

ASBESTOS-CONTAINING BUILDING MATERIALS RE-ASSESSMENT REPORT

Cardiff Elementary School

2 Short Road
Cardiff, Ontario

Presented to:

Trillium Lakelands District School Board

Box 420, County Road 36
Lindsay, Ontario
K9V 4S4

Attention: Daniel Whalen

September 2021

Maple Project No. 19359-12

Executive Summary

2021 Asbestos-Containing Building Materials Re-Assessment Report

Maple Project	School Name	Address
19359-12	Cardiff Elementary School	2 Short Road, Cardiff, Ontario

Maple Environmental Inc. was retained by Trillium Lakelands District School Board to perform a re-assessment of known asbestos-containing building materials within the subject building.

The findings and recommendations of the current assessment are summarized below. Please refer to the main body of the report for details.

FINDINGS

No major sources of asbestos-containing materials were identified within the building.

RECOMMENDATIONS

As no known major sources of asbestos-containing materials have been identified within the building, no immediate recommendations are warranted.

General Statement

The Executive Summary must be read in conjunction with the main body of this report.

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1.0 INTRODUCTION

MAPLE Environmental Inc. ("MAPLE") was retained by the Trillium Lakelands District School Board (TLDSB) to perform a re-assessment of known asbestos-containing building materials within all TLDSB schools where asbestos was previously confirmed to be present (by others).

The assessment was completed in accordance with the requirement of Ontario Regulation 278/05 to complete a re-assessment on an annual basis.

The following report presents the findings and recommendations of the assessment for the specific building listed.

SUMMARY OF BUILDING INFORMATION	
School Name:	Cardiff Elementary School
Building Address:	2 Short Road, Cardiff, Ontario
Number of Floors:	1
Approximate Square Footage:	15,800
Assessed by:	Richards Reboks
Assessment Date:	July 20, 2021

2.0 APPLICABLE ONTARIO REGULATIONS

Applicable Ontario Regulations for each of the materials included in the investigation are briefly described below.

2.1 Ontario Regulation 278/05 (Asbestos)

The Ontario Ministry of Labour Regulation 278/05 requires a detailed asbestos inventory be performed in all buildings where friable and non-friable asbestos-containing materials (ACM) are present. The inventory must be available at the work place and must identify the type and location of asbestos-containing materials on a room-by-room basis, where necessary.

Each individual building report prepared by MAPLE meets or exceeds the requirements for an asbestos survey under Ontario Regulation 278/05.

Ontario Regulation 278/05 applies to buildings with regards to maintenance, renovation or demolition work where ACM is present and may be disturbed. The regulation requires all buildings where asbestos is known to be part of the building materials to implement an Asbestos Management Program (AMP). TLDSB has prepared and maintains an AMP of which the current Re-Assessment report is part of.

2.2 Ontario Regulation 347

Ontario Regulation 347 applies to the transport of waste from the location of generation to a landfill site authorized to receive specific wastes. The regulation also prescribes procedures on how the specific wastes are to be handled at the landfill site.

The major requirements of the building owner and the person(s) removing the waste are to ensure that:

- The waste is appropriately packaged and labelled;
- The transport vehicle is appropriately placard; and
- The waste is to be transported as directly as possible to the landfill site once it leaves the site.

Some wastes require the Owner to register a Generator (of waste) number and many wastes require classification that can restrict or even prohibit their disposal in landfill.

It is important to note that the building owner can be held responsible for the waste until the waste disposal site accepts it.

3.0 SURVEY SCOPE AND METHODOLOGY

The surveys were performed on a Room-by-Room basis within each building included in the scope of the assessment where asbestos was previously identified (by others).

The scope of the surveys included all friable and major non-friable materials suspected to contain asbestos. The term friable is applied to a material that can be readily reduced to dust or powder by hand or moderate pressure. Asbestos materials that are friable have a much greater potential to release airborne asbestos fibres when disturbed.

Typical friable asbestos materials include; sprayed fireproofing or thermal insulation, textured (stippled) plaster, and thermal mechanical insulation. Typical non-friable materials include: asbestos cement (transite) products, caulking, vinyl floor tiles, asbestos textiles and gaskets. Additional materials such as ceiling tiles and drywall joint compounds are classified as non-friable, but because of their ability to release dust when disturbed they are considered as "potentially friable" for the purpose of this report.

