CT – Suspended Ceiling Tile
VFT – Vinyl Floor Tiles
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, quantities (where applicable), and recommended actions.

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

### *3.1.1 Fireproofing*

Fireproofing was not observed in the subject building.

### *3.1.2 Mechanical Pipe Insulation*

#### *3.1.2.1 Mechanical Pipe Straight Insulation*

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

#### *3.1.2.2 Mechanical Piping Elbows/Fittings Insulation*

No mechanical pipe elbow/fitting insulation was observed in the subject building.

#### *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*

No HVAC duct insulation was not observed in the subject building.

#### *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 were observed in the subject building.

### *3.1.5 Texture Finishes*

Texture coat was observed and sampled on the ceiling in Room 005 in the subject building. The laboratory analytical results of the samples collected from Room 005 indicate that this material does not contain asbestos.

Texture coat was observed and sampled on the wall in Room 200 of the subject building. The laboratory analytical results of the samples collected from Room 200 indicate that this material does not contain asbestos.

### *3.1.6 Plaster*

Ceiling/Wall plaster was observed and sampled throughout the subject building. Drywall joint compound was also noted to have been used over top of plaster as a skim coat. The laboratory analytical results of joint compound associated with the ceiling/wall plaster samples collected indicate that this material contains between **2-3% Chrysotile asbestos**. Since plaster is a homogeneous material, all areas must be treated as asbestos-containing unless additional testing confirms otherwise This material was observed to be in good condition.

It should be noted that vermiculite is present in plaster finishes Room 005. Prior to renovation/demolition, additional sampling should be completed to confirm the presence of asbestos in the vermiculite following TEM analysis and to delineate the locations of this material.

### *3.1.7 Drywall Joint Compound*

Drywall joint compound was observed and sampled throughout the subject building. The laboratory analytical results of drywall joint compound samples collected from various locations indicate that this material contains

**between 4% Chrysotile asbestos**. Since drywall joint compound is a homogeneous material, all areas must be treated as asbestos-containing unless additional testing confirms otherwise This material was observed to be in good condition.

### *3.1.8 Ceiling Tiles*

Several different ceiling tiles were observed and sampled within the subject building as follows:

- Stick-on ceiling tiles (1'x1' – Scattered Pinholes) were observed and sampled in Rooms 001 and 003. The laboratory analytical results of the collected from Rooms 001 and 003 indicate that this material does not contain asbestos.
- Stick-on ceiling tiles (1'x1' – Linear with Pinholes) were observed and sampled in Room 001. The laboratory analytical results of the samples collected from Room 001 indicate that this material does not contain asbestos.

### *3.1.9 Vinyl Floor Tiles*

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

- Vinyl floor tiles (12"x12"- Grey with Grey and White) were observed and sampled in Room 012. The laboratory analytical results of the samples collected from Room 012 indicate that this material does not contain asbestos. The associated mastic (yellow) was also determined not to contain asbestos.
- Vinyl floor tiles (12"x12"- Orange with Black Marks) were observed and sampled in Room 010B. The laboratory analytical results of the samples collected from Room 010B indicate that this material does not contain asbestos. The associated mastic/leveler (black/grey) was also determined not to contain asbestos.
- Vinyl floor tiles (12"x12"- Brown with White and Grey) were observed and sampled in Room 013. The laboratory analytical results of the samples collected from Room 013 indicate that this material does not contain asbestos. The associated mastic (black) was also determined not to contain asbestos.
- Vinyl floor tiles (12"x12"- Grey with White Markings) were observed and sampled in Room 113. The laboratory analytical results of the samples collected from Room 113 indicate that this material does not contain asbestos. The associated mastic (yellow) was also determined not to contain asbestos.
- Vinyl floor tiles (12"x12"- Beige with Light and Dark Markings) were observed and sampled in Rooms 113 and 004. The laboratory analytical results of the samples collected from Rooms 113 and 004 indicate that this material does not contain asbestos. The associated mastic (black) was also determined not to contain asbestos

### *3.1.10 Vinyl Sheet Flooring*

Vinyl sheet flooring (Black with Lines) was observed and sampled in Room 200. The laboratory analytical results of the samples collected from Room 200 indicate that this material does not contain asbestos. The associated mastic (beige) was also determined not to contain asbestos

### *3.1.11 Brick Mortar*

To avoid damage and compromising the integrity of the structure, no bulk samples of the brick mortar were collected. Prior to renovation/demolition, concrete brick mortar should be examined and tested for asbestos content. Concrete block mortar should therefore be considered to contain asbestos until bulk samples and analysis proves otherwise.

### *3.1.12 Concrete Block Mortar*

To avoid damage and compromising the integrity of the structure, no bulk samples of the concrete block mortar were collected. Prior to renovation/demolition, concrete block mortar should be examined and tested for asbestos content. Concrete block mortar should therefore be considered to contain asbestos until bulk samples and analysis proves otherwise.

### *3.1.13 Mastic*

Carpet Mastic (Yellow) was observed and sampled in Room 216 and 217. The laboratory analytical results of the samples collected from Room 216 and 217 indicate that this material does not contain asbestos.

### *3.1.14 Transite (Asbestos Cement)*

No transite materials were observed in the subject building.

### *3.1.15 Caulking*

No caulking materials were observed in the subject building.

### *3.1.16 Cementitious Coating*

No cementitious coating finishes were observed in the subject building.

### *3.1.17 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.

### *3.1.18 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*

- 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, quantities (where applicable), and recommended actions;

- Prior to renovation/demolition of materials which are assumed to be asbestos-containing (suspect materials which were not sampled, i.e., roofing materials, concrete block mortar, brick mortar 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*

A total of two (2) paint samples from the subject building were 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:**

**Lead Sampling Locations and Laboratory Results**

| Sample I.D. | Location | Material | Colour | Lead Concentration Weight by Conc. (%) |
|---|---|---|---|---|
| Pb 1 | Room 010 | Wall Paint | Brown/Orange | <0.0097% |
| Pb 2 | Room 012 | Wall Paint | Light Green | 0.028% |
| **Previously Identified Lead Paint Finishes** | | | | |
| 211-1-LBP-031507-01 | Exterior | Wall Paint | White | 0.8% |
| 211-3-LBP-031507-02 | Room 304 | Window Frames, Walls & Radiator Paint | White | <0.01% |
| 211-3-LBP-031507-03 | Room 306 | Wall/ Ceiling Paint | Grey | 0.37% |
| 211-2-LBP-031507-04 | Room 202 | Walls Paint | Grey | 0.09% |
| 211-2-LBP-031507-05 | Room 202 | Doors and Frame Paint | Rose | 0.05% |
| 211-2-LBP-031507-06 | Room 203 | Wall, Window Frame and Trim Paint | White | 0.02% |
| 211-B-LBP-031507-07 | Room 001 | Stair Railing Paint | Pink/White | 0.05v |
| 538-LP-01 | - | Walls Paint | Grey | 0.054% |
| 538-LP-02 | - | Window & Door Frame Paint | Dark Grey | 0.0082% |
| 538-LP-03 | - | Ceiling Paint | White | 0.029% |
| 538-LP-04 | - | Walls | Orange | 0.089% |

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%. These paint finishes were observed to be in good condition.

