



greenough environmental consulting

BROOKFIELD GLOBAL INTEGRATED SOLUTIONS

ANNUAL REASSESSMENT OF ASBESTOS-CONTAINING MATERIALS

C.D. HOWE BUILDING

240 SPARKS STREET, OTTAWA, ONTARIO

GEC Project No. 29702

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REPORT TO

BROOKFIELD GLOBAL INTEGRATED SOLUTIONS

MS. CATHY BORGIA
PROPERTY SERVICE COORDINATOR

ON

ANNUAL REASSESSMENT OF ASBESTOS-CONTAINING MATERIALS

C.D. HOWE BUILDING
240 SPARKS STREET
OTTAWA, ONTARIO

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EXECUTIVE SUMMARY

Greenough Environmental Consulting Inc. (GEC) was commissioned by Brookfield Global Integrated Solutions (BGIS) to conduct the annual reassessment of asbestos-containing materials (ACMs) within the C.D. Howe Building located at 240 Sparks Street in Ottawa, Ontario.

The annual reassessment is conducted to determine the condition of asbestos-containing materials (ACM's) previously identified in the Designated Substance Survey conducted in May 2007, as well as the asbestos update conducted in 2009. The reassessment was conducted to meet the requirements of Ontario Regulation 278/05 "Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations" made under the Occupational Health and Safety Act.

Mr. Duncan Barclay, Environmental Technician for GEC performed the site visits on February 28th and March 1st, 2017. Based on the site inspections, damaged ACMs in the form of mechanical pipe fitting insulation (parging cement) and firestop (parging cement) were identified within the C.D. Howe Building located at 240 Sparks Street in Ottawa, Ontario. The damaged ACM's were identified throughout the S-level as well as within select Electrical/Mechanical Rooms throughout the building, some of which accessible to occupants.

1.0 INTRODUCTION

Greenough Environmental Consulting Inc. (GEC) was commissioned by Brookfield Global Integrated Solutions (BGIS) to conduct the annual reassessment of asbestos-containing materials (ACMs) within the C.D. Howe Building located at 240 Sparks Street in Ottawa, Ontario.

The annual reassessment is conducted to determine the condition of those ACMs previously identified in the Designated Substance Survey conducted in May 2007 as well as the update conducted in 2009, and to meet the requirements of Ontario Regulation 278/05 “Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations” made under the Occupational Health and Safety Act. The purpose of the reassessment is as follows:

- Ensure building occupants and maintenance workers are not exposed to damaged asbestos-containing materials,
- Meet the requirements of the PWGSC Departmental Policy on Asbestos Management for government owned or leased buildings and facilities, which requires a reassessment of ACMs on an annual basis,
- Meet the requirements of Section 8 of Ontario Regulation 278/05 “Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations” made under the Occupational Health and Safety Act.
- Ensure the subject building remains, or is brought into compliance with provincial and federal asbestos regulations,
- Maintain a proactive management system that records the condition of asbestos-containing materials, and
- Identify areas that require repair and/or removal of damaged ACMs.

2.0 SCOPE AND METHODOLOGY

2.1 Scope of Work

As required by PWGSC DP 057 and O. Reg 278/05, accessible ACMs were assessed for current condition. GEC performed the site visits on February 28th and March 1st, 2017.

2.2 Methodology (per PWGSC DP 057)

2.2.1 Accessibility

Recommendations regarding the action to be taken have been determined, as outlined in the PWGSC Departmental Policy and Code of Practice, *“Evaluation of Asbestos Containing Materials (ACM) and Recommendations for Control.”* In accordance with the noted PWGSC policy, the accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

TABLE 1 ACCESSIBILITY CLASSIFICATIONS PER DP057	
ACCESS (A)	Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users may result in disturbance of ACM not normally within reach from floor level.
ACCESS (B)	Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, i.e., tops of equipment, mezzanines.
ACCESS (C) EXPOSED	Areas of the building above 8'0" where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently accessed service areas of the building.
ACCESS (C) CONCEALED	Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems. Includes rarely entered crawl spaces, attic spaces, etc. Observations are limited to the extent visible from the access points.
ACCESS (D)	Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall or equipment, etc., is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine the materials in Access D.

2.2.2 Action Matrix

In accordance with the noted PWGSC policy, the Action Matrix provided below establishes the recommended asbestos control action. The ACTIONS are described in full following the matrix.

