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PRE-RENO
DESIGNATED SUBSTANCE SURVEY

Partial Roof Replacement
Leaside Gardens Memorial Arena
1073A Millwood Road, Toronto, ON

Prepared for:
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Project No. FE 23-12974

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EXECUTIVE SUMMARY

Fisher Engineering Limited ('Fisher') was retained by Peter T. Mitches & Associates Limited, to carry out a pre-renovation Designated Substances Survey (DSS) for partial roof replacement project for the Leaside Memorial Gardens Arena, located at 1073A Millwood Road, Toronto, Ontario (hereinafter referred to as the "Site").

The scope of the DSS consisted of a review of existing environmental reports (where available); visual inspection for the presence of designated substances within the scope of the work areas; collection and analysis of the materials suspected to contain hazardous building materials, particularly asbestos and lead; and to provide recommendations for the safe handling or abatement of these materials prior to any renovation work. The fieldwork was conducted by Mr. Muhammad Junayed, on April 28, 2023.

A summary of the designated substances identified during the survey is presented below:

Asbestos

Sampling was conducted of building materials which were suspected to contain asbestos and expected to be impacted by planned construction activities. A total of fifteen (15) bulk samples were collected and submitted to Fisher Environmental Laboratories for Polarized Light Microscopy (PLM) analysis, as outlined in NIOSH Method 9002

- Asbestos was not found in any of the samples collected for analysis, as part of this survey.
- The planned renovation activities do not require any prior asbestos abatement procedures.

Lead

- Based on current Site observations, no materials suspected to contain lead which would be impacted by planned renovation activities were observed in the project scope area.
- Therefore, the planned renovation activities do not require any prior lead abatement procedures.

Mercury

- Based on current Site observations, no materials suspected to contain Mercury which would be impacted by planned renovation activities were observed in the project scope area.
- No immediate recommendations are warranted with regard to mercury.

Silica

- Crystalline silica is a constituent of all concrete and masonry products at the Site.
- Renovation works that are likely to generate silica-containing dust shall be carried out in accordance with the following regulations and guidelines:
    - Guideline: Silica on Construction Projects (issued by Ontario Ministry of Labour);
    - Designated Substances Regulation, O. Reg. 490/09; and
    - Regulation for Construction Projects, O. Reg. 213/91.

Other Designated Substances

- The other designated substances (acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride) would not be expected to be present at the Site and were not observed during the current survey.
- No recommendations are warranted with regard to these other designated substances.

1.0. INTRODUCTION

Fisher Engineering Limited ('Fisher') was retained by Peter T. Mitches & Associates Limited, to carry out a pre-renovation Designated Substances Survey (DSS) for partial roof replacement project for the Leaside Memorial Gardens Arena, located at 1073A Millwood Road, Toronto, Ontario (hereinafter referred to as the “Site”).

The scope of the DSS consisted of a review of existing environmental reports (where available); visual inspection for the presence of designated substances within the scope of the work areas; collection and analysis of the materials suspected to contain hazardous building materials, particularly asbestos and lead; and to provide recommendations for the safe handling or abatement of these materials prior to any renovation work.

The assessment scope did not include the entire roof. Rather, the assessment was limited to areas where renovation activities are proposed as outlined on provided drawings on April 5, 2023. The fieldwork was conducted by Mr. Muhammad Junayed, on April 28, 2023.

The following work areas were included in the current survey:

- ✓ Cut and remove core sample for Roof #4, west side;
- ✓ Cut and remove core sample for Roof #2;

DSS reports are required prior to any construction, demolition or restoration project that can take place in Ontario. As per Section 30 of the Ontario Occupational Health and Safety Act (OHSA), designated substances and other potentially hazardous building materials must be identified prior to any work being done that may disturb these materials and result in unnecessary exposure of workers and building occupants. The designated substances include:

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

2.0. METHODOLOGY

Fisher followed the protocols outlined in Ontario OHSA for collecting and analyzing bulk samples of materials suspected to contain asbestos or lead. Visual assessment of the material was the

primary method of identification with occasional physical contact to collect bulk samples or examine for underlying layers.

Representative bulk samples were collected of materials suspected of containing asbestos or lead. The tools used by the investigator to collect the bulk samples were cleaned after each sample was collected to avoid cross-contamination. Samples were placed in plastic sealable containers, marked with a unique sample number and transported to an independent accredited laboratory for analysis.

Where applicable, samples of suspect materials were collected to establish asbestos or lead content. Samples were grouped according to the similarity of appearance ("homogeneous" materials). The frequency at which the samples were collected was sufficient to obtain a general representation of the presence of these materials at the Site. Samples collected are presumed to be representative of the respective building materials in place at the Site. However, due to potential past renovations, alterations, repairs, or phases of construction, individual materials may not be representative of the samples collected.

The laboratory certificate of analysis is included in Appendix A. Site plans to indicate the project scope of work areas and bulk sample locations are included in Appendix B. Representative photos of Site conditions encountered at the time of the current survey are included in Appendix C.