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. These paint finishes were observed to be in good condition

All remaining paints tested were below the laboratory limit of detection for lead. 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.

Laboratory certificate of analysis for the paint samples are also included in Appendix C.

### *3.2.2 Battery Packs*

MPL observed 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*

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 equipment 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 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 did not observe thermostats containing liquid mercury within 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.

### *3.3.3 Pressure Gauges and Float Switches*

MPL did not identify pressure gauges or float switches within the subject building.

*Recommendations*

Please refer to Appendix F – 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. 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 ($\alpha$-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, 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/m$^3$.

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 fluorescent lights. MPL assessed representative ballasts in the building, and these ballasts were identified as non-PCBs content. These light ballasts were observed to be manufactured by Phillips.

### *3.5.2 Transformers*

MPL did not observe any PCBs containing electrical transformers within the subject building.

*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. MPL observed equipment such as refrigerators, water fountains, water coolers, freezers, AC units etc. which contain or are suspected of containing ODSs or other halocarbons.

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

*Recommendations*

Please refer to Appendix F – 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. MPL observed smoke detectors, which contains small quantities of radioactive material.

*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 at the time of removal or replacement.

Prior to any renovations or demolition of the building, 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 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 observed 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 any water damaged was present. MPL did not find any areas with water damage.

*Recommendations*

Since no mould growth and/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 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**

Lauren Hamilton, B.Eng.
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.

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 materials 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 Designated Substances 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 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 538-540 King Edward Avenue 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 by Conestoga-Rovers & Associates (dated April 2007, reference # 045870 (81));
- Draft Report- Asbestos & Lead Paint Survey by InAIR Environmental Ltd (dated September 2019, InAIR Project Reference: 19c137); and
- Hazardous Materials Survey by CM3 Envvironmental (dated April 2019, InAIR Project Reference: TLW2500).

## 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 Designated Substances and 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 Ontario (EACO) 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 EACO 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 thermostats 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 (□-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.

## Polychlorinated Biphenyls (PCBs)

### Background Information on PCBs

Polychlorinated Biphenyls (PCBs) were commonly used as dielectric insulating fluid in electrical equipment such as transformers and capacitors, and in the fluorescent and HID lamp ballasts. The production of PCBs in the

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 of time 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 the form of hydro chlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs) ceased in Canada in 1993 as a result of their ozone-depleting characteristics. Importation of CFCs into Canada ceased in 1997 and total ban was placed on their use since 2010. The use of these materials is still permitted in existing equipment, but 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

There are two types of smoke detectors commonly found in building (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. The use of sealed radioactive material sources in fire detection systems is still permitted and regulated by the Canadian Nuclear Safety Commission (CNSC) 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 occurred. 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 Ontario (EACO) 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 (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

# EMSL Canada Inc.

22 Antares Drive Suite 102 Ottawa, ON K2E 7Z6
Phone/Fax: (343) 882-6076 / (343) 882-6077
http://www.EMSL.com / ottawalab@EMSL.com


EMSL Canada Order 672000610
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

**Attn:** Stefan Holik
McIntosh Perry Consulting Engineers Ltd
115 Walgreen Rd RR 3
Carp, ON K0A 1L0

Phone: (613) 836-2184
Fax:
Collected: 3/ 3/2020
Received: 3/26/2020
Analyzed: 4/02/2020

**Proj:** University of Ottawa 0Z2-021101 (538-540 KED) (Ottawa DSS)

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 1.1 ***Lab Sample ID:*** **672000610-0001**
***Sample Description:*** 538-540 KED/CT - Scattered pinholes with no fissures

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 95.0% | 5.0% | None Detected | |

***Client Sample ID:*** 1.2 ***Lab Sample ID:*** **672000610-0002**
***Sample Description:*** 538-540 KED/CT - Scattered pinholes with no fissures

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 95.0% | 5.0% | None Detected | |

***Client Sample ID:*** 1.3 ***Lab Sample ID:*** **672000610-0003**
***Sample Description:*** 538-540 KED/CT - Scattered pinholes with no fissures

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 95.0% | 5.0% | None Detected | |

***Client Sample ID:*** 2.1 ***Lab Sample ID:*** **672000610-0004**
***Sample Description:*** 538-540 KED/VFT - Grey with grey and white

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 2.2 ***Lab Sample ID:*** **672000610-0005**
***Sample Description:*** 538-540 KED/VFT - Grey with grey and white

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 2.3-Vinyl Floor Tile ***Lab Sample ID:*** **672000610-0006**
***Sample Description:*** 538-540 KED/VFT - Grey with grey and white

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 2.3-Mastic ***Lab Sample ID:*** **672000610-0006A**
***Sample Description:*** 538-540 KED/VFT - Grey with grey and white

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Yellow | 0.0% | 100.0% | None Detected | |

# EMSL Canada Inc.

22 Antares Drive Suite 102 Ottawa, ON K2E 7Z6
Phone/Fax: (343) 882-6076 / (343) 882-6077
http://www.EMSL.com / ottawalab@EMSL.com


EMSL Canada Order 672000610
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 3.1-Vinyl Floor Tile **Lab Sample ID:** **672000610-0007**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Red | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 3.1-Mastic **Lab Sample ID:** **672000610-0007A**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Black | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 3.1-Leveler **Lab Sample ID:** **672000610-0007B**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 10.0% | 90.0% | None Detected | |

