Asbestos Management Program

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Contents

SCOPE

This document applies to all members of the University community, including contractors performing work at the request of the University of Ottawa.

OBJECTIVE

The objective of the Asbestos Management Program is to prevent the accidental release of asbestos fibres and implement the prescribed procedures to ensure the health and safety of the campus community during work involving asbestos-containing materials. These procedures are applicable to all work involving asbestos-containing material, including normal building operations, maintenance, repair, renovation and/or demolition.

The purpose of this document is to acquaint all workers, contractors, employees of contractors and personnel of the University of Ottawa to the actual or potential presence of asbestos within the University of Ottawa buildings and the procedures required when performing work that may have asbestos implications. The Asbestos Management Program has been established to maintain a healthy and safe work environment for the University of Ottawa's community, including workers, students, contractors and members of the public. Procedures contained herein are mandatory; failure to follow them may result in disciplinary measures in accordance with collective agreements, removal from site, potential exclusion from future work or other internal sanctions at the discretion of the University of Ottawa.

This document was created and revised according to the Ontario Regulation 278/05 – Asbestos on Construction Projects and in Buildings and Repair Operations, and is the fifth version of the Asbestos Control Program (2001). Regulation 278/05 defines types of work, includes prescribed work procedures and enhanced respiratory protection for workers who may encounter asbestos in the course of their work. This program will endeavour to provide further information related to the institutional practices and presence of asbestos-containing materials.

The University of Ottawa does not support the use of asbestos in construction projects and will strive to expand planned asbestos abatement projects to the extent reasonably feasible in order to reduce the campus inventory of asbestos-containing materials.

DEFINITIONS

Asbestos – any of the fibrous silicates, including actinolite, amosite, anthophyllite, chrysotile, crocidolite and tremolite.

Asbestos-containing material – a material that contains 0.5 per cent or more asbestos by dry weight.

Building Management Agent – see ***Facility Manager***.

Competent worker – a worker who,

- is qualified because of knowledge, training and experience to perform the work;
- is familiar with the Act and with the provisions of the regulations that apply to the work; and
- has knowledge of all potential or actual danger to health or safety in the work.

Demolition – dismantling or breaking up.

Designated substances reports (DSR) – a document defining the type, estimated quantity and location of asbestos for the building in question.

Facility Manager – a dedicated resource within a faculty or service managing building-related services, spaces and utilization.

Friable material – a material that:

- when dry, can be crumbled, pulverized or powdered by hand pressure; or
- is crumbled, pulverized or powdered.

HEPA Filter – a high efficiency particulate aerosol filter that is at least 99.97 per cent efficient in collecting a 0.3-micrometre aerosol.

Homogeneous material – a material that is uniform in colour and texture;

Joint Health and Safety Committee – a committee established under section 9 of the *Ontario Occupational Health and Safety Act*.

Non-friable material – a material that maintains its shape when pressure is applied.

Type 1 work

The following are ***Type 1 (lower risk)*** operations:

- Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- Installing or removing non-friable asbestos-containing material, other than ceiling tiles, if the material is installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the material is wetted to control the spread of dust or fibres, and the work is done only by means of non-powered hand-held tools.
- Removing less than one square meter of drywall in which joint-filling compounds that are asbestos-containing material have been used.

Type 2 work

The following are ***Type 2 (moderate risk)*** operations:

- Removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely to be lying on the surface of the false ceiling (referred throughout this document as "**limited Type 2 operation"**).
- The removal or disturbance of one square metre or less of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment or a building, aircraft, locomotive, railway car, vehicle or ship.
- Enclosing friable asbestos-containing material.

- Applying tape or a sealant or other covering to pipe or boiler insulation that is asbestos-containing material.
- Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area of 7.5 square metres or more and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if, the material is not wetted to control the spread of dust or fibres, and the work is done only by means of non-powered hand-held tools.
- Removing one square metre or more of drywall in which joint filling compounds that are asbestos-containing material have been used.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.
- Removing insulation that is asbestos-containing material from a pipe, duct or similar structure using a glove bag.
- Cleaning or removing filters used in air handling equipment in a building that has sprayed fireproofing that is asbestos-containing material.
- An operation that is not mentioned that may expose a worker to asbestos and is not classified as a Type 1 or Type 3 operation.

Type 3 work

The following are ***Type 3 (higher risk)*** operations:

- The removal or disturbance of more than one square metre of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of a building, aircraft, ship, locomotive, railway car or vehicle or any machinery or equipment.
- The spray application of a sealant to friable asbestos-containing material.
- Cleaning or removing air handling equipment, including rigid ducting but not including filters, in a building that has sprayed fireproofing that is asbestos-containing material.
- Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refractory materials that are asbestos-containing materials.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.
- Repairing, altering or demolishing all or part of any building in which asbestos is or was used in the manufacture of products, unless the asbestos was cleaned up and removed before March 16, 1986.
- Work on ceiling tiles, drywall or friable asbestos-containing material is classified according to the total area on which work is done consecutively in a room or enclosed area, even if the work is divided into smaller jobs.

In the event of a dispute regarding the classification of an asbestos work operation:

- A party to the dispute may notify an inspector at the office of the Ministry of Labour nearest the workplace of the dispute;
- The party who notifies the inspector shall promptly inform the other parties that the inspector has been notified;
- Work on the operation shall cease until the inspector has rendered a decision;
- The inspector shall, as soon as possible, investigate the matter and give the parties a decision in writing.

Nothing in the abovementioned dispute subsection affects an inspector's power to issue an order for a contravention of the Act or Regulation.

Waste container – a container that is suitable for asbestos waste, is impervious to asbestos fibres, is dust tight, is cleaned with a damp cloth or HEPA vacuumed immediately before being removed from the work area and removed at frequent intervals.

HISTORY

Asbestos is a remarkable, naturally occurring material comprised of magnesium and calcium silicates. It is flexible, strong, heat and chemically resistant. All forms of asbestos are hazardous and carcinogenic. Asbestos can be found in a multitude of building materials, including but not limited to piping, insulation, transite, ceiling / floor tiles, plaster, drywall joint compound, vinyl sheet flooring, adhesives / mastics, sealants, fire stopping material, gaskets, wire insulation, embedded products (laboratory benches, fume hoods, etc.), asbestos paper, sprayed insulation (including stipple, fireproofing, etc.), parging cement, magnesia (mag) block, corrugated paper, vermiculite, roofing felt and asphalt.

