

STRUCTURAL ENGINEERING REPORT

Fwd: 48 Wellington Street, Port Hope1 message

Good Day

I attended the above-noted site location on February 26, 2019 to assess the condition of the remaining building components (foundation and one floor frame). The building was previously demolished down to the existing level following a significant fire occurrence.

Temporary fencing remained in place along the perimeter of the site. The building envelope was enclosed with plywood sheathing and a moisture barrier. Access to the basement level was available via the vestibule on the north side of the building. Temporary heat and lighting was in place on the basement level.

Completed remediation of water damage and smoke contamination to the structural framing elements, as well as removal of hazardous materials, was evident.

The 1.1 metre high concrete block foundation walls were generally intact, with the exception of the following observations:

- Inward deflection of top of wall at various locations
- Horizontal and stepped cracks at several locations

The above-noted damage was considered to be related to frost exposure since the loss occurrence. The above-noted items would require localized repair to accommodate building reconstruction. Impact tests indicated the concrete blocks were generally in sound condition. Regularly spaced anchor bolts were present in the top of the foundation walls. The concrete slab-on-grade was in satisfactory condition. Minor cracks were noted in the concrete slab-on-grade at isolated locations.

The 1.22 metre high wood-framed exterior walls on top of the concrete block foundation walls were notably out of plumb. The top of the walls were leaning out relative to the bottom of the walls. The anchor bolts projecting from the foundation walls passed through the bottom plates of the wood-framed walls but no bolts were present. A direct connection was not present between the wood-framed wall and the foundation wall. Based on the aged appearance of the anchor bolts and the holes in the wall bottom plates, the above-noted condition was considered to be a deficiency in the original construction of the building. The exterior walls would require re-setting to plumb alignment in order to accommodate building reconstruction.

The floor frame was generally in satisfactory condition. The floor frame was slightly crowned along the east-west centreline. Minor damage was noted to floor joists at various locations. The damage included cracks and holes for services. Based on its aged appearance, the aforementioned damage was considered to have pre-existed the loss occurrence. The damage may be addressed in conjunction with building reconstruction.

The attached drawing summarizes the above-noted observations regarding the remaining building structure. I have also attached a series of photographs to illustrate my observations.

I trust that this summary is adequate for your requirements. Should you have any questions regarding this report, please give contact me at your convenience.

Regards,

Roar Engineering

Michael Ropret, P.Eng.

647-964-8565 (mobile)

AVIS: Ce courriel privilégié et confidentiel est destiné à la seule personne ou entité à laquelle il est adressé. Pour toute autre personne, toute action prise en rapport à ce courriel ainsi que toute lecture, reproduction, transmission et/ou divulgation d'une partie ou de l'ensemble de celui-ci est interdite. Si vous n'êtes pas la personne autorisée à recevoir ce courriel, S.V.P. le retourner à l'expéditeur et le détruire. Bien que ce courriel ait été traité contre les virus, il est de la responsabilité du destinataire de s'assurer que l'envoi en est exempt. Nos communications avec vous peuvent contenir des renseignements confidentiels ou protégés par le secret professionnel. Si vous désirez que nous communiquions avec vous par un autre moyen de transmission que le courrier électronique ordinaire non sécurisé, veuillez nous en aviser.

NOTICE: This privileged and confidential email is intended only for the individual or entity to whom it is addressed. With regard to all others, any action related with this email as well as any reading, reproduction, transmission and/or dissemination in whole or in part of the information included in this email is prohibited. If you are not the addressee, immediately return the email to sender prior to destroying all copies. Even if this email is believed to be free from any virus, it is the responsibility of the recipient to make sure that it is virus exempt. Our communications to you may contain confidential information or information protected under solicitor-client privilege. Please advise if you wish us to use a mode of communication other than regular, unsecured e-mail in our communications with you.