***Client Sample ID:*** 3.1-Joint Compound **Lab Sample ID:** **672000610-0007C**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 3.2-Vinyl Floor Tile **Lab Sample ID:** **672000610-0008**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Red | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 3.2-Mastic **Lab Sample ID:** **672000610-0008A**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Black | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 3.2-Leveler **Lab Sample ID:** **672000610-0008B**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 10.0% | 90.0% | None Detected | |

***Client Sample ID:*** 3.3-Vinyl Floor Tile **Lab Sample ID:** **672000610-0009**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Red | 0.0% | 100.0% | None Detected | |

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EMSL Canada Order 672000610
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 3.3-Mastic/Leveler **Lab Sample ID:** **672000610-0009A**
***Sample Description:*** 538-540 KED/VFT - Orange with black marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray/Black | 4.0% | 96.0% | None Detected | Inseparable layers |

***Client Sample ID:*** 4.1-Layer 1 **Lab Sample ID:** **672000610-0010**
***Sample Description:*** 538-540 KED/Ceiling Texture Coat

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 4.1-Layer 2 **Lab Sample ID:** **672000610-0010A**
***Sample Description:*** 538-540 KED/Ceiling Texture Coat

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 4.2-Layer 1 **Lab Sample ID:** **672000610-0011**
***Sample Description:*** 538-540 KED/Ceiling Texture Coat

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 4.2-Layer 2 **Lab Sample ID:** **672000610-0011A**
***Sample Description:*** 538-540 KED/Ceiling Texture Coat

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 4.3-Layer 1 **Lab Sample ID:** **672000610-0012**
***Sample Description:*** 538-540 KED/Ceiling Texture Coat

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 4.3-Layer 2 **Lab Sample ID:** **672000610-0012A**
***Sample Description:*** 538-540 KED/Ceiling Texture Coat

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 5.1 **Lab Sample ID:** **672000610-0013**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Asbestos Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray/Beige/Gold | 0.0% | 100.0% | None Detected | Sample contains vermiculite which is a problem matrix; TEM with milling recommended |

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Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 5.2-Skim Coat **Lab Sample ID:** **672000610-0014**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 5.2-Base Coat **Lab Sample ID:** **672000610-0014A**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 5.3-Joint Compound 1 **Lab Sample ID:** **672000610-0015**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Tan | 0.0% | 98.0% | **2% Chrysotile** | |

***Client Sample ID:*** 5.3-Joint Compound 2 **Lab Sample ID:** **672000610-0015A**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 97.0% | **3% Chrysotile** | |

***Client Sample ID:*** 5.3-Drywall **Lab Sample ID:** **672000610-0015B**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 5.0% | 95.0% | None Detected | |

***Client Sample ID:*** 5.4 **Lab Sample ID:** **672000610-0016**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 5.5 **Lab Sample ID:** **672000610-0017**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 5.6 **Lab Sample ID:** **672000610-0018**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

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EMSL Canada Order 672000610
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 5.7 ***Lab Sample ID:*** **672000610-0019**
***Sample Description:*** 538-540 KED/Plaster

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | Positive Stop (Not Analyzed) | | |

***Client Sample ID:*** 6.1 ***Lab Sample ID:*** **672000610-0020**
***Sample Description:*** 538-540 KED/VSF - Black with lines

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 6.2-Vinyl Sheet Flooring ***Lab Sample ID:*** **672000610-0021**
***Sample Description:*** 538-540 KED/VSF - Black with lines

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 6.2-Mastic ***Lab Sample ID:*** **672000610-0021A**
***Sample Description:*** 538-540 KED/VSF - Black with lines

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Beige | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 6.3 ***Lab Sample ID:*** **672000610-0022**
***Sample Description:*** 538-540 KED/VSF - Black with lines

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 7.1 ***Lab Sample ID:*** **672000610-0023**
***Sample Description:*** 538-540 KED/VFT - Brown with white and grey

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 7.2 ***Lab Sample ID:*** **672000610-0024**
***Sample Description:*** 538-540 KED/VFT - Brown with white and grey

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown/Gray/White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 7.3-Vinyl Floor Tile ***Lab Sample ID:*** **672000610-0025**
***Sample Description:*** 538-540 KED/VFT - Brown with white and grey

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown/Gray/White | 0.0% | 100.0% | None Detected | |

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Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 7.3-Mastic **Lab Sample ID:** **672000610-0025A**
***Sample Description:*** 538-540 KED/VFT - Brown with white and grey

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Black | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 8.1 **Lab Sample ID:** **672000610-0026**
***Sample Description:*** 538-540 KED/CT - Linear with pinholes

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 95.0% | 5.0% | None Detected | |

***Client Sample ID:*** 8.2-Ceiling Tile **Lab Sample ID:** **672000610-0027**
***Sample Description:*** 538-540 KED/CT - Linear with pinholes

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 95.0% | 5.0% | None Detected | |

***Client Sample ID:*** 8.2-Joint Compound **Lab Sample ID:** **672000610-0027A**
***Sample Description:*** 538-540 KED/CT - Linear with pinholes

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 8.3 **Lab Sample ID:** **672000610-0028**
***Sample Description:*** 538-540 KED/CT - Linear with pinholes

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Brown | 95.0% | 5.0% | None Detected | |

***Client Sample ID:*** 9.1 **Lab Sample ID:** **672000610-0029**
***Sample Description:*** 538-540 KED/VFT - Grey with white marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 9.2-Vinyl Floor Tile **Lab Sample ID:** **672000610-0030**
***Sample Description:*** 538-540 KED/VFT - Grey with white marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 9.2-Mastic **Lab Sample ID:** **672000610-0030A**
***Sample Description:*** 538-540 KED/VFT - Grey with white marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Yellow | 0.0% | 100.0% | None Detected | |

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Customer PO: 0Z2-021101
Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 9.3 ***Lab Sample ID:*** **672000610-0031**

***Sample Description:*** 538-540 KED/VFT - Grey with white marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Gray/White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 10.1-Vinyl Floor Tile ***Lab Sample ID:*** **672000610-0032**

***Sample Description:*** 538-540 KED/VFT - Beige with light and dark marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Beige | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 10.1-Mastic ***Lab Sample ID:*** **672000610-0032A**

***Sample Description:*** 538-540 KED/VFT - Beige with light and dark marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Insufficient Material | |