Because of its physical properties, availability and inexpensive nature, asbestos was widely used in construction materials for decades. Health effects related to the use of asbestos in the modern world became more apparent and by the latter part of the 20th century, the use of asbestos was heavily restricted, and in some jurisdictions, completely banned. Canada continued to mine asbestos up until 2011 and export the material to other countries. As a result, manufactured textiles and materials from other countries that were imported back into Canada had the potential to contain asbestos, which may have been used in various construction materials.

In October 2018, the Federal Government implemented a legislation that further restricted asbestos use and importation to Canada. The legislation prohibits the importation, sale and use of asbestos fibres and the manufacture, import, sale and use of products containing processed asbestos fibres. As a result, dates associated with the cessation of asbestos in construction in Canada (e.g. 1970's, 1980's) are unreliable, as imported products may have been used in construction materials. The exclusive means of confirmation is to sample and analyze suspect materials.

ROLES AND RESPONSIBILITIES

PRIOR TO CONDUCTING ANY WORK, THE PERSON COORDINATING WORK SHALL CONSULT THE APPROPRIATE DESIGNATED SUBSTANCES REPORT(S) AND RELEVANT AMENDMENTS. THESE REPORTS, ALONG WITH THE ASBESTOS MANAGEMENT PROGRAM, MUST BE READ IN CONJUNCTION WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT, IN PARTICULAR, REGULATION 278/05.

University of Ottawa

The University of Ottawa has the greatest responsibility for its premises and accountabilities it carries. The duties required of the University of Ottawa will be carried out through their appropriate agents. As such, the University of Ottawa shall, before requesting tender or arranging work for the demolition, alteration or repair of all or part of machinery, equipment, or a building:

- Carry out an examination in order to establish whether any material that is likely to be handled, disturbed or removed during the project is asbestos-containing. If the status of the material is known or is treated as asbestos-containing material, no examination is required.
- Prepare a report:
    - Stating whether the material is asbestos-containing, or that the work is to be performed in accordance with Regulation 278/05 as though the material were asbestos-containing material;
    - Describing the condition of the material;
    - Stating whether the material is friable or non-friable; and
    - Containing drawings, plans and/or specifications to show the location of the asbestos-containing material.
- Provide any prospective constructor a copy of the complete report.

Asbestos Control Team

Facilities has established an asbestos control team to ensure that the University meets its obligations under the regulation. The team manages the operational requirements of the Asbestos Management Program and consists of the following personnel:

Senior Director, Operations (Facilities) – responsible for all aspects of the Asbestos Management Program and may serve as a resource person available to support the Asbestos Management Program with specific operational, day-to-day activities. May be required to provide assistance in the absence of the Asbestos Coordinator. Responsible for supporting the Asbestos Coordinator in the execution of his/her activities.

Asbestos Coordinator (Facilities) – responsible for implementing all aspects of the Asbestos Management Program. This may include, but is not limited to the following duties:

- Management of asbestos-related work in both capital projects and day-to-day operations;
- Acting as a subject matter expert on matters relating to asbestos, including providing guidance to project managers and persons coordinating asbestos-related work;
- Maintaining an updated inventory of asbestos-containing materials;
- Providing the necessary notifications regarding the presence of asbestos in buildings to stakeholders (such as Facility Managers);
- Providing the necessary notification of asbestos-related work to stakeholders (such as Facility Managers, building occupants, health and safety committees, Office of Risk Management, Health and Wellness, etc.);
- Investigating and reporting on asbestos-related reports (such as non-compliances, exposures, etc.);
- Responding to asbestos-related questions;

- Other related duties.

The Asbestos Coordinator is the Facilities Health and Safety Officer and can be contacted at prs.safety@uottawa.ca.

Director, Construction (Facilities) – resource person available to support the Asbestos Management Program, with specification for construction and capital projects. May be required to provide assistance in the absence of the Asbestos Coordinator and/or the Senior Director, Operations. Responsible for supporting the Asbestos Coordinator in the execution of his/her activities.

Auxiliary Resources

Additional services on campus with involvement in the Asbestos Management Program include:

Protection Services

- First responders to emergencies on campus;
- In the context of the Asbestos Management Program, contraventions reported to Protection Services will result in the establishment of a containment zone. This may include the securing of card access systems, physically restricting access to an area, etc.

Office of Risk Management

- Subject matter experts for environmental and occupational health and safety legislation;
- Advise regulatory authorities (including the Ministry of Labour) when required by law and liaise with same;
- Participate in the development and review of the Program;
- Coordinate training workshops for the campus community;
- Conduct awareness workshops for the campus community (as applicable);
- Engage occupational health and safety committees in the Asbestos Management Program.

Individuals

Persons responsible for work (example – project managers, persons arranging or coordinating work, etc.)

- Consult designated substances reports prior to the tendering of work;
- Consult Asbestos Coordinator prior to the tendering of work;
- Provide designated substances reports to prospective contractors – manage records associated thereto;
- Ensure that work is performed by qualified/certified personnel;
- Communicate upcoming asbestos-related work to Facility Managers and Asbestos Coordinator;
- Forward asbestos-related documentation (such as sampling results, abatement reports, worksite inspection records, etc.) to the Asbestos Coordinator;
- Ensure adherence of projects under their authority to the Asbestos Management Program;
- Monitor adherence to site safety plan, including asbestos-related requirements, for projects under their authority.

Facility Manager

- Communicate asbestos-related work to occupants of the affected building(s);
- Have an awareness of asbestos and presence thereof within their area(s) of responsibility;
- Ensure that building-related work be performed by approved services (such as Facilities, TLSS, IT, etc.) and is in accordance with applicable University policies;
    - If work is not conducted via Facilities:
        - Consult designated substances reports prior to the tendering of work;
        - Consult the Asbestos Coordinator prior to the tendering of work;
        - Provide designated substances reports to prospective contractors – manage records associated thereto;
        - Ensure that work is performed by qualified/certified personnel;
        - Communicate upcoming asbestos-related work to Facility Managers and the Asbestos Coordinator;
        - Forward asbestos-related documentation (such as sampling results, abatement reports, worksite inspection records, etc.) to the Asbestos Coordinator;
        - Ensure adherence to the Asbestos Management Program for projects under their authority;
        - Monitor adherence to site safety plan, including asbestos-related requirements, for projects under their authority.