3.0. DOCUMENT AND REPORT REVIEW

A document review was conducted to assist in understanding the scope of work. This included a review of the drawings design package (Project No. 6490/Z62) provided on April 5, 2023, for the proposed Partial Roof Replacement project prepared by Peter T. Mitches & Associates Limited.

As part of this survey, the following reports were reviewed:

- Roof Condition Assessment Project, 1073 Millwood Road, completed by Tri-Tech Pinnacle., dated September 21, 2022, Report No. FE 221273.

The findings from the previous report are discussed in Section 4.0 of this report.

4.0. FINDINGS

Asbestos-Containing Materials

Sampling was conducted of building materials which were suspected to contain asbestos and expected to be impacted by planned construction activities. A total of fifteen (15) bulk samples were collected and submitted to Fisher Environmental Laboratories for Polarised Light Microscopy (PLM) analysis, as outlined in NIOSH Method 9002. The results of the PLM analysis are summarized in Table 1, below.

Table 1 - Summary of Bulk Asbestos Sample Analysis (Polarised Light Microscopy)

Sample No.	Sample Location	Sample Description	Asbestos Content (% by Weight/Type)
23-1163-01 to 03	Roof # 2	Roof Membrane, along the Periphery Wall	None Detected
23-1163-04 to 06	Roof # 2	Sealant	None Detected
23-1163-07 to 09	Roof # 2	Roof Core Samples (Roofing Material)	None Detected
23-1163-10 to 12	Roof #4, West Side	Caulking: Brown	None Detected
23-1163-13 to 15	Roof #4, West Side	Roof Core Samples (Roofing Material)	None Detected

Ontario Regulation 278/05 - Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05) defines an “asbestos-containing” material as that with an asbestos content equal to or greater than 0.5% by weight.

Based on the laboratory analysis by the PLM method, asbestos was not found in any of the collected samples.

In addition to the above findings and reviewing of the previous survey reports for the Site, the following observations were noted.

- ☐ <u>Roof level 2: Multi-ply Roofing Felts in Asphalt (BUR)</u>

Roof level is approximately 15 years old and appears to be in fair/poor condition.

The roofing assembly is:

- ✓ Pea gravel in asphalt
- ✓ 4 Ply BUR (good adhesion)
- ✓ 3" Polyisocyanurate Insulation
- ✓ 2 Ply #15 Felts
- ✓ Wood Deck (no structural slope)

- ☐ <u>Roof level 4: Multi-ply Roofing Felts in Asphalt (BUR)</u>

Roof level appears to be 20+ years old and in very poor condition.

The roofing assembly is:

- ✓ Pea gravel in asphalt

- ✓ 4 Ply BUR (good adhesion)
- ✓ 2" Fibreboard Insulation
- ✓ Kraft Paper Vapour Retarder
- ✓ Metal Roof Deck (3/12 pitch)

☐ Fiberglass insulation was observed on the rooftop HVAC duct system, this material is non-asbestos-containing.

☐ Tan and clear sealant was observed on the duct work; this material is made of silicone and is not considered as an asbestos-containing material.

☐ Roof sample locations were patched upon completion of the roof core sampling.

Based on the findings of the current conducted within the scope of the work areas, asbestos was not identified in the following building materials:

- Roofing material in all the layers of Roof # 2
- Roofing material in all the layers of Roof # 4
- Roof Membrane
- Brown caulking around the roof edge

Lead-Containing Materials

Based on current Site observations, no materials suspected to contain lead which would be impacted by planned renovation activities were observed in the project scope area. Therefore, the planned renovation activities do not require any prior lead abatement procedures.

Other Designated Substances

During the current survey, no sampling for mercury was conducted. No building materials or components suspected to contain mercury were noted during the building survey.

Crystalline silica is a constituent of all concrete and masonry products present at the Site. While the cutting, grinding, or demolition of materials containing silica is not anticipated at the Site, these activities should be completed in accordance with Ontario MOL Guidelines for Silica on Construction projects. Specifically, the Guideline prescribes respiratory protection, site isolation, and the use of wetting to control dust emissions during the cutting, grinding, drilling, or demolition of silica-containing materials. Please refer to the Guideline for details concerning Silica on Construction Projects.

No other designated substances or other potentially hazardous building materials were identified in the proposed project scope areas. If additional suspected designated substances or other potentially hazardous building materials not identified in this report pertaining to the Site are discovered, work should be stopped and the material(s) in question should be sampled for determination of content.

5.0. RECOMMENDATIONS

Based on the observations and findings outlined above, Fisher recommends are as follows:

Asbestos:

- Asbestos was not found in any of the samples collected and analyzed.
- The planned renovation activities do not require asbestos abatement procedures.

Lead:

- Based on current Site observations, no materials suspected to contain lead which would be impacted by planned renovation activities were observed in the project scope area.
- The planned renovation activities do not require lead abatement procedures.