***Client Sample ID:*** 10.2-Vinyl Floor Tile ***Lab Sample ID:*** **672000610-0033**

***Sample Description:*** 538-540 KED/VFT - Beige with light and dark marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Beige | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 10.2-Mastic ***Lab Sample ID:*** **672000610-0033A**

***Sample Description:*** 538-540 KED/VFT - Beige with light and dark marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Black | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 10.3 ***Lab Sample ID:*** **672000610-0034**

***Sample Description:*** 538-540 KED/VFT - Beige with light and dark marks

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Beige | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 11.1 ***Lab Sample ID:*** **672000610-0035**

***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | Tan | 0.0% | 96.0% | **4% Chrysotile** | |

***Client Sample ID:*** 11.2 ***Lab Sample ID:*** **672000610-0036**

***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

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Project ID: Ottawa DSS

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

***Client Sample ID:*** 11.3 ***Lab Sample ID:*** **672000610-0037**
***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 11.4 ***Lab Sample ID:*** **672000610-0038**
***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 11.5 ***Lab Sample ID:*** **672000610-0039**
***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 11.6 ***Lab Sample ID:*** **672000610-0040**
***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 11.7 ***Lab Sample ID:*** **672000610-0041**
***Sample Description:*** 538-540 KED/Drywall Joint Compound (DJC)

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | | | | Positive Stop (Not Analyzed) | |

***Client Sample ID:*** 12.1 ***Lab Sample ID:*** **672000610-0042**
***Sample Description:*** 538-540 KED/Texture Coating

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 12.2 ***Lab Sample ID:*** **672000610-0043**
***Sample Description:*** 538-540 KED/Texture Coating

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

***Client Sample ID:*** 12.3 ***Lab Sample ID:*** **672000610-0044**
***Sample Description:*** 538-540 KED/Texture Coating

| TEST | Analyzed Date | Color | Non-Asbestos Fibrous | Non-Fibrous | Asbestos | Comment |
|---|---|---|---|---|---|---|
| PLM | 4/02/2020 | White | 0.0% | 100.0% | None Detected | |

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Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

# Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Analyst(s):**

Ewa Krupinska PLM (32)
Simon Parent PLM (20)

**Reviewed and approved by:**

Simon Parent, Laboratory Manager
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government

Samples analyzed by EMSL Canada Inc. Ottawa, ON

Report amended: 04/02/202015:37:49 Replaces initial report from: 04/02/202015:34:44 Reason Code: QA\QC-Comment Change

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| | |
|---|---|
| EMSL Canada Or | 552003643 |
| CustomerID: | 55CTCS25B |
| CustomerPO: | 0Z2-021101 |
| ProjectID: | |

Attn: **Stefan Holik**
**McIntosh Perry Consulting Engineers Ltd**
**115 Walgreen Rd RR 3**
**Carp, ON K0A 1L0**

Phone: (613) 836-2184
Fax:
Received: 03/30/20 11:08 AM
Collected:

Project: **University of Ottawa 0Z2-021101 "Ottawa DSS"**

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

| *Client SampleDescription* | *Collected* | *Analyzed* | *Weight* | *RDL* | *Lead Concentration* |
|---|---|---|---|---|---|
| 1 | | 3/31/2020 | 0.2065 g | 0.0097 % wt | <0.0097 % wt |
| *552003643-0001* | Site: Brown/orange paint (Room 010)<br>Insufficient sample to reach reporting limit. | | | | |
| 2 | | 3/31/2020 | 0.0725 g | 0.028 % wt | 0.028 % wt |
| *552003643-0002* | Site: Pink paint (door) | | | | |

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 reoprt. "<" (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 04/06/2020 09:18:49

# APPENDIX D

## Site Photographs

Photo 1: Representative view finishes observed within the subject building.

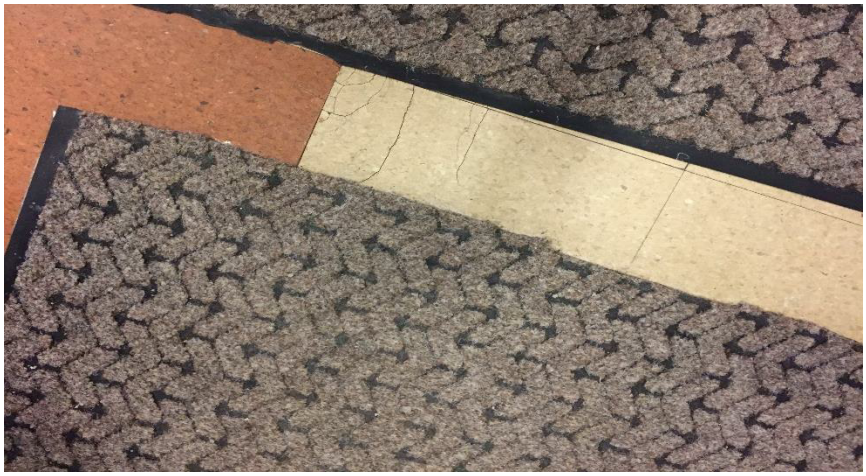


Photo 2: View of non-asbestos-containing vinyl floor tiles observed throughout the subject building.

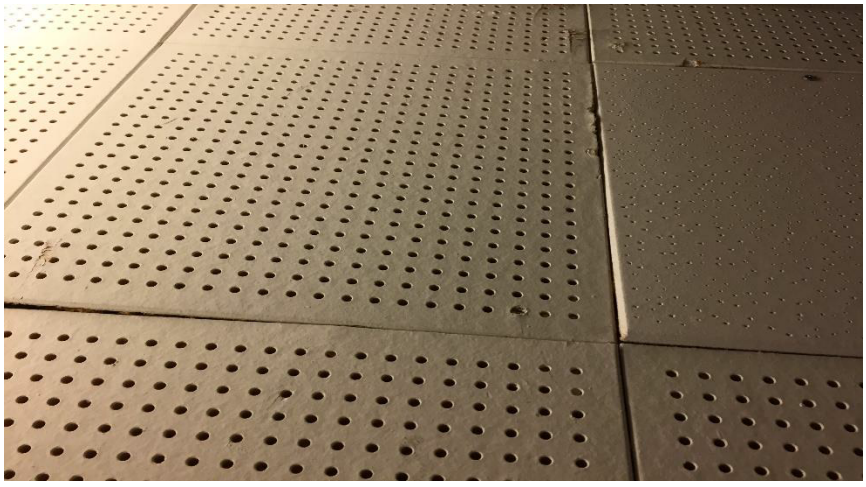


Photo 3: View of non-asbestos-containing ceiling tiles observed throughout the basement of the subject building.