LEGISLATION

Most jurisdictions have asbestos control legislation; in Ontario, the asbestos-related requirements are prescribed in Regulation 278/05 – Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act. The regulation defines – among other criteria – the types of asbestos-related work, duties of workplace parties, prescribes work procedures, training requirements and includes procedures for sampling.

Asbestos exposure limits are defined in Regulation 833 – Control of Exposure to Biological or Chemical Agents and are universal for all forms of asbestos. The occupational exposure limit (time-weighted average) is 0.1 f/cc.

In situations lacking specific regulation, the employer has a general duty under the *Occupational Health and Safety Act* to take every precaution reasonable in the circumstances for the protection of a worker.

HEALTH EFFECTS

In 1981, the *Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario* was established to study risks to workers and building occupants. The commission considered friable asbestos material (i.e. the most prone to dust) and included operational, renovation and demolition activities. The Commission concluded that while asbestos causes serious health problems, it does not pose a significant problem for the general occupants of a building, except when/if:

- An occupant is in immediate vicinity of work that disturbs asbestos; or
- An occupant is within range of air circulation of such work; or

- Significant quantities of friable insulation have fallen onto building surfaces and are being disturbed.

There are two kinds of exposures for any hazardous material – acute and chronic. Asbestos fibres are harmful if inhaled chronically; that is, frequently over long periods and can result in diseases of the lungs like asbestosis, mesothelioma and cancer, several years (e.g. 20-50 years) following initial exposures. The primary route of exposure for asbestos-related illnesses is inhalation. Asbestos fibres are not harmful if fibres are not disturbed and remain within their matrix.

Potential health effects[1,2] associated with asbestos exposure include:

- **Asbestosis** – a scarring of the lungs, which is not a cancer. This occurs when asbestos fibres are deposited in the lungs and bodily defences (macrophages) attempt to digest the fibres. Scar tissue forms, which results in laboured breathing and heart stress (similar to silicosis and black lung). Asbestosis is associated with high levels of exposure for prolonged periods.
- **Lung cancer** – a lower level of exposure than that of asbestosis, the link between asbestos and lung cancer only became evident after dust control measures were put in place and deaths from asbestosis began to decline. Survival rate is in general very low and may not be related to asbestos exposure (e.g. smoking).
- **Mesothelioma** – a form of cancer affecting the lining of the chest or abdominal cavity, the only known cause is exposure to asbestos. It is the most commonly observed asbestos-related illness and is generally fatal within two years of contracting the disease.
- **Pleural plaques** – characterized by areas of fibrous thickening on the lining of the lungs or diaphragm, the condition typically arises well past asbestos exposure (e.g. 30 years). The plaques calcify over time, but generally do not cause long-term health problems and are benign (e.g. not cancerous). While there are no symptoms, some patients impacted describe pain or an uncomfortable grating sensation as they breathe.
- **Asbestos warts** – occur when asbestos fibres become lodged in the skin. The body will try to heal by growing over the fibre, trapping the fibre under the skin. These callous-like warts continue to grow until treated. The condition is benign.
- **Other cancers (larynx, colon, etc.)** – while a less-established relationship, cancers of the larynx and colon have been reported to be associated with asbestos exposure.

University of Ottawa workers suspecting any exposure are recommended to present themselves to the Health and Wellness Office at Human Resources.

BUILDING OPERATIONS

Building operations can be divided into three main groups:

- Regular maintenance;
- Planned repair, renovation and capital projects; and
- Building occupant activities.

[1] Health Canada – Health Risks of Asbestos
[2] Canadian Centre for Occupational Health and Safety – Asbestos – Health Effects

Regular Maintenance
The work practices undertaken by building maintenance staff or as part of normal building repair or maintenance work are covered under Ontario Regulation 278/05. These activities are most likely to fall under Type 1 or Type 2 work. **The employees of the University of Ottawa will perform only Type 1 and limited Type 2 operations.** All other Type 2 and Type 3 operations are restricted to specialized contractors, who are contracted specifically for the purpose of asbestos management. Type 2 and Type 3 work involves further specialized procedures and equipment. Please consult with the Asbestos Coordinator for more information on Type 2 and Type 3 work.

In order to ensure that maintenance operations consider asbestos-containing material, the supervisor of the project or operation must implement systems that check for the initial presence of asbestos-containing material and allow proper action to manage such material. These systems are monitored by the Asbestos Coordinator and may include, but are not limited to, verification of previously conducted assessments, project-specific sampling activities, visual inspections, consultation with specialized asbestos consultants, follow-up investigations, etc. Regular maintenance operations that could disturb asbestos-containing materials can be divided into further subgroups:

1. Mechanical installations, investigations and/or repairs;
2. Electrical, mechanical or other work above suspended ceilings in areas where sprayed asbestos may be present (e.g. stipple coat, insulation, etc.);
3. IT cabling work; and
4. Custodial services.

Supervisors and lead hands who assign tasks to workers must be aware of the presence of asbestos and the implications of the asbestos-containing material on the scope of work. Supervisors and maintenance workers will require training in asbestos operations in order to properly identify suspect materials, supervise the work and implement the necessary hazard controls.

Although custodial work will rarely affect asbestos-containing materials, custodial workers and supervisors should be aware of these materials and their potential presence. Custodial activities should be reviewed to ensure that asbestos-containing material is not being disturbed. The housekeeping personnel shall not carry out the cleaning of potential asbestos-containing material.

Planned Repair, Renovation and Capital Projects
The presence and condition of asbestos must be considered by all project managers in the development of the various repairs and renovation contracts tendered by the University.

Asbestos considerations must be addressed at the project design stage. The asbestos surveys and amendments must be reviewed (and updated, where required). These activities must include a review of asbestos precautions or abatement procedures that are to be undertaken in conjunction with the project. The possibility of expanding the scope of asbestos abatements related to the project should be considered, where feasible. The Asbestos Coordinator will then be able to determine whether the abatement specifications and work can be prepared and conducted internally (i.e. a Type 1 or limited Type 2 project) or whether the scope and execution of work warrants the services of an asbestos abatement consultant.

