



SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

Simon Fraser University Asbestos Exposure Control Plan

Updated December 2021



Table of Contents

1 Introduction..... 1

2 Definitions 1

2.1 Asbestos..... 1

2.2 Asbestos-Containing Material 1

2.3 Clearance Air Sampling 1

2.4 Containment 1

2.5 Designated Work Area..... 1

2.6 Friable Material..... 1

2.7 Low Risk Work Activity..... 2

2.8 Moderate Risk Work Activity 2

2.9 High Risk Work Activity..... 2

2.10 Notice of Project for Asbestos (NOPA) 2

2.11 Qualified person..... 2

3 Potential Health Effects and Use of Asbestos 3

4 Asbestos Exposure Control Plan (AECPP) 3

4.1 Responsibilities..... 4

4.1.1 Environmental Health and Safety Department..... 4

4.1.2 Facilities Services 5

4.1.3 Contractors and Facilities Trades Personnel 6

4.1.4 Staff and Building Occupants 7

4.2 Identification and Labelling of Asbestos-Containing Materials..... 7

4.3 Asbestos Survey and Inventory 8

4.3.1 TMA 10

4.3.2 Internal Assessments 10

4.3.3 Re-surveys..... 10

4.3.4 Follow-up Concerns 11

4.4 Development of Safe Work Procedures 11

4.5 Air Sampling 11

4.6 Employee and Contractor Training..... 12

4.7 Waste Management..... 12

5 Reference Material and Applicable Legislation 13

Appendix A: Emergency Clean Up Procedures

Appendix B: Re-Assessment Plan



1 Introduction

At Simon Fraser University, there is a potential for workers, contractors and building occupants to be exposed to asbestos. Therefore, in accordance with WorkSafeBC requirements, SFU has established an Asbestos Exposure Control Plan. This plan addresses not only the effects that asbestos-containing materials will have on the routine maintenance of the building, but also the health and safety of the building occupants, staff and contractors involved with renovation work, general repairs and routine maintenance.

2 Definitions

2.1 Asbestos

Asbestos is a generic term used to describe a group of naturally occurring fibrous minerals, divided on the basis of their mineralogical properties, into serpentines (“S” shaped) and amphiboles (“needle like”). The most significant hazard of asbestos is the presence of long, thin fibres that can be easily separated into small respirable fibres.

2.2 Asbestos-Containing Material

Asbestos-containing material includes any manufactured article or other material, which contains at least 0.5 % or more asbestos by weight at the time of manufacture or as determined by test methods NIOSH 9000, NIOSH 9002 or by EPA/600/R-93/116, dated July 1993. Vermiculite insulation with any amount of asbestos is also considered an asbestos-containing material, as determined by EPA/600/R-04/004, dated January 2004.

2.3 Clearance Air Sampling

Clearance air sampling is performed to determine if the air inside a containment or asbestos remediation work area is sufficiently free of asbestos fibres to permit the dismantling of the containment.

2.4 Containment

A containment is an isolation system designed to effectively contain asbestos fibres within a designated work area where asbestos-containing material is handled, removed, encapsulated or enclosed, and includes a glove-bag.

2.5 Designated Work Area

A designated work area is an area for work with asbestos-containing material which is restricted to access by authorized persons by warning signs and by barricades, enclosures or other means of isolation, with due regard for the level of risk.

2.6 Friable Material

Friable material is asbestos-containing material that is crumbled or powdered or can be crumbled or powdered by hand pressure.



2.7 Low Risk Work Activity

Low risk work activity includes a work activity that involves or is within proximity to asbestos-containing material, where the material is not disturbed or impacted and there is no significant release of asbestos fibres. Examples include repairing drywall while not impacting the asbestos-containing joint compound, or replacing a single asbestos-containing vinyl floor tile without breaking the tile.

2.8 Moderate Risk Work Activity

Moderate risk work activity includes a work activity that involves the handling of asbestos-containing material or working in proximity to asbestos-containing material, where the material is disturbed or impacted and personal protective equipment or engineering controls are required to prevent worker exposure to airborne asbestos fibres, and where the activity is not otherwise classified as low or high risk activities. Examples include using hand tools to remove asbestos-containing vinyl floor tiles or using a snap cutter chain to snap cut an asbestos-containing transite rain water leader.

2.9 High Risk Work Activity

High risk work activity includes a work activity that involves working with or in proximity to asbestos-containing material if a high level of control is necessary to prevent exposure of a worker to airborne asbestos fibres. Examples include removing a large ceiling of friable asbestos-containing texture finish, or the removal and dismantling of a boiler with asbestos-containing refractory material.