FOUNDATION AND FRAME PHOTO PRESENTATION

Roar File #18R05058

48 WELLINGTON STREET
PORT HOPE, ONTARIO





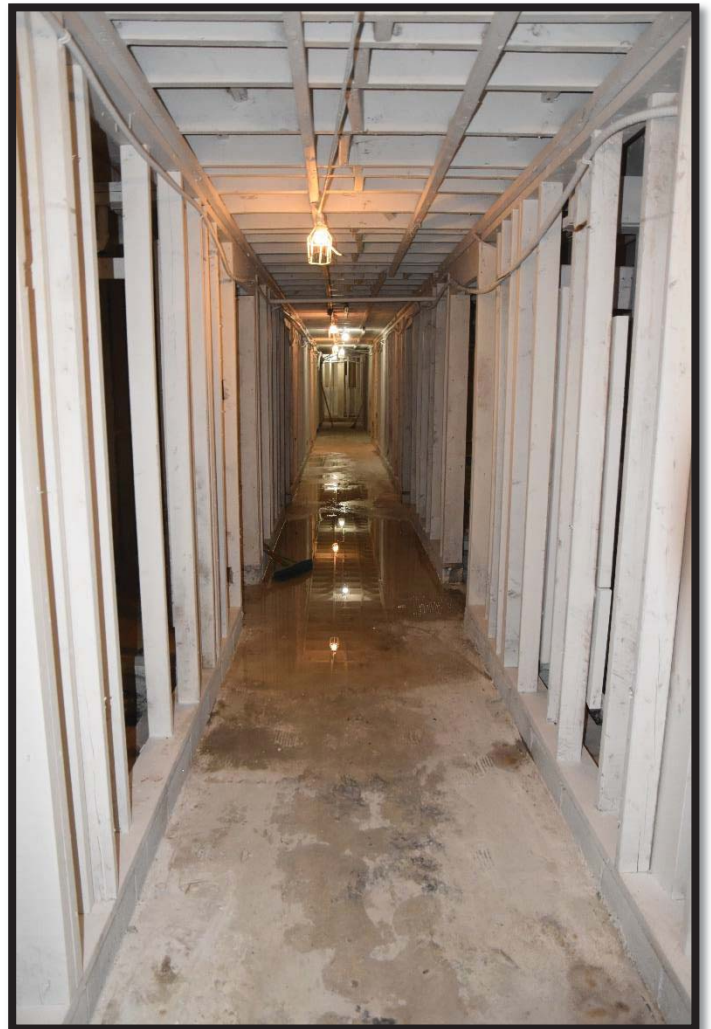
1. Remaining portion of building following demolition.



2. Building access.



3. Temporary heat in building.



4. Remediated framing.



5. Structural elements remediated for smoke contamination and water damage.



6. Remediated wood framing.



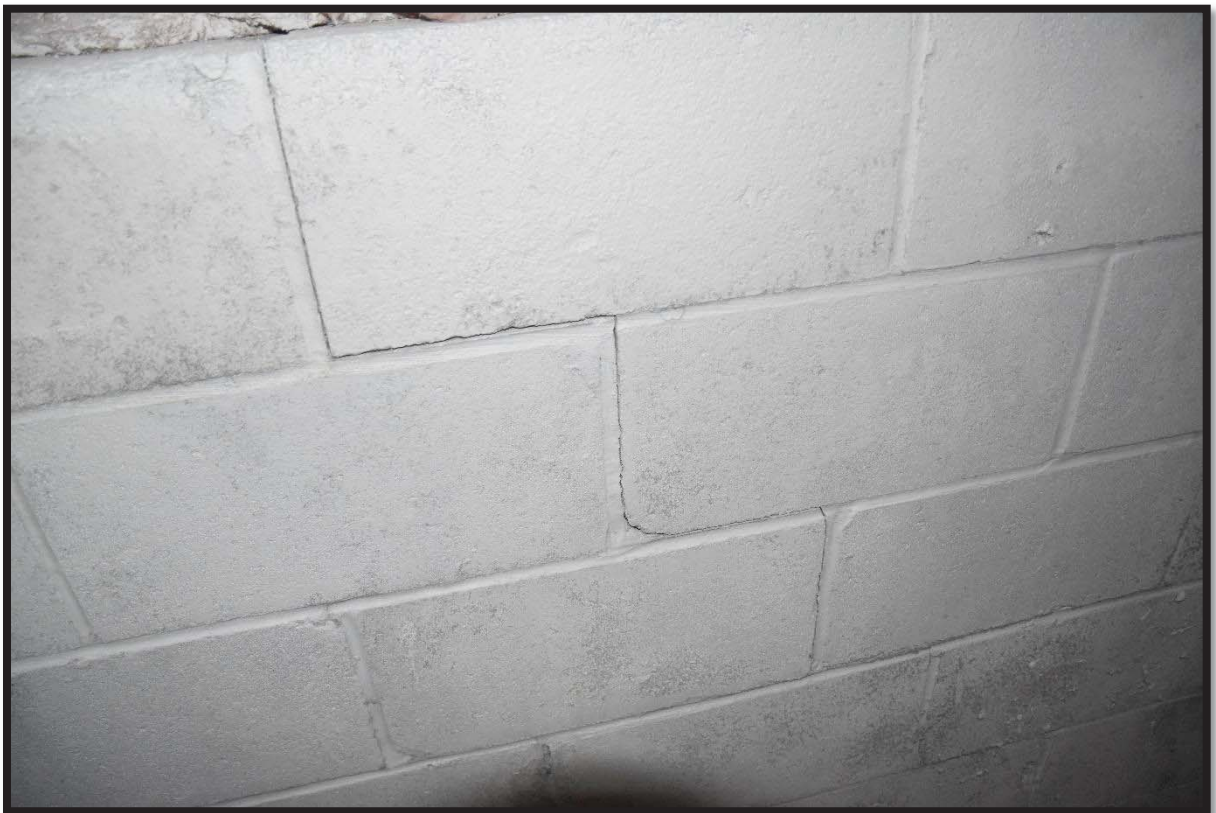
7. Foundation wall out of plumb.