Building Occupant Activities
Although the activities of the buildings' occupants are difficult to monitor, the likelihood of the disturbance of asbestos-containing material will be reduced when building occupants are aware of the location and condition of the material.

Occupants have the right to be informed of the asbestos survey results and upcoming asbestos-related work, therefore the Asbestos Coordinator will ensure that the building(s) occupants – via their Facility Manager or Building Management Agent – are notified in a straightforward manner and that the information on asbestos (including any hazard assessment) be made available. By providing useful information on the health effects and potential hazards of the asbestos-containing materials, the incidence of disturbance (accidental or vandalism) can be significantly reduced. Frequently asked questions related to asbestos at the University of Ottawa are included in Appendix 1.

The Asbestos Coordinator is responsible for the fielding, documenting, and responding to questions from occupants related to asbestos. Certain questions may need to be referred to (as necessary):

- Supervisor or Project Manager of the project;
- Senior Director, Operations (Facilities);
- Director, Construction (Facilities);
- Director, Health and Wellness (Human Resources);
- Assistant Director, Occupational Health and Safety (Office of Risk Management).

Health and Safety Committees
In accordance with the Ontario Occupational Health and Safety Act, the Occupational Health and Safety Committee has the right to:

e) Obtain information from the constructor or employer concerning the conducting or taking of tests of any equipment, machine, device, article, thing, material or biological, chemical or physical agent in or about a workplace for the purpose of occupational health and safety; and

f) Be consulted about, and have a designated member representing workers present at the beginning of, testing referred to in clause (e) conducted in or about the workplace if the designated member believes his or her presence is required to ensure that valid testing procedures are used or to ensure that the test results are valid.

The respective health and safety committee will be advised, and invited to participate where so prescribed, of workplace sampling, commissioning of designated substances reports, program updates, training workshops and other associated components of the Asbestos Management Program. The Asbestos Coordinator will facilitate the involvement of the committee(s).

ASBESTOS SURVEYS

In 1992, an asbestos site assessment was performed and the Dames and Moore Report was prepared identifying a list of asbestos-containing locations around the campus.

In accordance with Ontario Regulation 278/05, an updated inventory of asbestos-containing material at the University of Ottawa was completed, which included the type, estimated quantity, location and condition of asbestos-containing material. The project involved the obtaining of bulk material samples representative of distinct building materials. The inventory encompassed all

factors originally noted in existing reports and concentrated on any signs of deterioration, delaminating or disturbance by maintenance, renovation or occupant activity.

It must be noted that the inventory project was conducted in a non-destructive fashion; therefore, if there are previous layers of building materials (such as walls, floors, etc.), it is prudent to ensure that the necessary information is available and communicated to the necessary parties (including contractors, subcontractors, etc.) prior to the commencement of the project. If there are suspect additional layers and there is no information available, the supervisor / project manager must arrange sampling of the suspect sub-layer(s).

The inventory is managed by Facilities and includes student residences and leased buildings. These reports, as well as subsequent amendments, are available in full, from Facilities. A summary table intended to identify locations with asbestos-containing materials is provided in Appendix 2. This table takes into account the areas where asbestos was found during the site investigations and sampling campaign. **Prior to conducting work, consult the appropriate asbestos report(s) from Facilities. If information is not available for the subject space or area, sampling must be conducted before further work pursues.**

Process for Adding New Buildings to the Campus Inventory
New buildings owned by the University of Ottawa will be added to the asbestos program in the following fashion:

1. The Asbestos Coordinator will formally request – from the Facilities Project Manager – written confirmation from the designer (architect or otherwise) of the building, confirming that materials containing asbestos were not used in the construction of the building. Formal communication on the matter will be included as part of the Asbestos Management Program files as records of the asbestos inventory (if any).
2. If information provided does not satisfactorily address asbestos inventory concerns, Facilities will conduct sampling for the homogeneous materials of the building in question.

Process for Leased Buildings to the Campus Inventory
The Real Estate and Properties Specialist from Facilities will request information related to the presence of asbestos in buildings leased to the University of Ottawa. Information obtained from the leased building's owner will be forwarded to the Asbestos Coordinator and added to the Asbestos Management Program as the information of records.

Sampling Methodology
It is insufficient to obtain a single sample from a random location, analyze that sample and (if negative) declare the material asbestos-free. Regulation 278/05 prescribes the sampling methodology, which shall be in accordance with the standard **U.S. Environmental Protection Agency. Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials. June 1993.**

The sampling procedures required are carried out on bulk material samples that are randomly collected by a competent worker and are representative of each area of homogeneous material. The minimum number of bulk material samples to be collected from an area of homogeneous material is set out in Table 1 of Regulation 278/05, which is reproduced below.

Item	Type of Material	Size of Homogeneous Material Area	Minimum Number of Bulk Material Samples
1	Surfacing material, including without limitation material that is applied to surfaces by spraying, by trowelling or otherwise, such as acoustical plaster on ceilings and fireproofing materials on structural members.	Less than 90 square metres.	3
		90 or more square metres, but less than 450 square metres.	5
		450 or more square metres.	7
2	Thermal insulation, except as described in item 3.	Any size.	3
3	Thermal insulation patch.	Less than 2 linear metres or 0.5 square metres	1
4	Other materials.	Any size.	3

For example, if there are multiple types of ceiling tiles in the area, the minimum number of samples prescribed must be collected from each unique type of ceiling tile.

If laboratory analysis establishes that a bulk material sample contains 0.5 percent (%) or more asbestos by dry weight, it is not necessary to analyze other bulk material samples taken from the same area of homogeneous material (positive stop). The entire area of homogeneous material from which the bulk material sample was collected is deemed asbestos-containing material. In other words, several negative samples are required for a suspect material to be considered non-asbestos-containing. All reports on asbestos sampling / analysis must be sent to the Asbestos Coordinator.

The University of Ottawa will engage competent consultants to perform asbestos sampling activities. Approved consultants to perform such work will be established under a vendor of records. Consult the Asbestos Coordinator for vendors of records.