3.1 Inventory Methodology

In order to determine the location of the materials included in the assessment, each room or area was entered where practical (i.e.: where access was possible without the demolition of walls, roof or ceilings or destruction of flooring) where asbestos materials were previously identified. An investigation of areas of the building where asbestos was not previously identified was not included in the scope of the current project.

Representative views were made above accessible suspended ceiling systems. Drywall or plaster ceilings were accessed via existing ceiling access panels only. The inventory did not include destructive testing of building systems or finishes to observe possible hidden conditions.

3.2 Asbestos Assessment Criteria

The recommendations and suggestions made as part of this report with respect to asbestos have taken into consideration the condition and accessibility of the asbestos-containing material as well as other factors such as water damage, vibration, air movement, and general activities in the area.

Where ACM is found to be in GOOD condition and not likely to deteriorate or fall, the general recommendation would be to re-evaluate the condition of the material on an annual basis (required by Regulation 278/05). This recommendation can be subject to change if the material is located in a manner that persons untrained in asbestos awareness could physically damage it.

Where the ACM is found to be damaged (i.e. FAIR or POOR condition), a recommendation to have the material cleaned-up, repaired, removed, enclosed, or encapsulated is offered. The recommendation will also indicate which asbestos procedure should be used to perform the remedial work (i.e. Type 1, Type 2, Type 3, or Glove Bag Removal Methods).

In each area or room inventoried, the quantity, condition (GOOD, FAIR, or POOR) and accessibility (A, B, C, D or E) of each suspect material was recorded.

The definitions for condition and accessibility items are as follows:

- GOOD** Material is intact with no visible signs of damage.
- FAIR** Material is visibly damaged but can be repaired.
- POOR** Material is damaged beyond repair and likely needs to be removed.
- Access A** Accessible to all occupants of the building.

- Access B** Accessible to Maintenance personnel without the use of a ladder (i.e. Mechanical Room, pipe chase etc.).
- Access C** Accessible to Maintenance personnel with the use of a ladder and is exposed to view without removing building components.
- Access D** Accessible to Maintenance personnel with the use of a ladder and is concealed from viewing due to a building component (i.e. above a removable ceiling).
- Access E** Not accessible without demolition of a building component (i.e. above a fixed ceiling system).

The asbestos related information collected during the previous assessments was confirmed and the room-by-room data updated to reflect the current information.

3.3 Limitations and Omissions from Scope

Due to the nature of building construction, some limitations exist in regards to the possible thoroughness of any building materials inventory. The field observations, measurements, and analysis are considered sufficient in detail and scope to form a reasonable basis for the findings presented in this report. MAPLE warrants that the findings and conclusions contained herein have been made in accordance with generally accepted evaluation methods in the industry and applicable regulations at the time of the performance of the inventory.

It is possible that conditions may exist which could not be reasonably identified within the scope of the inventory or which were not apparent during the site investigation. MAPLE believes that the information collected during the inventory period concerning the property is reliable. No other warranties are implied or expressed.

In addition, during a standard asbestos assessment, performed for the purposes of regulatory compliance, it is industry practice to exclude some non-friable materials in the inventory. Examples of such assumptions include; elevator brakes, roofing felts and mastics, high voltage wiring, mechanical packing and gaskets, underground services or piping, fire-doors, window caulking, levelling compound, and/or materials used in operating equipment. As such, these materials were not sampled at the time of this survey and where present are assumed to be asbestos containing until proven otherwise.

3.4 Sampling Strategy and Analytical Methods

As the majority of materials were previously sampled by others, the requirement for sampling during the current survey was limited. Where samples were collected, they conformed to the criteria outlined below and in compliance with O. Reg. 278/05.

A small volume of the material was removed either from a damaged section or cut out of intact material and then repaired by sealing with tape to prevent the release of fibres. The collected samples were placed in plastic bags, sealed and labelled and then sent to an independent laboratory for analysis. To ensure quality results, the independent laboratory chosen is NVLAP accredited and successfully participates in an "Asbestos Proficiency Analytical Testing Program" and as such, these laboratories are responsible for their findings.

The collection of samples was performed in accordance with regulatory sampling requirements and with sufficient frequency to obtain a general pattern of asbestos use within the building. Due to building renovations or modifications that have occurred, the consistency of the application of asbestos materials may not be uniform throughout the entire building. It is important to note that without sampling every wall, pipe section, ceiling tile etc. it is not possible to identify the possible asbestos content in every material present in the building. For this reason, materials similar in appearance to those sampled elsewhere in the building were visually identified as being homogeneous and thus are assumed to be composed of the same material, thus additional sampling is not required.