8. Foundation wall out of plumb.



9. Horizontal crack in foundation wall.



10. Stepped crack in foundation wall.



11. Cavity at base of foundation wall.



12. Aged moisture damage to foundation wall.



13. Misalignment in exterior wall framing.



14. Exterior wall frame out of plumb.



15. Wall frame offset from concrete block foundation wall.



16. Exterior wall framing out of plumb.



17. Top of exterior wall leaning out relative to bottom of wall.



18. Unsecured anchor bolt (typical condition).



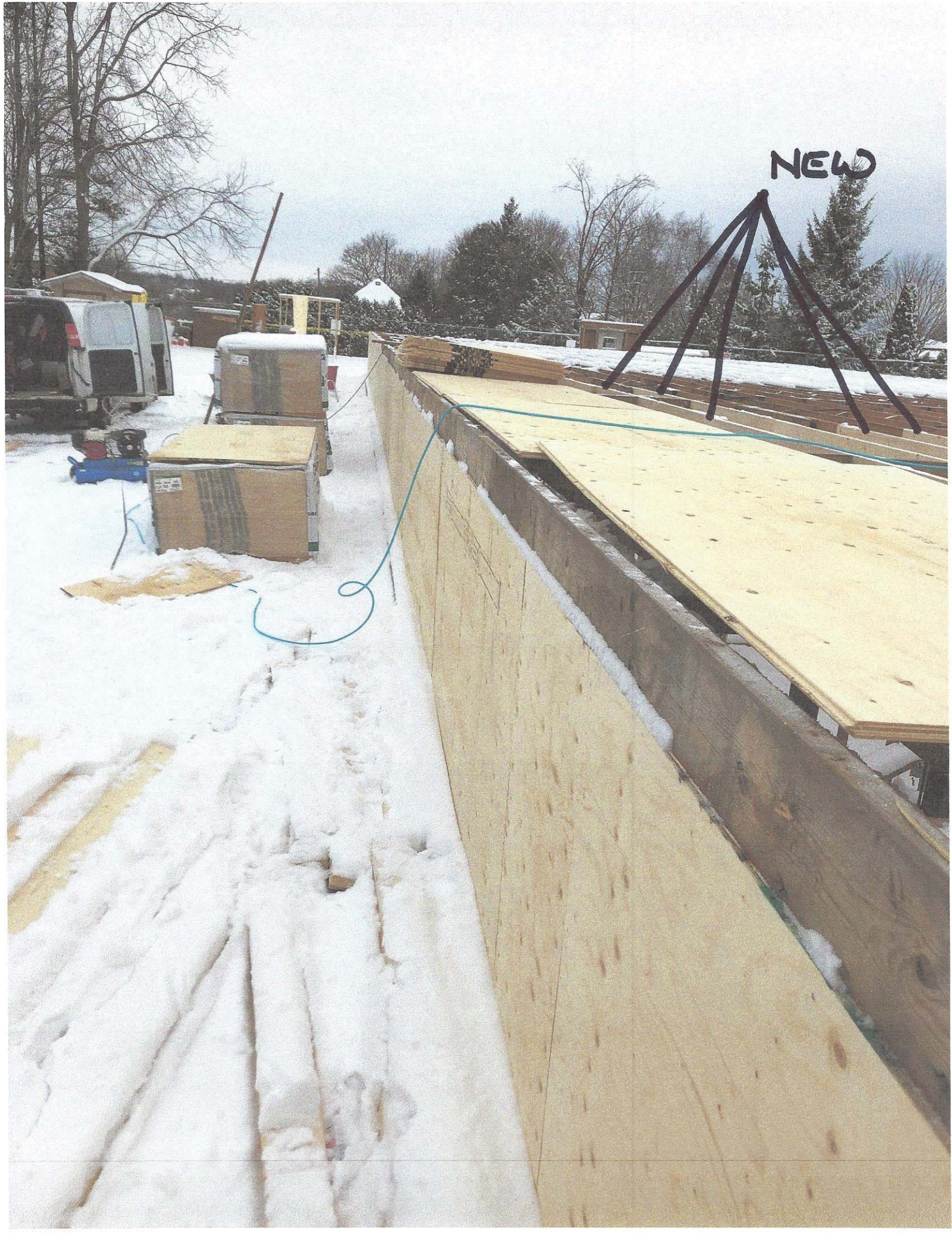
19. Cracked floor joist.