Archibus

Results of sampling activities and status of individual buildings and rooms are maintained in a web-based platform, known as *Archibus – Clean Building* module. Information is populated by the Asbestos Coordinator and is visually displayed to the end user. Archibus includes identification for asbestos and certain other designated substances (e.g. lead paint).

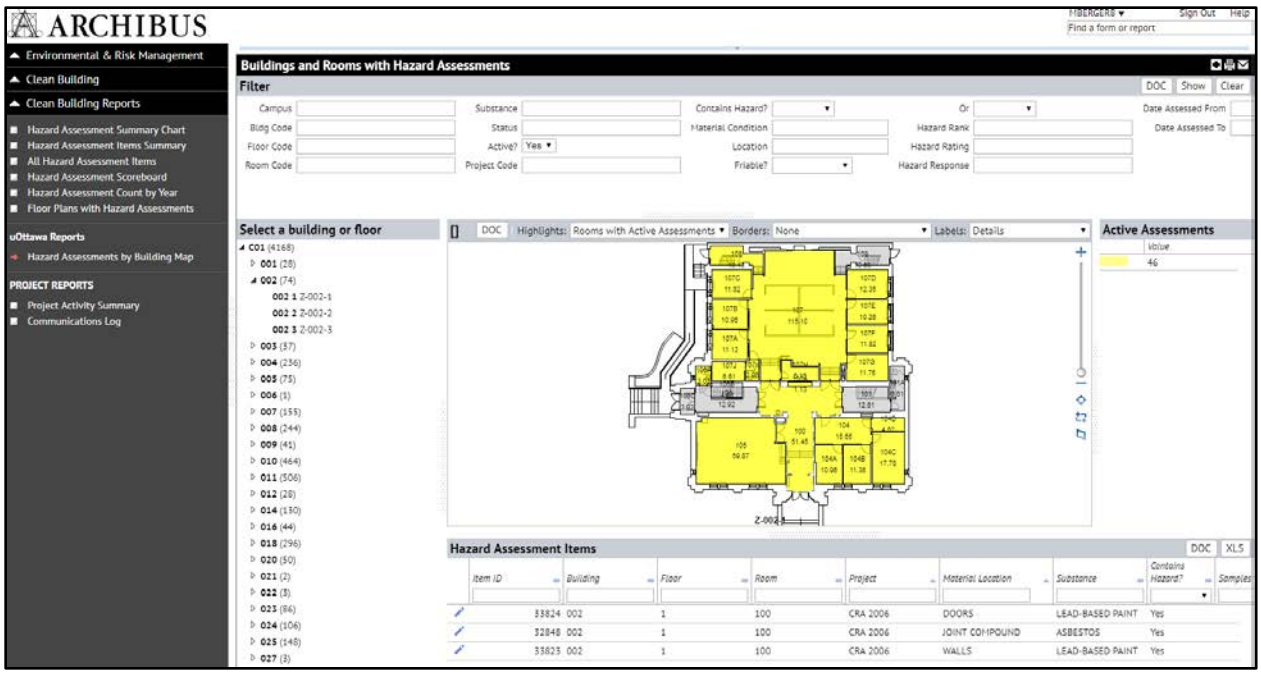

Figure 1 - General view of a floor plan. Rooms containing presence of a designated substance for that floor are listed below the floor plan. Upon selecting a room on the plan, the list will narrow to show the selected room results. To view additional information on the sampling, select the pen symbol ( ) which will open the following window detailing the substance found, physical state, condition, quantity, etc.

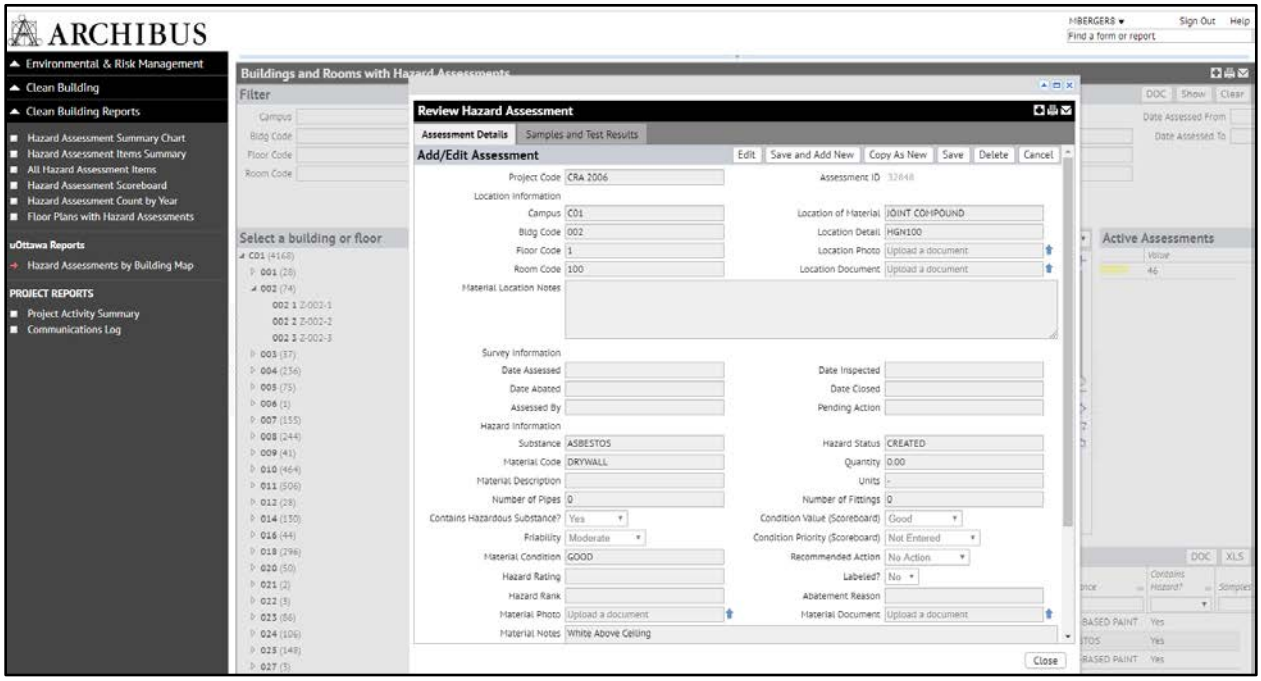

Figure 2 - Specific information for the selected area.