In accordance with Reg. 278/05, samples were collected at the following frequency.

Material Type	No. Samples
Sprayed Fireproofing	Up to 7
Texture Coat	Up to 7
Pipe Fitting Insulation	3
Pipe Straight Insulation	3
Ductwork Insulation	3
Ceiling Tiles	3
Vinyl Sheeting Flooring	3
Vinyl Floor Tile	3
Plaster Finishes	Up to 7
Drywall Compound	Up to 7

An independent NVLAP accredited laboratory, was used to analyse the collected samples. Analysis was performed following the Code of Practice for the identification of asbestos in bulk material, as detailed in Ontario Regulation 278/05. Bulk samples were analysed using the Polarized Light Microscopy ("PLM") Technique with Dispersion Staining. The identification of asbestos fibre in bulk material is based on a collective set of parameters dependent on the unique shape and crystallographic properties of each fibre as viewed through the microscope. This method is useful for the qualitative identification of asbestos and the semi-quantitative determination of asbestos content in bulk materials expressed as a percent of projected area. The method identifies types of asbestos and also measures percent of asbestos as perceived by the analyst in comparison to standard area projections or trained experience.

Given the composition of some vinyl floor products, the PLM analysis method is often prone to yielding false negative analysis results. Therefore it may be prudent that the Transmission Electron Microscopy (TEM) analysis method be used to determine the asbestos content in the vinyl floor products, if negative results are obtain from the laboratory analysis.

3.5 Drawings

Drawings provided for each building indicate the following (where present):

- ◇ Location Numbers (reference to Room-by-Room asbestos data)
- ◇ Asbestos-Containing Sprayed Fireproofing
- ◇ Asbestos-Containing Texture Finishes
- ◇ Asbestos Containing Ceiling Tiles
- ◇ Asbestos-Containing Flooring Materials
- ◇ Presence of Asbestos-Containing Mechanical Insulations will not be specifically indicated on the drawings; however, a general statement regarding the presence of ACM mechanical insulations, where present, has been indicated on the drawings.
- ◇ Presence of asbestos-containing drywall joint compound and hard plaster will not be specifically identified on the drawings; however, a general statement regarding the presence of these ACM materials, where present, has been indicated on the drawings.

4.0 INVENTORY FINDINGS

The following is a brief discussion of the extent to which Asbestos-Containing Materials (ACM) was identified in the building. The discussion is organized under the headings of materials that are generally suspected of containing asbestos. Refer to the Room-by-Room Survey Inventory in Appendix I for a detailed description and location of all ACM.

Destructive testing was not conducted and as such some areas within the building were not accessible for an assessment (i.e. above solid ceilings, behind walls). Access for viewing within wall and ceiling cavities was not always possible. Suspect asbestos materials may be present within ceiling and wall cavities that were not identified in this report. This comment is particularly important for materials such as mechanical insulation. Caution should be taken when demolishing solid wall finishes within the building.

4.1 Sprayed Fireproofing (Friable)

No sprayed fireproofing was observed in the building.

4.2 Thermal Mechanical Insulation (Friable)

No asbestos-containing mechanical insulations are present in the building. It is important to note that mechanical systems may be present within walls and ceiling cavities or pipe chases that were not accessible during this assessment. The presence of ACM mechanical insulations in these locations should be suspected.

Pipe Systems:

Pipe Fittings, where insulated are insulated with non-asbestos fibreglass and/or armaflex materials.

Pipe Straights, where insulated are insulated with non-asbestos fibreglass and/or armaflex materials.

Ductwork:

Duct systems were either insulated with non-asbestos fibreglass or were un-insulated.

Mechanical Equipment:

Mechanical equipment was observed to be externally un-insulated.

4.3 Texture Finish (Friable)

No asbestos-containing texture finishes were identified to be present within the building.

4.4 Acoustic Ceiling Tiles (Potentially Friable)

No asbestos-containing ceiling tiles were identified to be present within the building.

4.5 Vinyl Sheet Flooring (Potentially Friable)

No asbestos-containing vinyl sheet flooring was identified to be present within the building.

4.6 Vinyl Floor Tile (Non-Friable)

No asbestos-containing vinyl floor tiles were identified to be present within the building.

4.7 Asbestos Cement Products "Transite" (Non-Friable)

Asbestos cement products were not observed to be present within the building.