Photo 4: View of lead-containing battery pack observed in emergency lights..

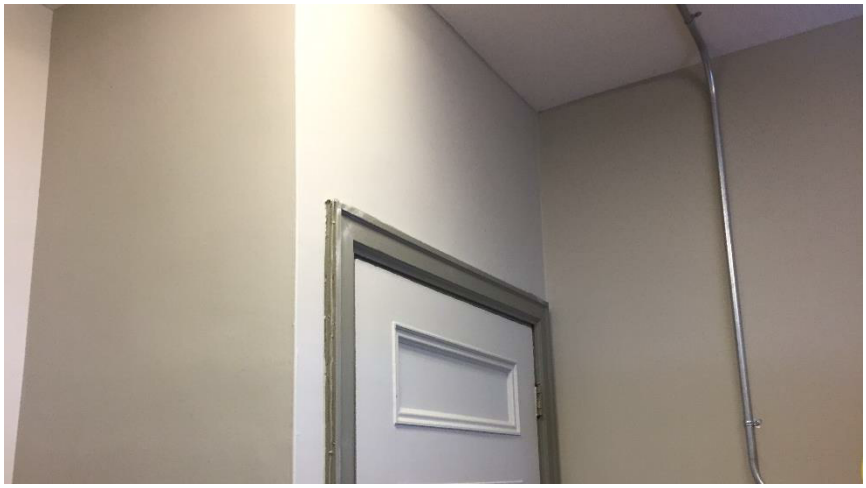


Photo 5: View of low-level leed containing paint and view of asbestos-containing drywall joint compound observed throughout the subject building.

Photo 6: Typical view of radioactive-containing smoke detectors observed throughout the subject buiding.

# APPENDIX E

## Asbestos-Containing Materials Checklists

| Floor/Level | Room | ID | Type of ACM | Description | Asbestos Confirmed/ Suspected | Friable/Non-Friable | Damaged/ Deteriorated | Accessibility | Level of Work Near Material | Approx. Quantity | Unit | Recommended Action | Estimated Abatement Cost | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | Throughout Subject Building | - | Drywall Joint Compound | White | Confirmed | - | Good Condition | Easy | Moderate | - | - | Manage in Place | | |
| All | Throughout Subject Building | - | Wall & Ceiling Plaster | White/Grey | Confirmed | Friable | Good Condition | Easy | Moderate | - | - | Manage in Place | | |
| All | Throughout Subject Building | - | Vermiculite in Plaster | White/Grey/ Gold | Suspected | Friable | Good Condition | Easy | Moderate | - | - | Manage in Place | | |
| All | Throughout Subject Building | - | Brick Mortar | Grey | Suspected | - | Good Condition | Easy | Low | - | - | Manage in Place | | |
| All | Throughout Subject Building | - | Concrete Block Mortar | Grey | Suspected | - | Good Condition | Easy | Low | - | - | Manage in Place | | |
| All | Throughout Subject Building | - | Fire Doors | N/A | Suspected | - | Good Condition | Difficult | Low | - | - | Manage in Place | | |
| Exterior | Throughout Subject Building | - | Roofing Materials | N/A | Suspected | - | Good Condition | Difficult | Low | - | - | Manage in Place | | |

# APPENDIX F

## Hazardous Materials Checklists

| Floor/Level | Location | ID | DS Type | Component | Colour | Condition | Manufacturer | Quantity # | Unit | Suspected/ Confirmed | Recommended Action | Estimated Abatemen Cost | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Room | 113 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 1 | Room | 114 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | R134a |
| 1 | Room | 115 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | R134a |
| 1 | Room | 104 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | R134a |
| 1 | Room | 102 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Room | 206 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Room | 203 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Room | 216 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Room | 214 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |

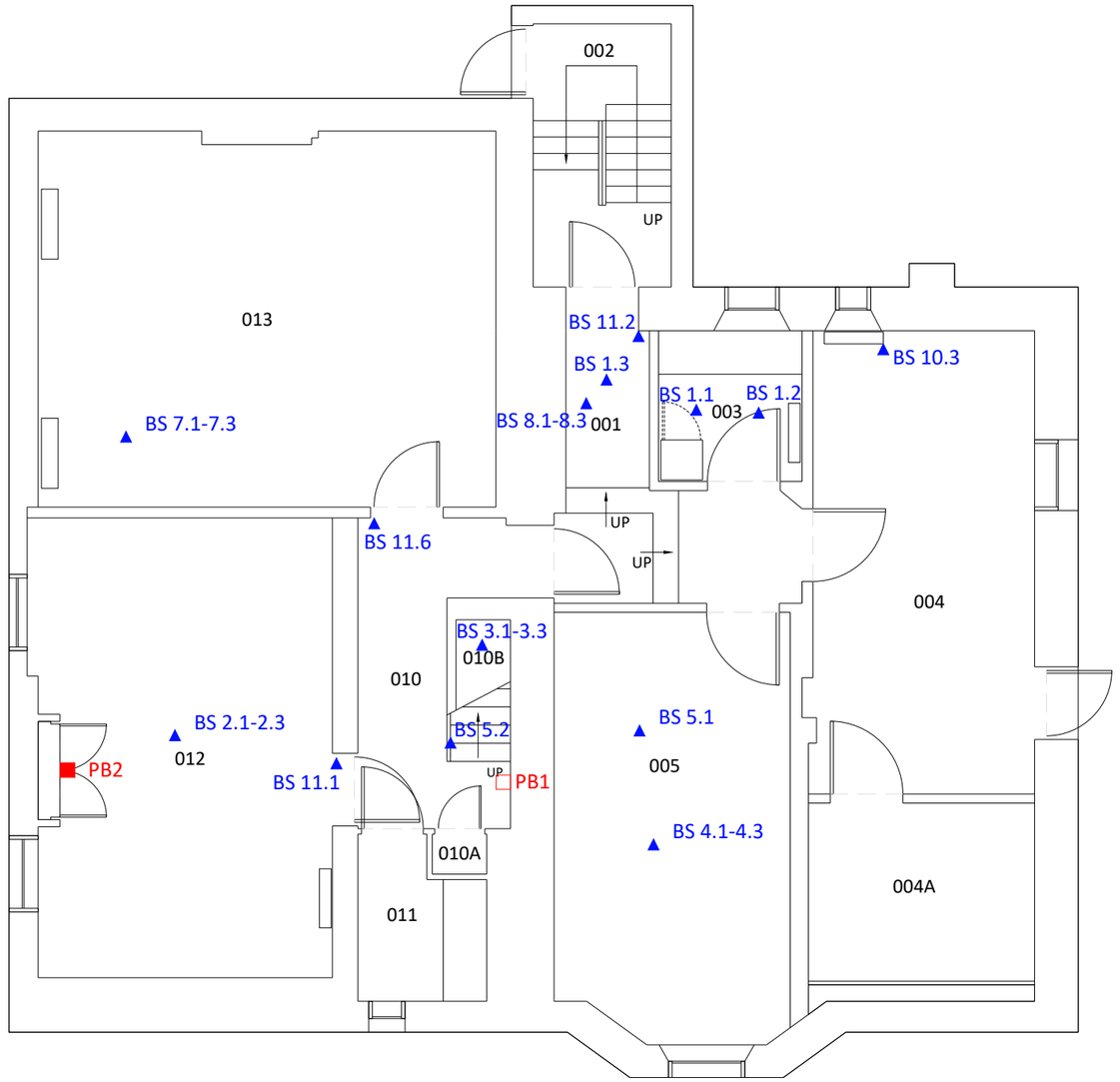
| Floor/Level | Location | ID | DS Type | Component | Colour | Condition | Manufacturer | Quantity # | Unit | Suspected/ Confirmed | Recommended Action | Estimated Abatemen Cost | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Room | 215 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Room | 213 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Room | 212 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 2 | Wall | 202 | Lead | Wall Paint | Grey | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| 2 | Room | 202 | Lead | Door Frame Paint | Rose | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| 2 | Room | 203 | Lead | Wall Paint | White | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | Wall, Window Frame and Trim Paint |
| 3 | Room | 303 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 3 | Room | 305 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| 3 | Room | 306 | Lead | Wall/Ceiling Paint | Grey | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| All | Throughout the Subject Building | - | Radioactive Materials | Smoke Detector | N/A | Good Condition | N/A | - | - | Confirmed | Manage in Place | | |