Archibus accounts are managed by Facilities and are available for persons conducting or coordinating work on behalf of the University of Ottawa. An orientation to the web-based platform is also available from Facilities.

Condition Assessment

Prior to any construction, renovation or maintenance operation, the reports must be consulted. Where necessary, sampling and further inspections are performed to anticipate and manage possible asbestos-containing materials prior to the initiation of work. Materials not subject to further work must be re-evaluated not less than once in each 12-month period. Records of re-evaluation are maintained by Facilities.

Newly Discovered Materials

If during work, asbestos-containing material is discovered that was not referred to in the report prepared by the University of Ottawa and may be asbestos-containing material, the work shall immediately cease.

The constructor or employer will immediately notify orally and in writing the Ministry of Labour, the University of Ottawa, the contractor(s) and the joint health and safety committee representative (as applicable).

The written notice must include:

- The name and address of the person giving the notice;
- The name and address of the owner of the place where the work will be carried out;
- The municipal address or other description of the place where the work will be carried out, sufficient to permit an inspector to locate the workplace (if necessary);
- A description of the work that will be carried out;
- The starting date and expected duration of the work; and
- The name and address of the supervisor in charge of the work.

No work shall be done unless the status of the material is determined, or the material is treated as if asbestos-containing and appropriate measures are implemented in accordance with Ontario Regulation 278/05.

Building Specific Procedures

Special procedures have been developed for certain buildings and situations at the University of Ottawa. These procedures are intended to address site-specific hazards and ensure protection of the community of the University of Ottawa.

Building Related Directive

Following the completion of the building-specific asbestos surveys, a list of buildings was compiled to indicate where regular work in ceiling spaces was prohibited due to the likelihood of asbestos settled dust above the ceiling tiles. This list was developed taking into account section 12(3) of Regulation 278/05 where it states that removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely to be lying on the surface of the false ceiling, is considered a Type 2 operation. Therefore, regular work is prohibited in the ceiling spaces of the subject buildings without further Type 2 controls and work procedures. Entry to these spaces is the highest level of work that will be conducted by the University of Ottawa personnel.

The list of buildings where this directive applies is included in the Building Related Directive (Appendix 3) and means that there is potential for settled asbestos dust on top of the ceiling tiles

(e.g. originating from insulation above the suspended ceiling, texture coats, etc.). Refer to the Building Related Directive for procedures regarding work in these spaces.

200 Lees Site Specific Procedure
Crawlspaces exist in Blocks A, B, C and D and are accessible via porthole cover or via access doors at defined areas in the building. The crawlspaces, while not confined spaces, have special entry requirements for workers and/or contractors.

The crawlspace access procedure is included in Appendix 4.

PERSONNEL TRAINING

As required in the Regulation, all workers working in an asbestos operation require training from a competent person, which includes information and instruction related to the:

- Hazards of asbestos exposure;
- Personal hygiene and work practices; and
- Use, cleaning and disposal of respirators and protective clothing.

Representatives from unions and the functional occupational health and safety committees are invited and encouraged to participate in the development of the training program as well as the training program itself.

In addition to the legislative requirement, the Asbestos Management Program requires internal personnel who are knowledgeable in all aspects of the program and its application at the University of Ottawa. Therefore, there are training workshops available for internal University of Ottawa personnel depending on the respective role of each person.

Asbestos Coordinator Training

Due to the responsibilities of the Asbestos Coordinator, he / she must be fully aware of the asbestos health risks, actions for remedial work and obligations, and procedures under Ontario Regulation 278/05. This type of knowledge may be acquired through training courses presented by industry leaders in asbestos training.

The Asbestos Coordinator training is recommended to include topics such as:

- General introduction to asbestos and its uses;
- Health effects of asbestos;
- Building surveys and hazard assessments;
- Interpretation of sampling results;
- In-depth analysis of Regulation 278/05;
- Waste transportation requirements;
- Preparing for asbestos abatement projects;
- Work Types 1-3 and their associated work procedures;
- Etc.

Worker and Supervisor Type 1 Training

If the control of asbestos exposure of maintenance and renovation workers is to be achieved, it is essential that everyone involved in the program – including workers performing the work and supervisors overseeing the work – is properly trained. Under Ontario Regulation 278/05, an owner is required to institute and maintain a training program for those workers who are likely to disturb friable or non-friable asbestos-containing material in the course of their work. As noted, University of Ottawa staff will only conduct Type 1 operations, with limited Type 2 operations.

The training instituted internally at the University of Ottawa covers the following topics:

- Hazards of asbestos exposure;
- Personal hygiene and proper work practices;
- Use, cleaning and disposal of respirators and protective clothing;
- Instruction on the University of Ottawa internal Asbestos Management Program;
- In-depth analysis of Regulation 278/05;
- Type 1 work procedures;
- Requirements for asbestos waste transportation and disposal;
- Etc.

Registration for the Asbestos Awareness and Type 1 Operations workshop is available via the LRS. This workshop serves as the prerequisite for further training workshops.

Worker and Supervisor Type 2 Training

Workers performing limited Type 2 operations are required to complete the Asbestos Awareness and Type 1 Operations workshop as well as the Asbestos Type 2 Operations workshop. The Type 2 workshop addresses the more targeted requirements of Type 2 operations to the extent to which University of Ottawa personnel perform them (i.e. entry to a ceiling space with potential for settled asbestos-containing dust).

Registration for the Asbestos Type 2 Operations workshop is available via the LRS.

Asbestos Awareness

Intended as a basic orientation to asbestos and the University of Ottawa Asbestos Management Program, the Asbestos Awareness workshop is for workers not directly involved in asbestos-related projects; however, would still require knowledge of the internal processes. Examples of personnel who may benefit from this workshop are members of the health and safety committees, Information Technology, Housing, Sports, Protection Services and Facility Managers / Building Management Agents. The Office of Risk Management coordinates this workshop internally and offers it on an as-requested basis; however, the workshop is generally conducted annually.