2.10 Notice of Project for Asbestos (NOPA)

A Notice of Project for Asbestos (NOPA) is a document that must be submitted to WorkSafeBC at least 48 hours before starting any construction work that involves the disturbance of asbestos-containing materials, or the demolition, dismantling or repair of any part of a building or structure in which materials containing asbestos have been used or in which asbestos products have been manufactured.

2.11 Qualified person

A person who has education, training and experience in the management and control of asbestos hazards. Typically, this includes one of the following:

- 1) Certified Industrial Hygienist (CIG);
- 2) Registered Industrial Hygienist (ROH);
- 3) Registered Occupational Hygiene Technologist (ROHT);
- 4) Certified Safety Professional (CSP);
- 5) Canadian Registered Safety Professional (CRSP);
- 6) Asbestos Hazard Emergency Response Act (AHERA) Certified inspector (for building assessments only); or
- 7) Person(s) with extensive occupational health and safety experience.

3 *Potential Health Effects and Use of Asbestos*

Asbestos has been recognised as a health hazard for people employed in its production and processing for centuries. However, it was not until the late nineteenth century, with the onset of the Industrial Revolution, that its use became widespread. It was not until the early part of the twentieth century that the relationship between the use of asbestos and a variety of health effects became a source of concern to the medical profession.

Many serious, debilitating and often fatal diseases have been linked to the respiration of asbestos fibres. Although the mechanism of asbestos related diseases is still not fully understood, it is known that there is normally a long waiting (latency) period between the time of exposure and the occurrence of disease. This latency period can typically be between ten to over forty years. Asbestosis, mesothelioma and lung cancer are the diseases most commonly associated with asbestos exposure, although several other diseases have been linked to asbestos exposure.

The Ontario Royal Commission investigating the health risk of asbestos exposure concluded that the risk of contracting an asbestos related disease is negligible for building occupants or tenants but acknowledged that the risk for custodial and maintenance workers is higher. This is because maintenance workers are more likely to come into contact with and disturb asbestos-containing materials in the normal course of their work.

Asbestos is inexpensive to mine and has some very useful physical properties. As a result, it has been used in over 3000 different commercial products worldwide. Some of these physical properties include:

- High temperature resistance
- Tensile strength greater than steel
- Good soundproofing properties
- High chemical resistance
- Good electrical insulating properties
- Good mechanical strength

Asbestos has been widely used in building construction over many years and some uses continue today. Asbestos products are generally classed into two groups: friable and non-friable. Friable materials are those that, when dry, can be crumbled, pulverized or reduced to powder using moderate hand pressure resulting in the release of airborne asbestos fibres. The use of friable materials in construction is banned today but due to its widespread use in the past, these materials are still present in many buildings today. An asbestos-containing material that is considered to be non-friable may still become friable if handled in an aggressive manner such as cutting, drilling or sanding using power tools or if dropped from a height.

4 *Asbestos Exposure Control Plan (AECPP)*

The Asbestos Exposure Control Plan (AECPP) is intended to identify, assess and control any potential health hazard caused by the presence of asbestos in buildings on campus. The primary focus of the plan is to prevent harmful exposure of workers, students, contractors, and building occupants and visitors to airborne asbestos fibres.

The Asbestos Exposure Control Plan (AECPP) consists of the following elements:

1. Responsibilities and record keeping of the Environmental Health and Safety (EHS), Facilities Services, Residence and Housing Facility Managers/Coordinators, Department Managers and Supervisors, Maintenance Contractors, Consultants, and staff and building occupants;
2. Identification and labelling of asbestos-containing materials;
3. Maintenance of an inventory identifying asbestos-containing materials and their locations across the SFU campuses;
4. Development of safe work and decontamination procedures;
5. Air sampling;
6. Employee and Contractor training;
7. Waste management.

4.1 Responsibilities

4.1.1 Environmental Health and Safety Department

Overall responsibility and authority for the administration of the AECP has been assigned to the EHS Department. The EHS Program Manager will administer the AECP and is responsible for the following:

- a) Implement and manage the AECP in a conscientious manner and be qualified through training and experience in the safe handling of asbestos, in accordance with WorkSafeBC requirements.
- b) Ensure that all related documentation such as Notice Project Asbestos (NOPA), detailed work procedures, site specific risk assessment, etc. are submitted to EHS by Facilities Services prior to any asbestos disturbance activities taking place. Note: The NOPA and detailed site specific work procedures must also be submitted to WorkSafeBC prior to beginning work.
- c) Ensure that the location of asbestos-containing materials and presence of suspected asbestos-containing materials are documented in an asbestos inventory. The condition, friability and accessibility of asbestos-containing materials must be assessed to determine the potential for fibre release.
- d) Update the asbestos inventory when an adequately detailed clearance letter or completion report is provided to EHS from the qualified asbestos consultant or when new materials are identified.
- e) Inform building occupants and maintenance personnel as well as contracted trades about the presence and location of asbestos-containing materials through the identification system, and the Facilities Services WebTMA system for generating work orders.
- f) Develop and maintain written safe work procedures for all service and maintenance activities involving asbestos-containing materials.
- g) Review and update the Asbestos Exposure Control Plan on an annual basis.
- h) Respond to reports of asbestos damage by:
 - EHS or a consultant to visit the disturbance site for a visual inspection.
 - Restriction of access to the damaged materials.