20. Holes in floor joists (for services).

FIRST FLOOR JOISTS REPAIRS





NEW

NEW.



ASBESTOS ABATEMENT SUMMARY REPORT TYPE 3 OPERATIONS

**48 Wellington Street
Port Hope, Ontario**

Prepared for:

Mr. Paul Horning
Project Manager

ServiceMaster of Durham
300 Beech Street West
Whitby, Ontario
L1N 7T8

Performed by:
Safetech Environmental Limited



Jason King
Occupation Health & Safety Technician

Reviewed by:



James R. Green, BA, CRSP, AMRT
Senior Project Manager

SEL Project Number: 166118

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1.0 BACKGROUND	1
2.0 METHODOLOGY	1
2.1 Visual Inspections	1
2.1.1 Pre-Abatement Visual Inspection	1
2.1.2 Post-Abatement Visual Inspection	2
2.2 Clearance Air Testing.....	2
2.2.1 Transmission Electron Microscopy (TEM) Analysis.....	3
3.0 RESULTS.....	4
3.1 Visual Inspections	4
3.2 Clearance Air Testing.....	5
4.0 CONCLUSIONS	5
5.0 LIMITATIONS.....	6

LIST OF APPENDICES

Appendix A – Site Photographs
 Appendix B – Site Inspection Reports
 Appendix C – Laboratory Certificate of Analysis

EXECUTIVE SUMMARY

From October 26, 2018 to January 31, 2019, Safetech Environmental Limited (SEL) conducted inspections and air sampling associated with the removal of asbestos-containing textured coat, joint compound, and construction paper from 48 Wellington Street, Port Hope, Ontario. Asbestos abatement was conducted following Type 3 procedures in accordance with Ontario Regulation 278/05, "Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations", made under the Occupational Health and Safety Act (O.Reg. 278/05). Asbestos abatement was performed by Ferro Environmental Inc.

Our pre-abatement inspection on October 26, 2018, confirmed that the work area was constructed in accordance with O.Reg. 278/05 and permission was granted to commence abatement. On November 14, 2018, a post-abatement visual inspection was conducted and confirmed that all specified asbestos-containing drywall joint compound and texture coat had been removed from the building. Clearance air testing conducted on November 15, 2018, confirmed that airborne fibre concentrations were below the O.Reg. 278/05 clearance standard of 0.01 f/cc. During our site visit on November 15, 2018, the abatement contractor had uncovered asbestos-containing construction paper beneath hardwood flooring in the building. Therefore, the scope of work was revised to include the removal of this asbestos-containing materials following Type 3 procedures. Given the location of the material, the owner decided to demolish the existing structure down to the below grade basement. Upon completion of the removal of the asbestos-containing construction paper, a post-abatement visual inspection was conducted on January 30, 2019. Results of our inspection confirmed that all asbestos-containing materials in the building had been removed. Clearance air sampling was not conducted as the building was demolished and is not required by O.Reg. 278/05.