Contractor Training

Contractors hired by the University of Ottawa to perform asbestos-related work must have received the appropriate training for their work, including for asbestos materials. The University of Ottawa is not responsible to train contractors; however, persons arranging work must ensure that contractors possess suitable documentation attesting to proof of adequate training of their personnel. Additionally, contractors must:

- Demonstrate proof of insurance for asbestos-related work. Note that insurance for asbestos-related work is very specific; refer to the Office of Risk Management for any questions or concerns;
- If performing a Type 3 operation, every worker involved must have successfully completed the Asbestos Abatement Worker Training Program approved by the Ministry of Advanced Education and Skills Development;
- If supervising a Type 3 operation, every supervisor of a worker involved must have successfully completed the Asbestos Abatement Supervisor Training Program approved by the Ministry of Advanced Education and Skills Development.
- Before commencing a Type 3 and certain Type 2 operations, notify orally and in writing the Ministry of Labour. Notice is required for:
    - All Type 3 operations;
    - Type 2 operations where one square metre or more of asbestos-containing insulation is removed from a pipe, duct or similar structure using a glove bag.

RESPIRATORS

Respiratory protection is personal breathing protection for the wearer. Respiratory protection is required for all Type 2 and Type 3 operations. Respiratory protection is recommended for Type 1 operations, although not required unless requested by a worker.

Please refer to the University Respirator Selection, Use and Care program (available from the Office of Risk Management) for fit-testing procedures.

Fitness to Use Respiratory Protection

The use of a respirator places added physical demands on the wearer. Regulation 278/05 requires that a worker not be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator. Workers will be referred to the Health and Wellness office prior to being asked to wear respiratory protection to assess their fitness to use a respirator. In some instances, the wearing of a respirator may not be recommended; therefore, work may not be safe for the worker to conduct.

Selection

Respiratory protection required for Type 2 and Type 3 operations is prescribed in Table 2 in Regulation 278/05. The most practical respirator for asbestos-related Type 1 operations is an air purifying half-mask respirator with P-100 particulate cartridges; however, the presence of other hazards (e.g. oil, organic vapours, etc.) may necessitate the selection of other types of respiratory protection, such as a full-face tight-fitting respirator, other cartridges, etc.

It is recommended that each worker be assigned his or her own respirator.

Fit Testing

The respirator must be properly fitted to produce an effective seal to the user's face. The effectiveness of the respirator is very dependent upon the fit of the tight-fitting face piece to the user's face. This means that respiratory protection devices are not to be worn unless they have been

fit tested to ensure that there are no leaks around the tight-fitting face piece. Beards and coarse facial hair, which prevent contact between the face piece and the worker's face, are not permitted.

Seal Checks
Positive and negative seal checks are performed to check the respirator function and are conducted upon donning of the respirator. The process for conducting a seal check is demonstrated to the worker during fit testing but **are not acceptable substitutes for quantitative or qualitative fit tests.**

Training and Use
Respirator use requires training of workers on:

- Limitations of the equipment;
- Inspection and maintenance of the equipment;
- Proper fitting of a respirator; and
- Respirator cleaning and disinfection.

Respiratory Protection Maintenance
Respirators must be maintained in good operating condition to retain their original effectiveness.

- The respirator shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker.
- After being cleaned and disinfected, each respirator shall be inspected and tested to determine if it is in proper working condition. Where the inspection indicates repairs are required, they are to be carried out prior to the respirator being used again. Replacement components must be those of the manufacturers of the equipment.
- When not in use, respirators shall be stored in a convenient, clean and sanitary location. The storage area should protect the equipment from dust, heat, extreme cold, excessive moisture and damaging chemicals. Individual respirators are recommended to be placed in sealed plastic bags (e.g. Ziploc®) and stored in a manner that will prevent distortion of rubber or plastic parts.

Refer to the Selection, Use and Care of Respiratory Protection Program (available from the Office of Risk Management) for more information.

Medical Surveillance
Medical surveillance is conducted in accordance with the appropriate code for medical surveillance, listed in the Designated Substances Regulation (Schedule 2, Part II) and available from the Office of Risk Management or Health and Wellness.

Health and Wellness coordinates the medical monitoring and assessments of employees at risk of exposure and maintains the associated records. All interactions with Health and Wellness are done in confidence and information remains confidential. The employee's faculty or service is responsible for all costs associated with medical assessments.

An at-risk employee is encouraged to participate in:

- A pre-placement medical examination, with a focus on bodily systems that may be affected by asbestos;

- Periodic medical examinations, with a focus on bodily systems that may be affected by asbestos;
- Clinical tests to determine the employee's fitness for continued work involving asbestos-containing materials;
- Health education, including being advised of the hazards of asbestos and the results of any clinical tests; and
- Record keeping, including details of the employee's employment history, any exposures, results of any medical assessments or clinical tests and any interventions.

The information documented as part of the medical assessment includes:

- Employee's name and date of birth;
- History of the employee's positions at the University of Ottawa;
- Results of monitoring of exposure to the designated substance;
- Time-weighted-average exposure of the employee to the designated substance; and
- Type and use of employee's respiratory equipment.

Health and Wellness will maintain (in confidence to the extent required by law) the medical monitoring records for employees involved in the acquisition, handling, storage, removal or disposal of asbestos-containing materials. These records will be maintained until the later of:

  - The 40th anniversary of the date the first record was created in the personal exposure record; or
  - The 20th anniversary of the date the last record was added to the personal exposure record.

WORK PRACTICES

Asbestos-related work is categorized based on levels of risk, with Type 3 work representing the greatest risk. The minor disturbance of non-friable asbestos-containing materials, other than removing ceiling tiles, **can be generally performed** under Type 1 conditions. Operations classified as Type 1 have a low risk of releasing airborne asbestos. The precautions for all work practices are prescribed in sections 14 through 18 in Regulation 278/05.

Equipment and Supplies

As indicated, University of Ottawa workers will only conduct certain Type 1 operations. Small asbestos maintenance jobs following Type 1 procedures require a limited amount of equipment, including but not limited to:

- Approved respiratory protection and filters, in accordance with Table 2 in Regulation 278/05, if requested by a worker;
- Approved vacuum for asbestos material, equipped with a HEPA filter and/or damp cloths;
- Safety goggles;
- Drop sheets of 6 mm polyethylene to protect surfaces;
- Manually powered tools (not a power tool; i.e. not electrically or battery operated);
- Yellow asbestos waste bags identified as "asbestos-containing material".