TABLE 2 PWGSC ACTION MATRIX				
ACCESS	CONDITION			DEBRIS
	GOOD	FAIR	POOR	
(A)	ACTION 5/7 ¹	ACTION 5/6 ²	ACTION 3	ACTION 1
(B)	ACTION 7	ACTION 6/5 ³	ACTION 3	ACTION 1
(C) EXPOSED	ACTION 7	ACTION 6	ACTION 4	ACTION 2
(C) CONCEALED	ACTION 7	ACTION 7	ACTION 4	ACTION 2
(D)	ACTION 7	ACTION 7	ACTION 7	ACTION 7

¹ Material in **ACCESS (A)/GOOD** condition is not removed **ACTION 7** is required.

² Material in **ACCESS(A)/FAIR** condition is not removed **ACTION 6** is required.

³ Remove ACM in **ACCESS (B)/FAIR** condition if ACM is likely to be disturbed.

Action Definitions

ACTION 1 - Immediate Clean-Up of DEBRIS that is Likely to Be Disturbed

- Restrict access that is likely to cause a disturbance of the ACM **DEBRIS** and clean up ACM **DEBRIS** immediately. Utilize correct asbestos procedures. This action is required for compliance with regulatory requirements. The surveyor should immediately notify the Asbestos Coordinator of this condition.

ACTION 2 - Type 2 Precautions for Entry into Areas with ACM DEBRIS

- At locations where ACM **DEBRIS** can be isolated in lieu of removal or cleaned up, use appropriate means to limit entry to the area. Restrict access to the area to persons utilizing Type 2 asbestos precautions. The precautions will be required until the ACM **DEBRIS** has been cleaned up, and the source of the **DEBRIS** has been stabilized or removed.

ACTION 3 - ACM Removal Required for Compliance

- Remove ACM for compliance with regulatory requirements. Utilize asbestos procedures appropriate to the scope of the removal work.

ACTION 4 - Type 2 for Access into Areas Where ACM is Present & Likely to be Disturbed by Access

- Use Type 2 asbestos precautions when entry or access into an area is likely to disturb the ACM. **ACTION 4** must be used until the ACM is removed (Use ACTION 1 or 2 if **DEBRIS** is present).

ACTION 5 - Proactive ACM Removal

- Remove ACM in lieu of repair, or at locations where the presence of asbestos in **GOOD** condition is not desirable.

ACTION 6 - ACM Repair

- Repair ACM found in **FAIR** condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work treat ACM as material in **GOOD** condition and implement **ACTION 7**. If ACM is likely to be damaged or disturbed, during normal use of the area or room, implement **ACTION 5**.

ACTION 7 - Routine Surveillance

- Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precautions (Type 1, Type 2 or Type 3) during disturbance of the remaining ACM.

3.0 LIMITATIONS OF THE ASSESSMENT

The field observations are considered sufficient in detail and scope to form a reasonable basis for the reassessment and general asbestos hazard assessment of this property.

The evaluation is based only on accessible areas of the building. The methods of evaluation have been developed to provide the client with information regarding apparent indications of existing or potentially hazardous conditions relating to the asbestos-containing materials previously identified, and are limited to the conditions observed and information available at the time of the site visit. For the basis of this assessment, GEC relied on the ACMs identified in a previous designated substance survey conducted by GEC in May 2007 as well as the update conducted in 2009.

No access or limited access was obtained to the following locations within the subject building:

- Main Hydro Vault;
- Within Door Assemblies;
- Storage Rooms within S-1 Level with no key access; and
- Concealed Wall & Ceiling Cavities.

There is a distinct possibility that conditions may exist which could not be reasonably identified within the scope of the assessment or which were not apparent during the site visit. However, GEC cannot warrant or guarantee that the information provided is absolutely complete or accurate beyond the current asbestos consulting industry standards. No other warranties are implied or expressed.

4.0 FINDINGS

During the reassessment, ACMs in fair condition were observed within the C.D. Howe Building located at 240 Sparks Street in Ottawa, Ontario. A summary of the damaged ACMs observed during the reassessment are presented in **the tables below**.

- Table 3: Summary of damaged ACMs that are categorized as **ACTION 1**.
- Table 4: Summary of damaged ACMs that are categorized as **ACTION 2 - 6**.
- Table 5: Summary of newly discovered ACMs during this reassessment.