| Floor/Level | Location | ID | DS Type | Component | Colour | Condition | Manufacturer | Quantity # | Unit | Suspected/ Confirmed | Recommended Action | Estimated Abatemen Cost | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | Throughout the Subject Building | - | Lead | Battery Pack | N/A | Good Condition | N/A | - | - | Confirmed | Manage in Place | | |
| All | Throughout the Subject Building | - | Mercury | Fluorescent Light Tubes | N/A | Good Condition | Unknown | - | - | Confirmed | Manage in Place | | |
| Basement | Room | 004 | Ozone Depleting Substances (ODS) | Refrigerator | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| Basement | Room | 004 | Ozone Depleting Substances (ODS) | Water Fountain | N/A | Good Condition | Haier | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| Basement | Room | 13 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| Basement | Room | 12 | Ozone Depleting Substances (ODS) | Air Conditioning Unit | N/A | Good Condition | Unknown | 1 | C | Confirmed | Manage in Place | | Refrigerant Unknown |
| Basement | Room | 001 | Lead | Stair Railing | Pink/White | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| Basement | Room | 12 | Lead | Wall Paint | Light Green | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| Exterior | - | | Lead | Wall Paint | White | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| All | Throughout the Subject Building | - | Lead | Wall Paint | Grey | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| All | Throughout the Subject Building | - | Lead | Door Frame Paint | Dark Grey | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | Window and Doorframe Paint |

| Floor/Level | Location | ID | DS Type | Component | Colour | Condition | Manufacturer | Quantity # | Unit | Suspected/ Confirmed | Recommended Action | Estimated Abatemen Cost | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | Throughout the Subject Building | - | Lead | Ceiling Paint | White | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |
| All | Throughout the Subject Building | - | Lead | Wall Paint | Orange | Good Condition | N/A | Throughout | - | Confirmed | Manage in Place | | |