Based on our visual inspections and air testing results, removal of asbestos-containing materials from 48 Wellington Street, Port Hope, Ontario is deemed to be successfully completed.

This is a summary report only. Please refer to our full report for additional details regarding this project.

Sincerely,
SAFETECH ENVIRONMENTAL LIMITED



Jason King
Occupational Health and Safety Technician

February 1, 2019

ServiceMaster of Durham
300 Beech Street West
Whitby, Ontario
L1N 7T8

Attn: Mr. Paul Horning
Project Manager

Re: Asbestos Abatement Close-Out Report - Type 3 Outdoor Operations
Building Demolition Project
48 Wellington Street, Port Hope, Ontario

1.0 BACKGROUND

From October 26, 2018 to January 30, 2019, Safetech Environmental Limited (SEL) conducted visual inspections and air monitoring associated with the removal of asbestos-containing textured coat, joint compound, and construction paper at 48 Wellington Street, Port Hope, Ontario. These services were conducted on behalf of Mr. Paul Horning, Project Manager for ServiceMaster of Durham, to ensure that all work was conducted in accordance with the requirements set forth in Ontario Regulation 278/05, "Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations", made under the Occupational Health and Safety Act (O.Reg. 278/05). Asbestos abatement was conducted by Ferro Environmental Inc. following Type 3 outdoor operations.

Results of our visual inspections and air testing conducted for the duration of the project are summarized in this report.

2.0 METHODOLOGY

2.1 Visual Inspections

2.1.1 Pre-Abatement Visual Inspection

A visual inspection was conducted prior to the start of asbestos abatement. The objective of our pre-abatement visual inspection was to ensure that the work area was properly constructed and contained, equipment and materials were adequately protected and that adequate engineering controls were in place in accordance with project specifications and O. Reg. 278/05 requirements. SEL also verified that the

contractor had the proper equipment, materials and personal protective equipment (PPE) on site. Lastly, an on-site review was conducted with the remediation contractor prior to the start of abatement to confirm the scope of work and expected contractor work practices and procedures.

2.1.2 Post-Abatement Visual Inspection

Post-abatement visual inspections were conducted prior to the application of a slow-drying sealant. The objective of these visual inspections was to verify that all designated asbestos-containing materials were removed as outlined in the scope of work and specifications and to ensure that the enclosure and the work area inside the enclosure were adequately cleaned of visible dust, debris or residue that may contain asbestos (as per requirements of Section 18(4)15 of O.Reg. 278/05).

2.2 Clearance Air Testing

Clearance air testing was conducted as a requirement of O.Reg. 278/05 to ensure the abatement work had been successfully completed and the work area was safe for general occupancy. Testing was performed once our post-abatement visual inspection confirmed that asbestos abatement had been completed, the work area was visibly clean and after a reasonable amount of time elapsed to allow the slow-drying sealant to dry.

Clearance air testing was conducted using aggressive air sampling techniques in accordance with requirements set forth in Section 18(6) of O.Reg. 278/05. Forced air was used to ensure that fibres were dislodged from all surfaces inside the enclosure before the start of air sampling. Fans were then used during sampling to ensure fibres were kept airborne throughout the sampling process.

An appropriate number of air samples were collected inside the enclosure based on the area of the enclosure and a sample volume of at least 2,400 litres (L) was drawn through each sample filter to meet the requirements of O.Reg. 278/05. As indicated in this regulation, “the work area inside the enclosure passes the clearance air test only if every air sample collected has a concentration of fibres that does not exceed 0.01 fibres per cubic centimetre of air”.

Air samples were collected using 25-mm three-piece filter cassettes containing a 0.8 µm cellulose ester membrane filter and equipped with a 50-mm electrically conductive extension cowl. Each filter cassette was attached to a high-volume air sampling pump calibrated with a filter cassette in line to a known flow rate.