Mercury:

- No immediate recommendations are warranted with regard to mercury.

Silica:

- Renovations and/or demolition operations that are likely to generate silica-containing dust shall be carried out in accordance with the following requirements:
    - Guideline: Silica on Construction Projects (issued by Ontario MOL);
    - Designated Substances Regulation, O. Reg. 490/09; and
    - Regulation for Construction Projects, O. Reg. 213/91.

6.0. LIMITATIONS

Fisher Engineering Limited accepts responsibility for the competent performance of its duties in executing this assignment within the normal standards of the profession, but disclaims responsibility for consequential damages, if any.

The scope of the survey is based on prior agreement with the client, and the rationale given in this report. The building survey findings rely on the professional interpretation of selective sampling and analysis. Sample analysis results have been applied to homogenous materials in unsampled locations; it was not within the scope of work to carry out an exhaustive sampling and analysis program.

This report was prepared for Peter T. Mitches & Associates Limited and the City of Toronto. The scope of services performed may not be appropriate for the purposes of other users, and any use or reuse of this document or its findings or recommendations represented herein is at the sole risk of any other user.

We trust that the information provided in the report meets your current requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Prepared by:

Muhammad Junayed, B.Sc., EP
Project Manager

Reviewed by:

LICENSED PROFESSIONAL ENGINEER
D. A. FISHER
PROVINCE OF ONTARIO

David A. Fisher, B.A.Sc., C.Chem., P.Eng.
Principal

APPENDIX A – LABORATORY CERTIFICATE OF ANALYSIS

FISHER ENVIRONMENTAL LABORATORIES

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Client: Peter T. Mitches & Associates Limited
Address:

Tel.:
E-mail:
Attn:

F.E. Job #: 23-1163
Project Name: DSS
Project ID: FM-P 23-12974
Date Sampled: 28-Apr-2023
Date Received: 2-May-2023
Date Reported: 9-May-2023
Location: 1073 Millwood Road

Certificate of Analysis

Analysis Requested:	Asbestos by PLM
Sample Description:	15 Bulk Sample(s)

Client Sample ID	Lab Sample ID	Sample Matrix	Fibre Type	Asbestos Content
1A - Roof Membrane, Roof #2	23-1163-1	Roof		Not Detected
1B - Roof Membrane, Roof #2	23-1163-2	Roof		Not Detected
1C - Roof Membrane, Roof #2	23-1163-3	Roof		Not Detected
2A - Sealant, Roof #2	23-1163-4	Sealant		Not Detected
2B - Sealant, Roof #2	23-1163-5	Sealant		Not Detected
2C - Sealant, Roof #2	23-1163-6	Sealant		Not Detected
3A - Roofing Material, Roof #2	23-1163-7	Roof		Not Detected
3B - Roofing Material, Roof #2	23-1163-8	Roof		Not Detected
3C - Roofing Material, Roof #2	23-1163-9	Roof		Not Detected

Results relate only to the items tested

Certificate of Analysis

Analysis Requested:	Asbestos by PLM
Sample Description:	15 Bulk Sample(s)

Client Sample ID	Lab Sample ID	Sample Matrix	Fibre Type	Asbestos Content
4A - Caulking Brown, Roof #4	23-1163-10	Caulking		Not Detected
4B - Caulking Brown, Roof #4	23-1163-11	Caulking		Not Detected
4C - Caulking Brown, Roof #4	23-1163-12	Caulking		Not Detected
5A - Roofing Material, Roof #4	23-1163-13	Roof		Not Detected
5B - Roofing Material, Roof #4	23-1163-14	Roof		Not Detected
5C - Roofing Material, Roof #4	23-1163-15	Roof		Not Detected

Fisher Environmental Laboratories (Lab ID #: 2745) is accredited by CALA (Canadian Association for Laboratory Accreditation Inc.) for asbestos analysis by PLM.

ANALYTICAL METHOD:

Asbestos has been done in accordance with normal professional standard using the following Fisher Environmental Lab Method: Asbestos by PLM (Polarized Light Microscope) F-26, Rev.2.2.

Authorized by:_____

Roger Lin, Ph. D., C. Chem.
Laboratory Manager

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Ronggen (Roger) Lin
CHEMIST

Results relate only to the items tested

APPENDIX B – SITE PLANS

Legend

● Asbestos Sample Location

Figure 1

LOCATION:

1073 Millwood Road,
Toronto, Ontario

BUILDING NAME:

Leaside Gardens Memorial Arena

Roof Plan
Asbestos Sample Location

CLIENT:
Peter T. Mitches & Associates Limited

PROJECT NUMBER:	FE 23-12974	DATE:	May 2023	DRW BY:	DC
CAD FILE:	FIG1	SCALE:	Not to Scale	CHK BY:	MJ

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APPENDIX C – SITE PHOTOGRAPHS

Picture 1: View of the Level # 2 Roof.

Picture 2: View of the Level # 4 Roof.