- Work with Facilities Services to reach a consensus on assessment requirements.
 - When necessary, advise area occupants of work activity and organize information meetings.
- i) Review any projects requiring the disturbance of asbestos-containing building materials:
- Attend pre-construction meetings.
 - Organize an area walk-through with the Project Manager, Contractor and Campus Security to identify potential sources of adverse impact and potential problems.
 - Monitor the removal work for compliance with regulatory and SFU Environmental Health and Safety requirements.
- j) Maintain documentation, for a period of 10 years, of:
- Copies of all NOPAs
 - Inventory of asbestos-containing materials and their locations
 - Sample results and assessment reports
 - Work procedures and risk assessments
 - Inspection and completion reports
 - Copies of waste disposal manifests
 - Investigation reports

4.1.2 Facilities Services

4.1.2.1 Maintenance and Operations

The Facilities Services Project Managers are responsible for the following:

- a) Develop, budget for and implement an annual assessment program to monitor the condition of asbestos-containing materials throughout the buildings on the Burnaby campus and provide updates to EHS. This will include a reassessment of the potential hazards, remedial action as required and an update of the identification system. Damaged or deteriorated asbestos-containing materials must be promptly removed, enclosed or encapsulated to prevent the release of airborne asbestos fibres. This work must follow WorkSafeBC regulations and guidelines.
- b) Coordinate Facilities Operations removal contracts and emergency sampling with the asbestos consultant and the contractor and ensure that all asbestos-related documents are filed with EHS.
- c) Refer all asbestos-related enquiries to EHS.

4.1.2.2 Campus Planning and Development

Project Managers shall include all managers and coordinators/technologists that coordinate renovations, repairs, demolitions or other project related activities that may potentially disturb asbestos. Project Managers are responsible for the following:

- a) Be familiar with the presence and location of all the asbestos-containing materials on campus, the AECP and the labelling and identification system.

- b) Liaise with EHS to determine if asbestos is present in areas impacted by the project and when asbestos removal is proposed.
- c) Coordinate work activities with a qualified asbestos consultant and the contractor. Ensure that a risk assessment and detailed site-specific work procedures are filed with EHS and reviewed by a qualified asbestos consultant 48 hours prior to the application of an NOPA. Ensure that the detailed site-specific work procedures and NOPA are sent to WorkSafeBC and EHS 48 hours (2 business days) prior to the start of work.
- d) Ensure EHS is provided with a copy of the clearance letters or completion reports for every asbestos abatement project. Clearance letters and completion reports must be submitted by the qualified asbestos consultant to EHS.
- e) Monitor and review authorized project work performed by contracted trades or maintenance personnel, to ensure that their work activities are not disturbing asbestos-containing materials and that identifying labels are not being inadvertently removed, damaged or painted.
- f) Address issues of non-compliance raised by EHS.

4.1.3 Contractors and Facilities Trades Personnel

Contractors and Facilities Trades personnel are responsible for the following:

- a) Be made aware of the presence and location of all the asbestos-containing materials, the AECP and the labelling and identification system.
- b) Not be permitted to disturb any asbestos-containing materials, unless authorized by EHS.
- c) Be trained in the safe handling of asbestos, if required.
- d) Ensure that all work activities relating to asbestos-containing materials only proceed after being authorized by EHS.
- e) Only carry out renovation, routine maintenance or service work, which is likely to disturb asbestos-containing materials, after the work has been authorized by EHS.
- f) During projects involving the disturbance and/or removal of asbestos-containing materials, the abatement contractor must establish necessary engineering controls to reduce the airborne asbestos fibres as low as reasonably achievable.
- g) During projects involving the disturbance and/or removal of asbestos-containing materials, the abatement contractor must provide a viewing window accessible to EHS for inspections of the enclosure during regular work activities. The viewing window must be adequate for viewing the majority of work activities being conducted.

- h) Abatement contractors are responsible for monitoring the health of their staff, such as annual lung function testing and periodic chest X-rays.
- i) Immediately inform EHS if damage or disturbance of asbestos-containing materials occurs during the course of their work.
- j) Immediately inform EHS of any damaged asbestos-containing materials or debris is observed on campus.
- k) Not damage, remove, paint or otherwise interfere with the AECP Identification labels or system.