At the completion of air testing each sample was analyzed in accordance with U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, Issue 2: Asbestos and other Fibres by PCM (August 15, 1994), using the asbestos fibre counting rules. As required by NIOSH Method 7400, field

blanks were also analyzed to ensure that no contamination of the filters occurred during sampling or analytical procedures.

The quantitative working range of this method is 0.04 to 0.5 fibre/cc for a 1000 L air sample. The Limit of Detection (LOD) depends on sample volume and quantity of interfering dust, and is <0.01 fibre/cc for atmospheres free of interferences. Fibres less than approximately 0.25 µm in diameter will not be detected by this method. This analytical method gives an index of airborne fibres as it cannot differentiate between asbestos and other fibres. Other airborne particles that fall within the counting range criteria will act as positive interferences. Results of analysis have been field blank corrected and are reported as the concentration of fibres per cubic centimeter of air (f/cc).

2.2.1 Transmission Electron Microscopy (TEM) Analysis

TEM analysis was performed on air samples that exceeded the clearance standard of 0.01 fibres per cubic centimeter of air during our initial PCM analysis. The samples were analyzed in accordance with U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7402, Issue 2: Asbestos by TEM (August 15, 1994).

Asbestos fibres are defined as fibres of asbestos with a length to width aspect ratio of at least 3:1. Asbestos structures are pieces of asbestos material, that include asbestos fibres, but also include all material analyzed as asbestos, such as thin fibres, short fibres, bundles and chunks of asbestos material. Studies generally report that fibres greater than 5 µm (micrometers) in length are of greatest concern with respect to health effects. In accordance with NIOSH 7402 method, only fibres with an aspect ratio of >3:1 and only those fibres greater than 5 µm in length are counted.

The quantitative working range of this method is 0.04 to 0.5 fibres/cc for a 1000 litre air sample. The Limit of Detection (LOD) depends on sample volume and quantity of interfering dust, and is < 0.01 fibres/cc for atmospheres free of interferences. The method used to determine asbestos fibres in the optically visible range and is intended to complement the results obtained by phase contrast microscopy (NIOSH Method 7400). Other amphibole particles that have asbestos ratios greater than 3:1 and elemental compositions similar to the asbestos minerals may interfere in the TEM analysis. Some non-amphibole minerals may give electron diffraction patterns similar to amphiboles. High concentrations of background dust interfere with fibre identification. Some non-asbestos amphibole minerals may give electron diffraction patterns similar to asbestos amphiboles.

3.0 RESULTS

3.1 Visual Inspections

Results of our visual inspection are summarized below. Photographs illustrating conditions observed at the time of our inspections are provided in Appendix A.

Pre-Abatement Visual Inspection – October 26, 2018

Our pre-abatement visual was conducted once the work area was constructed. Our inspection noted that the work area was constructed in accordance with the procedure developed for the project and O.Reg. 278/05. Based on our visual inspection, permission was granted to commence asbestos abatement.

Post-Abatement Visual Inspection – November 14, 2018

Our post-abatement visual inspection confirmed that all asbestos-containing textured coat, and joint compound outlined in the scope of work and had been removed. However, minor drywall finish debris and associated asbestos-containing joint compound was identified to remain on the floor of the porch. The abatement contractor was informed of these deficiencies at the time of our site visit.

Upon correction of these deficiencies the work area was deemed to be acceptably clean and permission was granted to apply a slow-drying sealant to all surfaces within the Type 3 work area.

Bulk Sampling – November 15, 2018

During the correction of minor deficiencies, the abatement contractor uncovered suspect asbestos-containing construction paper beneath existing wood flooring in the building. SEL personnel collected bulk samples of this material and confirmed that the material was asbestos-containing. Given that the material is friable ACM and exceeded 1.0 m², removal was recommended to be conducted following Type 3 procedures as required by O.Reg. 278/05.

Post-Abatement Visual Inspection – January 30, 2019

SEL was on-site January 30, 2019 upon completion of removal and final cleaning procedures. Our inspection noted that the ground floor and second floor had been removed from the work site and that all identified asbestos-containing construction paper had been removed from the building. Asbestos-containing waste was removed from the basement work area and no dust or debris related to abatement activities was identified within the subject area. For further details, please refer to site photographs of typical conditions (attached to this report).