4.8 Drywall Joint Compound (DJC)

While previous sample results indicated drywall joint compound sampled at the Site does not contain asbestos, it should be noted that the concentration of asbestos within drywall joint compound is historically known to be potentially inconsistently distributed. Further, it is possible that various phases of construction and renovations have occurred at the Site. Therefore, the number of samples previously collected may not be representative of all drywall joint compound finishes in the building.

4.9 Plaster

No plaster finishes were identified in the building.

5.0 RECOMMENDATIONS

5.1 General Recommendations

As no known major sources of asbestos-containing materials have been identified within the building, no immediate recommendations are warranted.

Prior to major renovation or demolition, additional investigation should be completed. In the interim, the requirement for an annual asbestos re-assessment is not required.

6.0 LIMITATIONS

Due to the nature of building construction some limitations exist as to the possible thoroughness of the subject investigation. The field observations are considered sufficient in detail and scope to form a reasonable basis for the findings presented in this report. MAPLE warrants that the findings and conclusions contained herein have been made in accordance with generally accepted evaluation methods in the industry and applicable regulations at the time of the performance of the assessment.

It is possible that conditions may exist which could not be reasonably identified within the scope of the investigation or which were not apparent during the site investigation. MAPLE believes that the information collected during the investigation period concerning the property is reliable. No other warranties are implied or expressed.

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Please contact Maple Environmental Inc. at (905) 257-4408 for inquiries regarding this project.

Sincerely,

MAPLE ENVIRONMENTAL INC.
Environment, Health and Safety Consultants

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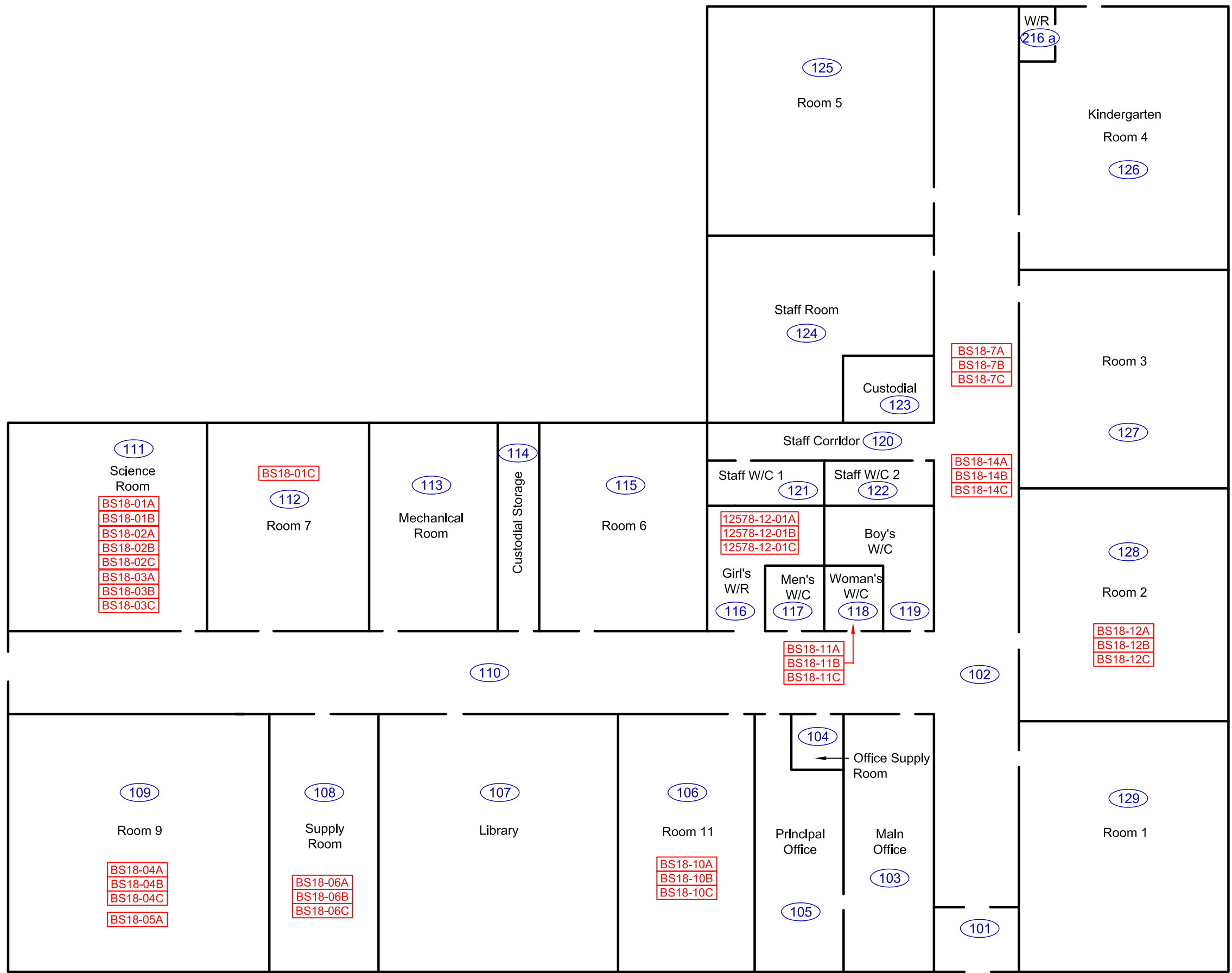
APPENDIX I
ROOM-BY-ROOM ASBESTOS INVENTORY