4.1.4 Staff and Building Occupants

Staff and other building occupants are responsible for the following:

- a) Being familiar with the presence and location of asbestos-containing materials and the AECP, including the labelling and identification system.
- b) Not disturbing asbestos-containing materials. This will prevent any asbestos fibres from being released.
- c) Not damaging, removing or painting over any of the AECP identification labels.
- d) Immediately informing EHS if any asbestos-containing materials are damaged or disturbed or the presence of debris.

4.2 Identification and Labelling of Asbestos-Containing Materials

An important part of the AECP is the physical identification of all the asbestos-containing materials on the Burnaby campus. To this end, all asbestos-containing materials must be outlined within the asbestos inventory database. The following friable and accessible asbestos-containing materials must be clearly labelled, where practicable:

- a) Cement Board
- b) Cement pipe
- c) Pipe insulation
- d) Black mastic on pipe insulation
- e) Spray insulation
- f) Texture coat/finish on ceilings & walls

The identification system informs building occupants, maintenance workers and contractors about the presence of asbestos-containing materials, not the absence. It is essential that such a system be accompanied by proper training for all contracted workers and maintenance staff.



Stylized “A” for friable materials

The labelling system uses a stylized “A” marked on the friable materials on campus. A sample of the Stylized “A” for friable materials identification labels is located above.

Any labelled material containing asbestos must not be disturbed until the work has been authorized by EHS. Only suitably trained and qualified personnel familiar with current asbestos safety precautions will be permitted to work on the material. Those materials not labelled or identified otherwise, shall be considered asbestos-containing until analysis of the suspect material determines otherwise.

Fire doors on campus are a suspect asbestos-containing material. Fire doors that have been tested for asbestos are labelled with either a green or a red sticker on the spine of the door. The green label indicates that the door does not contain asbestos. The red sticker indicated that the door does contain asbestos. If no label is present, the door must be tested to determine whether it contains asbestos prior to any work being conducted on the door. EHS maintains a list of all doors that have been tested for asbestos. A Protocol for Fire Doors Suspected of Containing Asbestos and Visual Inspection and Sampling of Fire Door Cores has been developed and is provided in Appendix B.

No asbestos-containing building materials are labeled on the Vancouver campus.

The labelling system will be updated and converted into an identification system using detailed keyplans for each building. The data for each room will be provided from the asbestos inventory database and a set of marked-up keyplans identifying the locations of known asbestos-containing materials will be stationed within each building.

4.3 Asbestos Survey and Inventory

An extensive non-destructive Asbestos Survey was conducted at Simon Fraser University and a room-by-room hazard analysis was performed to determine the presence and risk of asbestos-containing materials on campus. Although no immediate hazards exist, asbestos-containing building materials with a high potential for future disturbance have been abated and a long term Asbestos Management Program was established.



Another set of extensive non-destructive Asbestos Management Surveys has been conducted at Simon Fraser University. This set of surveys will update the inventory system and provide additional support to maintain a functional Asbestos Management Program.

Asbestos-containing materials (ACM) on the SFU campuses are primarily found in the following building materials:

- Texture coating and overspray.
- Stucco.
- Spray-applied fireproofing.
- Fumehood linings and ductwork.
- Air handling system duct mastic.
- Window caulking and glazing mastic.
- Expansion Joints.
- Mortar.
- Roofing mastic and membrane.
- Old lab counter tops, gloves and seat tops.
- Floor tiles, mastic and leveling compound.
- Sheet flooring and linoleum.
- Ceiling tiles.
- Building and underground piping systems.
- Insulation on pipe straights, pipe fittings and boilers.
- Gaskets.
- Firestop and electrical putty.
- Miscellaneous mastics and adhesives on walls, ceilings, and duct and pipe fiberglass insulation.
- Sink undercoating mastic.
- Stair tread and risers.
- Cement boards.
- Caulking.
- Drywall joint compound.
- Plaster (Base/Scratch & Skim/Top Coats)
- Fire door cores.

* Asbestos-containing wall, ceiling and floor finishes and concealed materials are not labeled as it is impractical to do so.

An asbestos identification system will revamp all of the labels on high risk materials and establish building-specific asbestos binders containing keyplan mapping of all known asbestos-containing materials within the building. This will be engaged by a consultant for all SFU buildings after the current round of asbestos management surveys have been conducted throughout the campuses and the room-by-room data has been entered by the consultant.

If any worker or contractor is unsure of a material they are working with or around, they must contact the SFU Project Manager, who can review the asbestos inventory database, request additional information from EHS, and engage a qualified consultant to assess the material prior to its disturbance. The



assessment of suspect materials must be conducted before undertaking any work, but it may have previously been assessed and EHS may have a record of it.