# APPENDIX G

## Site Sampling & Location Plans




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

**Note:**

**ACM plaster and drywall with ACM joint compound is present throughout**

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: HAZARDOUS MATERIALS SURVEY
538-540 KING EDWARD, OTTAWA, ON

TITLE: MASTER DRAWING
LEVEL 00
SAMPLE LOCATION

SCALE: 1:100

DATE: JUNE 15, 2020

DRAWN: D.B

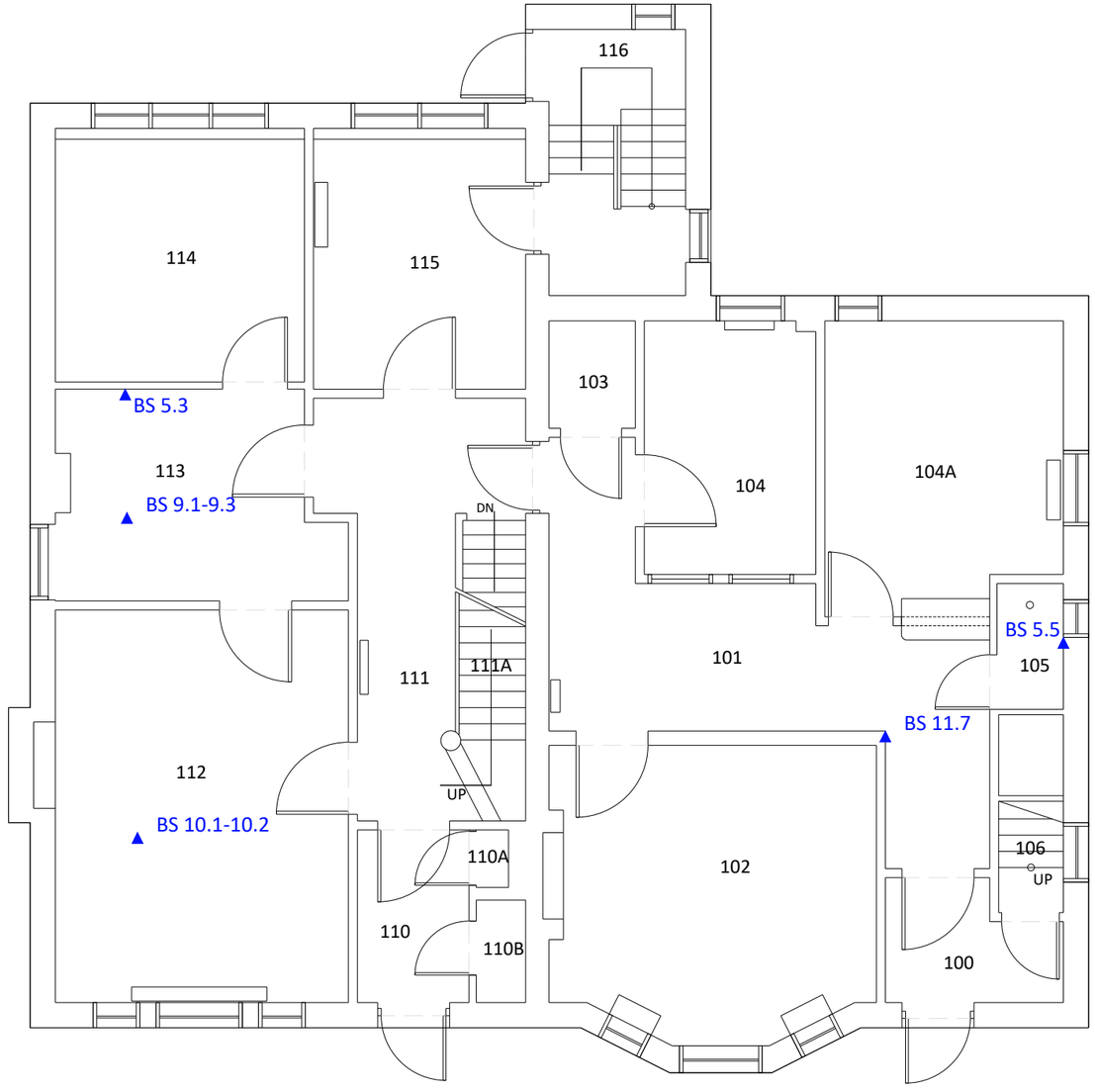
CHECKED: M.M.

| REV. NO. | DESCRIPTION | DATE | BY | APPD. |
|---|---|---|---|---|

DRAWING NUMBER: A-00

REV.:

W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\0Z2-02110-HZ PHASE IV\PROJECTS\14 538-540 KING EDWARD\DRAWINGS\DWG - SAMPLE LOCATIONS - 538-540 KING EDWARD.DWG






McINTOSH PERRY
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Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com



**Legend:**

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

**Note:**

**ACM plaster and drywall with ACM joint compound is present throughout**

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: HAZARDOUS MATERIALS SURVEY
538-540 KING EDWARD, OTTAWA, ON

TITLE: MASTER DRAWING
LEVEL 01
SAMPLE LOCATION

SCALE: 1:100

DATE: JUNE 15, 2020

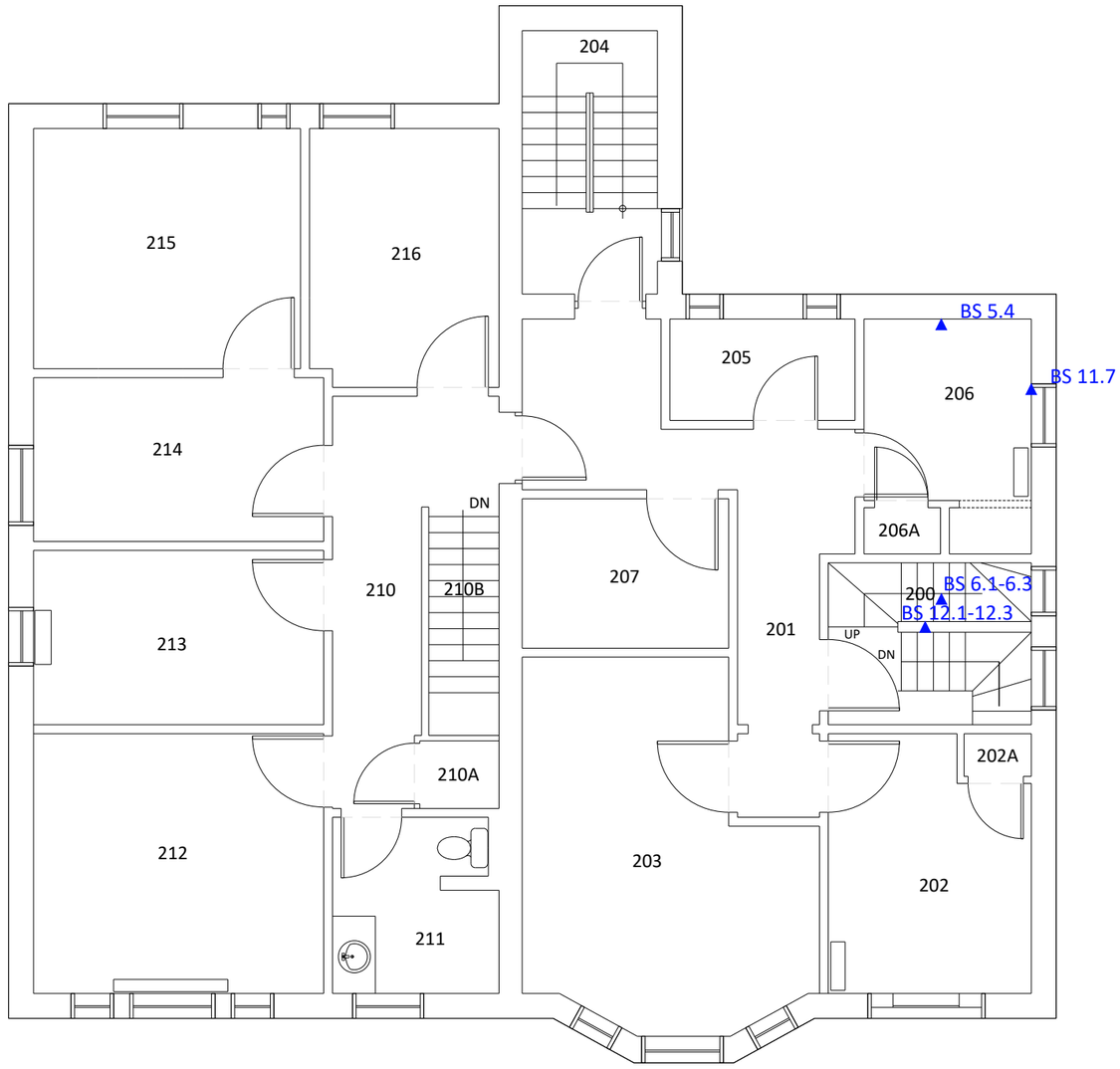
DRAWN: D.B

CHECKED: M.M.