3.2 Clearance Air Testing

Results of clearance air testing conducted at the completion of the first phase of abatement are summarized below in Table 1. Subsequent TEM analysis results are also included in the table. The laboratory certificate of analysis is provided in Appendix C. Please note that the existing building was demolished in order to access asbestos-containing construction paper and clearance air sampling is not required in these circumstances under O.Reg. 278/05.

TABLE 1
Results of Clearance Air Testing
Sample Collection Date: November 15, 2018

Sample No.	Sample Location	Sample Volume (L)	Airborne Fibre Conc. (f/cc) (PCM Analysis)	Airborne Fibre Conc. (f/cc) (TEM Analysis)
2018-11-144	Second Floor	2648.8	0.011	<0.0010
2018-11-145		2648.8	0.006	N/A
2018-11-146		2633.4	0.011	<0.0010

4.0 CONCLUSIONS

Results of our pre-abatement inspection on October 26, 2018, confirmed that the work area was constructed in accordance with O.Reg. 278/05 and permission was granted to commence asbestos abatement. Our post-abatement visual inspection on November 14, 2018 verified that the scope of work (removal of all asbestos-containing textured coat, and joint compound) had been satisfactorily completed and that upon the correction of minor deficiencies the work area was deemed to be acceptably clean.

Clearance air testing conducted November 15, 2018 within the work area at the completion of asbestos abatement confirmed that airborne fibre levels were below the O.Reg. 278/05 regulated clearance limit of 0.01 fibres per cubic centimetres air and therefore passed the air clearance testing requirements.

Our post-abatement visual inspection on January 30, 2019, confirmed that all asbestos-containing construction paper was removed from the building (existing structure demolished to access material). No deficiencies were observed at the site of our site visit. Clearance air sampling is not required for building demolition projects.

Based on our visual inspection and air testing results, asbestos abatement at 48 Wellington Street, Port Hope, Ontario is deemed to be successfully completed.

5.0 LIMITATIONS

The investigation, assessments and recommendations detailed in this report were carried out in a manner consistent with the level of care and skill normally exercised by reasonable members of the environmental and industrial hygiene consulting profession currently practicing under similar conditions in the area. Furthermore, the investigation, assessments and recommendations in this report have been made based on conditions observed at the time of the assessment and are limited to the areas investigated.

In preparing this report, Safetech Environmental Limited (SEL) relied on information supplied by others, including independent laboratories and testing services. Conclusions made in this report are based on the laboratory analytical results for the air samples analyzed. Except as expressly set-out in this report, SEL has not made any independent verification of such information.

The analytical method used meets the requirements of O.Reg. 278/05. However, it is important to note that this method is not specific to the identification of asbestos fibres. All particles with a length greater than 5 micrometres, less than 3 micrometres in diameter and a length to diameter ratio of 3 to 1 or greater are included in the count. Fibres with diameters less than about 0.3 micrometres cannot be detected using this method regardless of length.

This report has been prepared for the sole use of the person or entity to who it is addressed. No other person or entity is entitled to use or rely upon this report without the express written consent of Safetech Environmental Limited and the person or entity to who it is addressed. Any use that a third party makes of this report, or any reliance based on conclusions and recommendations made, are the responsibility of such third parties. SEL accepts no responsibility for damages suffered by third parties as a result of actions based on this report.