Due to the various and extensive renovations throughout the campus, the delineation of asbestos-containing drywall joint compound from non-asbestos can be very challenging. All drywall joint compound not previously assessed, must be assumed to be asbestos-containing. The policy is to have all drywall joint compound and any other suspect materials assessed prior to any renovation or disturbance project.

4.3.1 TMA

An inventory of asbestos-containing materials and their locations on campus is maintained in TMA. When a work order is printed for an area/room that contains asbestos, a section regarding the asbestos-containing materials will be included in both the building and room level. If it is determined that work in the area/room will not impact asbestos-containing materials then workers may perform their task, however they should still be aware of asbestos materials locations in the area/room. If work will impact the asbestos materials, workers must consult with their supervisor and EHS. Based on the work order review, EHS will conduct representative ride-along visits with Facilities Maintenance and Operations personnel to ensure their work is being conducted following appropriate safe work procedures when dealing with asbestos.

To ensure the asbestos inventory in WebTMA is up-to-date EHS will conduct monthly reviews of representative work orders. This will allow EHS to check if the asbestos-containing materials of specific locations are presented within the work order WebTMA system.

The WebTMA to Asbestos inventory database reviews and ride-along visits conducted by EHS will be performed based on the Qlikview work order reports.

4.3.2 Internal Assessments

Periodic condition assessments of all asbestos-containing materials are an integral and required part of the AECIP. The assessments conducted on a regular basis are intended to document the condition of these materials to determine if they are deteriorating or have become damaged since the previous inspection or Management Survey. The assessments are broken down into the following sections, and will be conducted by SFU staff with the appropriate training or qualified consultants:

- a) Service Rooms & Friable Asbestos-containing materials – Facilities Services inspections
- b) Common Areas – Environmental Health and Safety inspections
- c) Office Areas – Safety Committee building inspections

4.3.3 Re-surveys

SFU will retain a qualified consultant to conduct extensive non-destructive resurveys of the buildings within SFU campuses on an on-going basis. This will be conducted where the most up-to-date Management Survey does not accurately represent the baseline of current conditions within that building or where the Management Survey is out-dated.

4.3.4 Follow-up Concerns

Following an initial building material concern, EHS will review the inventory to determine if the material in question is asbestos-containing, assess the current condition of the material to establish the urgency of any follow-up actions required. If the situation is determined to be an emergency, EHS will restrict access to the area to prevent exposure and coordinate with Facilities Maintenance and Operations to contact a qualified hazardous building materials consultant and contractor to perform emergency clean-up. If the situation is not determined to be an emergency, then a general work order may be submitted to Facilities Maintenance and Operations to address the concern and depending on the nature, access may be restricted.

4.4 Development of Safe Work Procedures

Facilities Services personnel and contractors may have to work near or actually disturb asbestos-containing materials during the normal course of their work. In order for these workers to proceed in a safe manner, they must have adequate training and a risk assessment and safe work procedures will be developed and submitted with an NOPA. These procedures will include all work involving:

- Repair of damaged friable asbestos-containing materials.
- Working with asbestos-containing materials.
- Moderate and High Risk work procedures.
- Waste handling.

Contractors and Facilities Services personnel may be required to perform emergency work in areas where asbestos-containing materials are located. In these instances, the nature of the work will not permit compliance with all WorkSafeBC requirements insofar as notification of the work to be done is required. Notification will be done after the fact in these situations. Emergency clean-up procedures are provided in Appendix B. Bulk Sampling Procedures are provided in Appendix C.

The WorkSafeBC publication entitled Safe Work Practices for Handling Asbestos is an excellent resource and provides examples of detailed safe work procedures, including requirements for personal protective equipment, engineering controls and air monitoring. Please refer to the appendices for SFU specific work procedures and forms.

4.5 Air Sampling

The following air sampling is required by SFU for asbestos work activities considered to be moderate risk (or higher):

- Ambient air sampling throughout the duration of the work (outside the enclosure)
- Occupational air sampling, as specified by a qualified asbestos consultant;
- Clean room air sampling (during high risk abatement);
- Clearance air sampling, as required, prior to dismantling the enclosure and/or re-occupancy of the space;
- Additional air sampling, as required.

Air sampling results must be made available to the workers involved and SFU within 24 hours upon completing the collection of the samples.



4.6 Employee and Contractor Training

Asbestos Awareness training is a requirement for all Facilities Services staff and any individuals that may come into contact with asbestos-containing materials during the normal course of their work. The training for Facilities Services personnel that may inadvertently disturb asbestos-containing materials will typically be less involved than that of contracted workers, who will be required to show that they have had the relevant training. Facilities Services personnel will be required to recognise any damaged materials or debris that they may encounter and report their findings immediately to their supervisor and EHS. Facilities Services personnel are not to disturb any suspect asbestos-containing damaged materials or debris that they may encounter.