| REV. NO. | DESCRIPTION | DATE | BY | APPD. |
|---|---|---|---|---|
| | | | | |

DRAWING NUMBER: A-01

REV.:




**Legend:**

▲ Asbestos Bulk Sample
□ Lead Paint Sample <LOD
■ Lead Paint Sample >LOD

**Note:**

**ACM plaster and drywall with ACM joint compound is present throughout**

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



CLIENT: UNIVERSITY OF OTTAWA

PROJECT: HAZARDOUS MATERIALS SURVEY
538-540 KING EDWARD, OTTAWA, ON

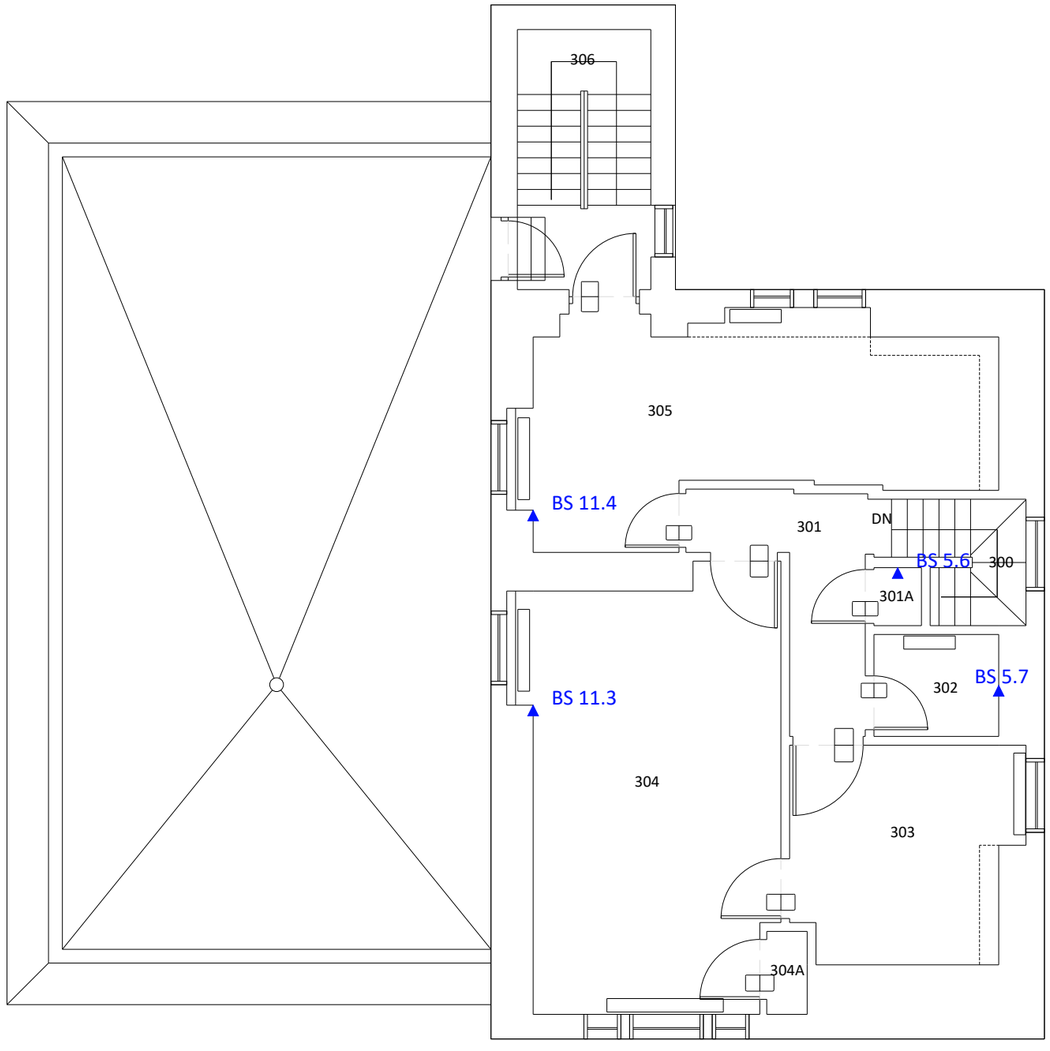
TITLE: MASTER DRAWING
LEVEL 02
SAMPLE LOCATION

SCALE: 1:100
DATE: JUNE 15, 2020
DRAWN: D.B
CHECKED: M.M.

| REV. NO. | DESCRIPTION | DATE | BY | APPD. |
|---|---|---|---|---|

DRAWING NUMBER: A-02
REV.:

W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\022-02110I-HZ PHASE I\PROJECTS\14 538-540 KING EDWARD\DRAWINGS\DWG - SAMPLE LOCATIONS - 538-540 KING EDWARD.DWG




**Legend:**

▲ Asbestos Bulk Sample
□ Lead Paint Sample <LOD
■ Lead Paint Sample >LOD

**Note:**

**ACM plaster and drywall with ACM joint compound is present throughout**

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



CLIENT: UNIVERSITY OF OTTAWA

PROJECT: HAZARDOUS MATERIALS SURVEY
538-540 KING EDWARD, OTTAWA, ON

TITLE: MASTER DRAWING
LEVEL 03
SAMPLE LOCATION

SCALE: 1:100

DATE: JUNE 15, 2020

DRAWN: D.B

CHECKED: M.M.

| REV. NO. | DESCRIPTION | DATE | BY | APPD. |
|---|---|---|---|---|
| | | | | |

DRAWING NUMBER: A-03

REV.:

W:\PROJECTS\OTTAWA\2020\HAZARDOUS - DESIGNATED SUBSTANCES\022-02101-HZ PHASE I\PROJECTS\14 538-540 KING EDWARD\DRAWINGS\DWG - SAMPLE LOCATIONS - 538-540 KING EDWARD.DWG