APPENDIX I - ROOM BY ROOM ASBESTOS INVENTORY

	STRUCTURAL ELEMENT		ACCESSIBILITY		TERMINOLOGY										
	RF: Roof WN: Window FL: Floor CL: Ceiling WL: Wall DK: Deck	B/J: Beams/Joists CB: Chalkboard P: Pipe DT: Duct BL: Boiler MC: Mechanical	A: All occupants of the facility B: Maintenance staff without a ladder C: Maintenance staff with a ladder, exposed to view without moving building components D: Maintenance staff with a ladder, concealed from view by building components E: No access without demolition or removal of fixed building components or systems	N/A: Not Applicable N/Anz: Not Analyzed N/D: None Detected PI-AC: Pipe Insulation - Aircell PI-PC: Pipe Insulation-Parging Cement PI-CP: Pipe Insulation-Capostite	PL: Plaster RM: Roofing Materials SFP: Sprayed Fireproofing SF: Square Feet TF: Texture Finish	TB: Transite Board TP: Transite Pipe VI: Vermiculite Insulation VFT: Vinyl Floor Tile	VSF: Vinyl Sheet Flooring V/C: Visually Consistent w/ Other Sampled Material WC: Window Caulking								
					CONDITION		G: Good F: Fair P: Poor								

ID	Facility	Floor #	Room #	Room name	Has ACM	Friable	Struct. Elem.	Application	Material	Type	Qty	Condition	Sample #	Action	Ref #	Comments 1	Comments 2	Comments 3	Notes
68922	Cardiff Elementary School	1	125	ROOM 5	No	No	FL	VFT	1	N/D	-	-	V/C BS18-01						
68923	Cardiff Elementary School	1	125	ROOM 5	No	No	FL	VFT	3	2% CHRYSOTILE	0 SF	G	V/C BS18-03			A			Abated 2016.
68924	Cardiff Elementary School	1	125	ROOM 5	No	No	CL	CT	1	N/D	-	-	V/C BS18-14						
68925	Cardiff Elementary School	1	125	ROOM 5	No	No	WL	DIC		N/D	-	-	V/C BS18-07						
68926	Cardiff Elementary School	1	126	ROOM 4	No	No	FL	VFT	1	N/D	-	-	V/C BS18-01						
68927	Cardiff Elementary School	1	126	ROOM 4	No	No	FL	VSF	1	N/D	-	-	V/C BS18-11						
68928	Cardiff Elementary School	1	126	ROOM 4	No	No	CL	CT	1	N/D	-	-	V/C BS18-14						
68929	Cardiff Elementary School	1	127	ROOM 3	No	No	FL	VFT	1	N/D	-	-	V/C BS18-01						
68930	Cardiff Elementary School	1	127	ROOM 3	No	No	FL	VFT	3	2% CHRYSOTILE	0 SF	G	V/C BS18-03			A			Abated 2016.
68931	Cardiff Elementary School	1	127	ROOM 3	No	No	CL	CT	1	N/D	-	-	V/C BS18-14						
68935	Cardiff Elementary School	1	128	ROOM 2	No	No	FL	VFT	1	N/D	-	-	V/C BS18-01						
68936	Cardiff Elementary School	1	128	ROOM 2	No	No	FL	VFT	2	3% CHRYSOTILE	0 SF	G	V/C BS18-02			A			Abated 2016.
68937	Cardiff Elementary School	1	128	ROOM 2	No	No	FL	VFT	3	2% CHRYSOTILE	0 SF	G	V/C BS18-03			A			Abated 2016.
68938	Cardiff Elementary School	1	128	ROOM 2	No	Yes	WL	VSF	2	N/D	-	-	BS18-12A-C						ON WINDOW LEDGE
68932	Cardiff Elementary School	1	129	ROOM 1	No	No	FL	VFT	1	N/D	-	-	V/C BS18-01						
68933	Cardiff Elementary School	1	129	ROOM 1	No	No	FL	VFT	2	3% CHRYSOTILE	0 SF	G	V/C BS18-02			A			Abated 2016.
68934	Cardiff Elementary School	1	129	ROOM 1	No	No	FL	VFT	3	2% CHRYSOTILE	0 SF	G	V/C BS18-03			A			Abated 2016.
68892	Cardiff Elementary School	2		EXTERIOR	No	No	NA	RM		ASSUMED ACM	1	G	-			C			SAMPLE PRIOR TO RENOVATION
68893	Cardiff Elementary School	2		EXTERIOR	No	No	NA	WC		ASSUMED ACM	1	G	-			A, C			SAMPLE PRIOR TO RENOVATION