SFU is responsible for providing the assessment and identification of asbestos-containing materials within the work area to key personnel of the contractor. All contract employees working at SFU must request information about potential asbestos-containing materials within the work area, as well as ensure all of their employees and sub-contractors are aware of the hazards present within the work area.

All contractors who may be exposed to asbestos-containing materials must have an Exposure Control Plan of their own in place for their workers and be available to SFU upon request.

The Asbestos Awareness training campaign at SFU will be carried out by an asbestos specialist with expertise in the area and will include:

- An asbestos awareness campaign, including health effects and elements of risk.
- Legal requirements (WorkSafeBC regulations).
- Roles and responsibilities.
- Training in the use of protective clothing and equipment, work procedures and air monitoring.
- An awareness of the AECF.

Refresher training will be provided by EHS and is mandatory for all Project Managers and employees that may come into contact with ACMs during the course of their work.

4.7 Waste Management

All asbestos-containing materials will be bagged and labelled by the asbestos abatement contractor and will be disposed of in accordance with the current WorkSafeBC regulations and guidelines.

Asbestos waste includes:

- Asbestos-containing materials.
- Asbestos-contaminated debris.
- Disposable coveralls and boots used during asbestos work.
- Sponges and other disposable cleaning materials used during the work.
- Plastic drop sheets used during the work.
- HEPA vacuum bags used during the work.



Asbestos waste must be stored in a sealed, lockable container. It must be transported to the disposal facility by a licensed hazardous waste carrier for the Province of British Columbia in accordance with the requirements of the Ministry of the Environment Hazardous Waste Regulation.

The handling and loading of asbestos waste must be undertaken in accordance with established low risk procedures.

All asbestos waste shall be disposed of in a duly authorized hazardous waste landfill. In order to ship hazardous waste, the contractor must first obtain SFU's exclusive Special Waste Generator number. This number must accompany all waste generator manifests when material is being shipped for disposal.

The responsibility to complete the waste manifest for transportation is that of the owner (SFU), however this will be assigned to the Contractor conducting the work. EHS will retain one copy of the completed manifest.

5 *Reference Material and Applicable Legislation*

The following is a list of reference material and applicable regulations for further information:

- SFU Environmental Health and Safety
 - <http://www.sfu.ca/ehs.html>
- WorksafeBC OHSR Part 6
 - <http://www2.worksafebc.com/publications/OHSRegulation/Part6.asp#SectionNumber:6.16>
- WorkSafeBC Guidelines Part 6
 - <http://www2.worksafebc.com/publications/OHSRegulation/Part6.asp#SectionNumber:6.16>
- WorkSafeBC: Safe Work Practices for Handling Asbestos
 - http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/asbestos.pdf
- BC Hazardous Waste Regulation
 - http://www.bclaws.ca/Recon/document/ID/freeside/63_88_00

Appendix A

Emergency Response Procedures

Emergency Response Procedures

A number of precautions are required when damaged building materials are observed on campus. In the event of the discovery of damaged building materials, the following procedures are to be followed:

- a) Immediately restrict access and leave the area. This can be done by setting up warning/caution banner tape, signage and by closing the entryway(s), if applicable
- b) Notify your direct supervisor, Facilities Services and Environmental Health and Safety of the damage. The identification of the building name, room #, material type, as well as including any photos of the damage is very helpful.

**Program Manager, Hazardous Building Materials
Environmental Health & Safety
M: 236-881-8187**

**Director, Occupational Health & Trades Safety
Environmental Health & Safety
Tel: 778-782-4978**

**Environmental Health and Safety
Email: EHR-local@sfu.ca**

**Director, Maintenance & Operations
Facilities Services
Tel: 778-782-7248**

**Building Technologist, Maintenance & Operations
Facilities Services
M: 604-831-0154**

- c) Assist Facilities Services and Environmental Health and Safety by providing access to limited access areas, if applicable.

EHS and Facilities Services will arrange for the cleanup, removal and/or encapsulation of the hazardous material(s) by engaging an abatement contractor and qualified consultant.



RESTRICTED AREA
**AUTHORIZED
PERSONNEL ONLY**

FOR MORE INFORMATION CONTACT:

Facilities Services Service Desk

Service Desk: 778-782-3253

Building Technologist: 604-831-0154

Environmental Health and Safety

Group Email: EHR-local@sfu.ca

Program Manager: 236-881-8187



Appendix B
Re-Assessment Plan



Date:

SFU ASBESTOS REASSESSMENT PLAN

There are many asbestos-containing materials present within buildings occupied by SFU. These materials are identified within the asbestos inventory database found here:

- Public: <https://asbestosinventory.its.sfu.ca/>
- Administration (EHS use): <https://acm.its.sfu.ca/>

Part 1 – Implementation

An annual reassessment of asbestos-containing materials is to be performed by qualified SFU Staff and/or consultants. The reassessment checklists must be reviewed and compiled into a final report annually by the Program Manager of Hazardous Building Materials and/or a qualified consultant. These assessments must continue to be conducted for all buildings with identified asbestos-containing materials present until the full removal of all asbestos-containing materials within the building(s).