Table 3 – C.D. Howe – 240 Sparks St, Ottawa, ON – 2017 Asbestos Reassessment ACTION 1 - Immediate Clean-Up of DEBRIS that is Likely to Be Disturbed				
Floor	Location(s)	Material Description	Quantity	Recommendations
N/A	N/A	N/A	N/A	N/A

LM = linear metres ea = each m² = square metre

Table 4 - Summary of Damaged ACMs Identified 2017 Reassessment – ACTION 2 - 6 C.D. Howe – 240 Sparks St, Ottawa, ON						
Floor	Location(s)	Material Description	Quantity	Condition	Accessibility	Action Level
Loading Dock	Ramp	Firestop	1	Fair	B	6
P3 – P1	Various	Mechanical Fittings	5	Fair	CE	6
P3 – P1	Various	Firestop	5	Fair	B	6
S1	Outside S-125	Mechanical Fitting	1	Fair	B	6/5 ³
S1	Room S-105	Firestop	1	Fair	CE	6
2 nd	Room S-117	Firestop	1	Fair	CE	6
3 rd	B Mechanical Room 331	Firestop	1	Fair	CE	6

Table 4 - Summary of Damaged ACMs Identified 2017 Reassessment – ACTION 2 - 6

C.D. Howe – 240 Sparks St, Ottawa, ON

Floor	Location(s)	Material Description	Quantity	Condition	Accessibility	Action Level
4 th	B Mechanical Room 405	Firestop	2	Fair	CE	6
4 th	B Mechanical Room 405	Mechanical Fitting	1	Fair	CE	6
6 th	B Mechanical Room 605	Firestop	3	Fair	CE	6

LM = linear metres

ea = each

m² = square metre

Table 5 - Summary of newly Identified ACMs 2017 Reassessment

C.D. Howe – 240 Sparks St, Ottawa, ON

Floor	Location(s)	Material Description	Quantity	Recommendations
N/A	N/A	N/A	N/A	N/A

LM = linear metres

ea = each

m² = square metre

It should be noted that additional ACMs or asbestos-containing debris is expected to be present in concealed or inaccessible locations throughout the subject building. Quantities cannot be provided without conducting a destructive investigation.

Firestop: Refers to the asbestos-containing parging material in the wall cavities around pipes at wall penetrations.

* Should BGIS wish to encapsulate Firestop deemed to be in fair condition, ensure the encapsulate material is such that time and temperature will not transform the structure of the material and subsequently further damage the asbestos-containing Firestop (i.e., pull away from wall).

****Please note:** Various storage rooms on the S1 Level were inaccessible at the time of the inspection.

5.0 ABATEMENT STRATEGY

ACMs in FAIR condition observed in various locations throughout the building as indicated in **Table 4** GEC. recommends the repair to be completed by following Type 2 procedures. The required work comprises of encapsulating the noted materials within the building.

6.0 RECOMMENDATIONS

GEC recommends repair and/or removal of damaged ACMs identified in this document following appropriate procedures as outlined in Ontario Regulation 278/05.

GEC also recommends that the Asbestos Management Program for the C.D. Howe Building located at 240 Sparks Street be amended to ensure all applicable regulations and directives are addressed.

7.0 CLOSURE

This report was prepared by Greenough Environmental Consulting Inc. (GEC) for Brookfield Global Integrated Solutions (BGIS) and its intended use. This report may not be relied upon by any other person or entity without the written consent of Greenough Environmental Consulting Inc. (GEC) and BGIS.

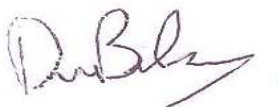
GEC accepts no responsibility for any use that an outside party makes of this report and any reliance on decisions made based on it are the responsibility of such parties.

The statements made in this report were based on visual inspections made on February 28th and March 1st, 2017 and reflect the best judgement of the Assessor on these dates. Limiting factors are presented within this document. All cost estimates provided are to be used for budget purposes only.

We trust this report meets your present requirements. If you have any questions please do not hesitate to contact the undersigned at any time.

Yours Truly,

GREENOUGH ENVIRONMENTAL CONSULTING INC.



Duncan Barclay
Environmental Technician



Michael P. Buller, B.A. (Hons), ROHT, CRSP, CMI
Vice President

APPENDIX #1 : PHOTO REFERENCES



Photo #1. Example of damaged paring cement fitting outside room S-125.



Photo #2. Example of damaged firestop Mechanical Room 331.