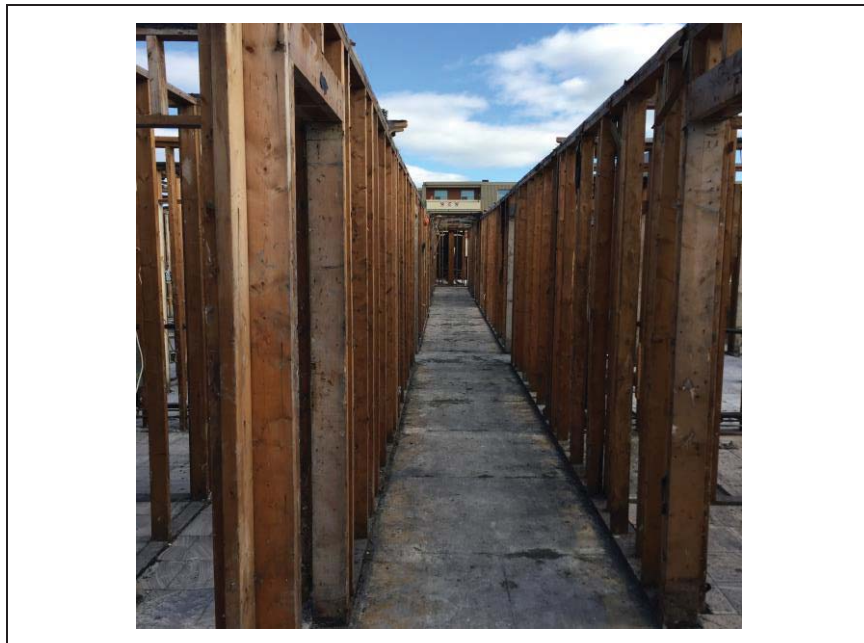
Appendix A

Site Photographs



P1 – Enclosure Entrance

View of enclosure entrance to the work area.



P2 – Second Floor

View of work area during our post abatement inspection visit on November 14, 2018.



P3 – Second Floor

Alternative view of work area during our post abatement inspection visit on November 14, 2018.



P4 – Exterior View

Typical view of the building during our site inspection on January 30, 2019.

Appendix B

Site Inspection Reports

SITE INSPECTION REPORT



Page 1 of 1

Date: January 30, 2019
Client: _____
Location: 48 Wellington St
SEL Rep.: Jason King

Job Type: ☒ Asbestos
☐ Mould
☐ Lead
☐ Indoor Air Quality

☐ Infection Control
☐ Construction Safety
☐ Occupational Hygiene
☐ Other

Safetech Environmental Limited (SEL) was contracted to conduct a post abatement visual inspection associated with the Type 3 Demolition Project at 48 Wellington, Port Hope, Ontario. The scope of work involved the removal of asbestos-containing ^{drywall} joint compound and texture finish in the Type 3 work area in addition to Type 1 removal of exterior window caulking.

SEL was on site at approximately 9am, Wednesday January 30, 2019. During air inspection the following was noted:

- Work area was properly isolated & enclosure front entrance / decontamination unit was in tact
- All designated asbestos-containing materials outlined in the scope of work had been removed from the work area
- All ^{remaining} surfaces inside the Type 3 work area had been encapsulated in paint
- Three (3) air scrubbers, Six (6) heaters, and one (1) negative air were observed to be operating in the work area

Upon inspection, SEL determined that scope of work had been completed and permission was granted to proceed with further work activities

Appendix C

Laboratory Certificate of Analysis

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

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

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551813604

CustomerID: 55SELI62

CustomerPO: 166118

ProjectID:

Attn: **Jason King**
Safetech Environmental
3045 Southcreek Road
Unit 14
Mississauga, ON L4X 2X7

Phone: (905) 624-2722
Fax: (905) 624-4306
Received: 11/15/18 7:51 PM
Analysis Date: 11/16/2018
Collected: 11/15/2018

Project: 48 Wellington Street, Port Hope/166118

Test Report: Asbestos Analysis of Air Samples by Transmission Electron Microscopy via NIOSH Method 7402

Sample	Volume (Liters)	Non Asbestos Fibers	Asbestos Type(s)	Asbestos Fibers	PCM F/cc	*Asbestos % of total	7402 Adjusted (TEM) F/cc	Notes
A1 551813604-0001	2648.8	57.5	None Detected		0.011	0 %	<0.0010	
A2 551813604-0002	2633.4	34	None Detected		0.011	0 %	<0.0010	

NIOSH 7402 method only reports fibers > 5µm in length and > 0.25µm in width.

This method requires a minimum of 2 field blank analyses per set.

* The above results are not blank corrected

Average number of asbestos fibers on field blanks: n/a

Average number of non-asbestos fibers on field blanks: n/a

Analyst(s)

Anne Balayboa (2)

Matthew Davis or other approved signatory
or other approved signatory

EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Canada Inc. Mississauga, ON

Initial report from 11/16/2018 18:05:33