Breakdown of assessments

The assessment is split into three types of building spaces, as follows:

- A) Common Areas
- B) Offices
- C) Service Rooms

Part 2 – Re-Assessment

EHS or a qualified consultant will be assigned one or more of the above areas to conduct an annual material condition assessment.

The Program Manager of Hazardous Building Materials will create an inspections inventory in the University's asbestos database, generating a new template for the inspection checklists. The inspection checklists are provided to the assigned personnel for the inspection of the asbestos-containing materials within each building. Personnel conducting the inspections will be provided with an I-pad or other tablet



to complete the inspections using the University’s asbestos database system. These must be completed and by December 1st of each year.

During the reassessment, if damaged asbestos-containing materials are discovered they are to be immediately reported to Facilities Services for repair. Ensure the building name, room number, material type, and a photo of the damage is provided to Facilities Services for their direction.

The following is an example of an asbestos checklist generated from the asbestos inventory database:

Assessed	Name	Description	Type	Material	Present In Air System	Disturbance	Condition	Risk Control	Damage
	GH-02-01	Closed Office	Non-Friable	Window Mastic	No				
	GH-02-02	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-02-03	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-02-04	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-04-101	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-04-101	Greenhouse Laboratory	Non-Friable	Caulking	No				
	GH-02-05	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-02-06	Corridor	Non-Friable	Window Mastic	No				
	GH-02-07	Unisex Washroom	Non-Friable	Window Mastic	No				
	GH-01-03	Preparation Room	Non-Friable	Window Mastic	No				
	GH-01-03	Preparation Room	Non-Friable	Putty	No				
	GH-01-03	Preparation Room	Non-Friable	Window Putty	No				
	GH-01-01	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-01-01	Greenhouse Laboratory	Non-Friable	Caulking	No				
	GH-01-01	Greenhouse Laboratory	Non-Friable	Window Putty	No				
	GH-01-02	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-01-02	Greenhouse Laboratory	Non-Friable	Window Putty	No				
	GH-01-04	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-01-04	Greenhouse Laboratory	Non-Friable	Window Putty	No				
	GH-01-05	Greenhouse Laboratory	Non-Friable	Window Mastic	No				
	GH-01-05	Greenhouse Laboratory	Non-Friable	Window Putty	No				

Part 3 – Annual Report

The final annual assessment report will include a list of damaged materials identified, as well a numerical rating for the material condition, potential for disturbance and risk of control per room/area as depicted within the following tables:

Table 2a: Material Condition

Numerical Rating	Description of Current Condition	Qualitative Ranking
8, 9, 10	Surfacing material has no visible damage or small amounts of damage; covering on thermal system insulation is intact or has small amounts of damage; miscellaneous materials intact; no visible debris or small amounts of debris.	Good
4, 5, 6, 7	Surfacing material has moderate but not extensive amounts of visible damage; covering on thermal system insulation is cut or torn, exposing moderate but not extensive amounts of insulation; moderate but not extensive damage to miscellaneous materials such as floor tile; moderate but not extensive amounts of visible dust and debris.	Fair



1, 2, 3	Extensive damage to surfacing material; covering on thermal system insulation is cut or torn extensively and insulation itself is damaged; miscellaneous materials such as floor tile extensively damaged and underlying mastic exposed; extensive amounts of debris.	Poor
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Table 2b: Potential for Disturbance

Numerical Rating	Description of Potential for Disturbance	Qualitative Ranking
1, 2, 3	Material is not within reach or access to the area by workers or building occupants is less than once per month. Material is non-friable and in good condition.	Low
4, 5, 6, 7	Material is accessible or access to the area by workers or building occupants ranges from once per month to once per week.	Medium
8, 9, 10	Material is in a public area and is accessible or access to the area by workers or building occupants is more than once per week. Material present in air system/plenum.	High

Table 2c: Risk Control

Numerical Rating	Description of Risk Control per Room/Area
1	Immediate removal or clean up and/or repair of material is required.
2	Immediately restrict access. Schedule removal or clean up and/or repair or material within 30 days. For Control 2 the damaged materials must not pose a health risk to any adjacent occupants or immediate measures such as encapsulation or sealing of materials must be conducted to allow for scheduled repairs to occur.
3	Schedule removal or clean up and/or repair in a reasonable time frame.
4	Implement an Asbestos Management Plan. Plan must be in writing with material conditions to be inspected annually.