APPENDIX II
DRAWINGS



LEGEND

- 12578-12-01A ECOH Sample Locations
- 01-BS-01A Jacques Whitford Sample Locations
- # Ebase Number

CONFIRMED ACM

SYMBOL	DESCRIPTION
	Friable Asbestos-Containing Material
	Non-Friable Asbestos-Containing Material

For Detailed Information as to Location, Type, Quantity, Condition and Access to ACM, Please Refer to the Room-by-Room Sheets Provided in the Report.

Cardiff Elementary School

2 Short Road,
Cardiff, Ontario

First Floor Plan

Asbestos Materials Re-Assessment Survey

CLIENT: Trillium Lakelands District School Board

PROJECT NUMBER: 19359-12	DATE: September 2021	DRW BY: M. Pollock
SCALE: Not to Scale	CHK BY: K. Prosser	



APPENDIX III
POTENTIAL ASBESTOS-CONTAINING MATERIAL
IDENTIFICATION SHEET

APPENDIX III - POTENTIAL ASBESTOS-CONTAINING MATERIALS INFORMATION SHEET

<i>MIN</i>	<i>Material</i>	<i>Material Description</i>	<i>Size</i>	<i>Sample Number</i>	<i>Sample Location</i>	<i>Asbestos Containing</i>
VFT 1	Vinyl Floor Tiles	White and black	12" x 12"	BS18-01	Multiple	No
VFT 2	Vinyl Floor Tiles	Brown, white and red	9" x 9"	BS18-02	Science Room	Yes
VFT 3	Vinyl Floor Tiles	Beige with brown and red	9" x 9"	BS18-03	Science Room	Yes
VFT 4	Vinyl Floor Tiles	Dark brown	9" x 9"	BS18-04	Room 9	Yes
VFT 5	Vinyl Floor Tiles	Beige	9" x 9"	BS18-05	Room 9	Yes
VFT 6	Vinyl Floor Tiles	Black, white, and red	9" x 9"	BS18-06	Supply Room	Yes
VFT 7	Vinyl Floor Tiles	White with grey	12" x 12"	BS18-10	Room 11	No
VFT 8	Vinyl Floor Tiles	Green	12" x 12"	BS18-13	Custodial Room	Yes
VFT 9	Vinyl Floor Tiles	Beige Solid	12" x 12"	-	-	Assumed ACM
VFT 10	Vinyl Floor Tiles	White Mosaic	12" x 12"	-	-	Assumed ACM
VFT 11	Vinyl Floor Tiles	Beige Mosaic	12" x 12"	-	-	Assumed ACM
VSF 1	Vinyl Sheet Floor	Checker Pattern		BS18-11	Women's Staff Washroom	No
VSF 2	Vinyl Sheet Floor	Light Blue		BS18-12	Room 2	No
CT 1	Ceiling Tile	White holed pattern	1' x 1'	BS18-14	Hallway	No
CT 2	Ceiling Tile	Pinhole	2' x 4'	12578-12-01	Girls Washroom	No
CT 3	Ceiling Tile	Pinhole Fissure	1' x 1'	12578-12-02	Portable One	No
CT 4	Ceiling Tile	Pinhole	1' x 1'	12578-12-03	Portable One	No