These numerical ratings will then be updated within the asbestos inventory database and a copy of the final reassessment report uploaded onto the building level for each building.

Re-assessment scope of work:

The EHS personnel will conduct a room-by-room assessment of all known asbestos-containing materials, but excluding materials within ceiling spaces.

The asbestos inventory database will be updated room-by-room with the last re-assessment date, as well as the report attached to the building level.

The materials will be assessed using the Asbestos Matrix in Tables 2a, 2b & 2c. (Matrix Tab)

Any material identified to have a Risk Control of 1, 2 or 3 will be forwarded to Facilities Services for remediation.

Friable and accessible asbestos-containing materials identified above ceiling spaces will be assessed by a consultant once

Scheduling scope of work:

The EHS personnel is responsible for scheduling their work one week in advance.

A scheduling email will go out to all departments within the area to confirm their acceptance of EHS personnel entering their workspace to conduct the assessment.

Any rooms or areas that were not able to be accessed, will be recorded. A list of these rooms will be broken down per building, and scheduled as its own separate assessment.

Reporting scope of work:

The EHS personnel is responsible for ensuring the asbestos inventory database is updated with their assessment report, as well as ensuring any damaged materials observed with a Risk Control of 1, 2 or 3 have been brought up to Facilities Services. Ensures their report from the previous week's assessment is updated within the asbestos inventory database.

Damaged materials observed with a Risk Control of 1, 2 or 3 have been brought up to Facilities Services for remediation.

Building Reassessment Time Estimates:

Burnaby Campus	Min Time	Max Time	Materials	Size	Access Restrictions
Academic Quadrangle	17	34	Pipe Insulation, Drywall, Plaster	Large	Yes
Animal Care Facility	2	2.5	Drywall	Small	Yes
Childcare Centre Building 1	1.5	2	Drywall	Small	No
Childcare Centre Building 2	1.5	2	Drywall	Small	No
Childcare Centre Building 3	0.5	1	Drywall	Very Small	No
Convocation Mall	1	2	Windows, Skylights, Suspect Pipes	Medium	No
East Concourse Cafeteria	1.5	2	Spray Insulation, Texture Coat, Gas	Small	Yes
Education Building	4	5	Floor Tile, Windows, etc.	Medium	Yes
Facilities Services Building	1	2	Drywall, Pipe Insulation, etc.	Small	Yes
Leslie & Gordon DFA	1.5	2	Drywall	Small	No
Lorne Davies Complex	6	8	Texture Coat, VSF, Drywall, Gas	Large	Yes

Maggie Benston Centre	10	20 Pipe Insulation (Straights & Fitting	Large	Yes
Robert C. Brown Hall	12	24 Pipe Insulation (straights & fitting	Large	Yes
Service Station	0.5	1 Drywall	Very Small	Yes
Science Research Annex	1	1.5 Unknown	Small	Yes
Shrum Science Building B	7	14 Texture Coat, Pipe Insulation (Fitti	Large	Yes
Shrum Science Building C	6	12 Pipe Insulation, Transite Pipes, Dr	Large	Yes
Shrum Science Building K	8	16 Suspect Pipe Insulation & Insulatic	Large	Yes
Shrum Science Building P	6	12 Transite pipes & fume hoods, Text	Large	Yes
Strand Hall	5.5	11 Transite pipes & boards, Drywall	Large	Yes
Strand Hall Annex	1	2 Drywall	Small	Yes
The Water Tower Building	2	3 Pipe Insulation, Drywall	Small	Yes
The Water Tower	1	1.5 Drywall	Small	Yes
Transit Loop Building	0.5	1 Unknown	Small	Yes
Transportation Centre	3	4 Pipe Insulation (Straights & Fitting	Small	Yes
W.A.C. Bennett Library	9	18 Pipe Insulation, Texture Coat, Gas	Large	Yes
West Mall Centre	12	24 Pipe Insulation (Fittings)	Large	Yes
West (Visitor's) Parkade	1	1.5 Unknown	Medium	No
Shell House Residence	8	10 Texture Coat & Pipe Insulation	Large	Yes

Vancouver Campus	Min Time	Max Time	Materials	Size	Access Restrictions
Harbour Centre	22	44	Drywall, VSF, Brick Mortar	Large	Yes

	Min Time	Max Time	Avg Time
Total Time Required (Hours):	153	283	218.0
Total Time Required (Days):	38.3	70.8	54.5

Weekly Rate = 1
Annual rate = 36

	Min Time	Max Time	Avg Time
Re-Assessment Rate (years) =	1.06	1.97	1.51

of Buildings Assesse 16-29

Reassessment time increase indicators:

Presence of ACM Drywall and/or Plaster.

Access Restrictions.

Building Additions.