Protective Clothing

For the purposes of the Asbestos Management Program, protective clothing shall:

- Be made of a material that does not readily retain nor permit penetration of asbestos fibres;

- Consist of head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing;
- Include suitable footwear, and
- Be repaired or replaced if torn.

Waste

It is recommended to transport waste from the work area during periods of low traffic in the immediate work area. Waste must be disposed of and transported in accordance with applicable regulations, including:

- Regulation 347 – Waste Management
- Transportation of Dangerous Goods

It is important to note that waste will only be accepted at designated sites. Requests for the disposal of waste must be coordinated in advance.

Projects

The general contractor will manage asbestos waste generated as part of construction/renovation projects.

Operations

Waste generated as part of operational projects will be managed via the University of Ottawa Hazardous Waste Program.

EMERGENCY PROCEDURES

In the event of potential disturbance of friable or non-friable material that may be asbestos-containing, all asbestos-containing material in the area shall be re-evaluated promptly using the criteria outlined by the Asbestos Coordinator or his/her delegate. Non-friable asbestos has the potential to become friable, if sufficiently damaged, and must therefore be managed accordingly.

Emergency response operations may arise in the following circumstances:

- Water leak from, or affecting, asbestos-containing material;
- Need to enter ceiling space for emergency repairs in buildings with sprayed asbestos;
- Other, situational dependent emergency work.

In all cases where asbestos-containing (or suspect) materials are impacted, workers must use established procedures in accordance with Ontario legislation. Immediately contact the Asbestos Coordinator for assistance. A specialized asbestos abatement and remediation contractor may be required.

In the event of an accidental, known or suspected disturbance of asbestos fibres:

1. Stop all work and contact the Asbestos Coordinator and the Office of Risk Management via Protection Services at ext. 5411 or 613-562-5411. Provide Protection Services with as much information about the situation as possible, including:
    a. Your name;
    b. Location and extent (if known) of asbestos disturbance;

    c. Contact number;
    d. A brief description of the situation.
2. Clear local, unexposed areas of all tenants and occupants, while avoiding the transportation of asbestos fibres to the extent possible. The impacted area(s) is considered restricted space. No one is permitted to enter the space until further assessed by the Asbestos Coordinator and/or the Office of Risk Management.
3. When possible, disable ventilation to the area. Reduce the disturbance of asbestos-containing materials to the extent possible.
4. Identify the work area with clearly visible asbestos warning signs.
5. If possible, use polyethylene drop sheets to control the spread of dust from the work area.
6. Asbestos coordinator / Office of Risk Management will attend and assess exposure risk and determine the subsequent action / control required. If asbestos content or extent of the situation is not known, a "worst case scenario" will be assumed. Protective equipment (e.g. respiratory protection, Tyvek suit, gloves, etc.) will be required for all asbestos work.
7. Perform emergency repairs and/or clean-up work with minimum disturbance of asbestos.
8. Perform a thorough clean-up of the area in accordance with Regulation 278/05.
9. Arrange for asbestos air clearance testing before reopening restricted area(s).
10. Workers exposed, or having health-related questions / concerns, should contact the Health and Wellness Office at ext. 1473.

Immediate action will be taken to correct the situation and restore to pre-incident status. The Asbestos Coordinator will conduct an investigation to identify the root cause of the incident and/or exposure. A written investigation report will be provided to pertinent parties in a timely fashion.

APPENDIX 1 – FREQUENTLY ASKED QUESTIONS

1. What is asbestos?

Asbestos is a natural, odourless mineral with unique qualities. It is strong enough to resist high temperatures, chemical effects and wear and it is also a poor conductor; therefore, it will insulate well against heat and electricity. Because of its properties, asbestos was widely used for construction purposes before its harmful health effects became known.

Asbestos exists in various shapes and colours. The most common types of asbestos are the following:

- Chrysotile – this is the most common type of asbestos found in buildings, also known as “white asbestos”.
- Amosite – it has been used in thermal insulation and asbestos cement products where greater structural strength is required, also known as “brown asbestos”.
- Crocidolite – not as commonly used as the previous two types and has rarely been encountered in University buildings, also known as “blue asbestos”.
- Other forms of asbestos – include anthophyllite, tremolite, and actinolite. These are rarely encountered and are found mainly as contaminants in other minerals.

2. What is asbestos used for?

You should not be alarmed or surprised to find out that some materials in your building may contain asbestos. Historically, asbestos was widely used in construction materials for private and public buildings (including hospitals, schools, offices, etc.).

3. What are some common locations of asbestos containing materials?

Common uses of asbestos-containing materials include insulation, wall and ceiling tiles, roofing and flooring products, insulation against fire and sound, laboratory fume hood liners, drywall joint compound in drywall walls, stucco wall plaster, etc.

4. Health risk associated with asbestos

Asbestos poses health risks only when asbestos-containing materials are disturbed or damaged, and fibres become airborne and are inhaled by a person. If the asbestos fibres are bound tightly together, such as in commercial materials like floor or ceiling tiles and siding, Health Canada considers that there are no significant health risks.

Asbestos only poses a health risk when fibres become airborne and people breathe them in. Medical experts agree that non-friable asbestos-containing materials pose **no significant health risk**, unless they are being drilled, ground, broken, sanded or otherwise worked on.

Risks are greatest for workers in industries that produce and use asbestos, such as mining and milling. These workers can be exposed to asbestos fibres on a regular basis, which results in an impact on their health, depending on the specific circumstances.

Exposure health risks depend on factors such as:

- Concentration of asbestos fibres in the air;
- Duration of exposure;
- Frequency of exposure;
- Size of the asbestos particles inhaled;
- Amount of time since the initial exposure.

The inhalation of asbestos fibres can cause serious diseases of the lungs and other organs. These effects may not appear until years after the exposure has occurred. Asbestos fibres associated with these health risks are too small to be seen with the naked eye, which can make identification difficult. Asbestos fibre exposure can lead to scarring of the lungs that may potentially develop into an increased risk of developing lung cancer, asbestosis (fibrous scarring of the lung tissue), mesothelioma (cancer of the chest cavity lining), and other diseases (including cancer of the lung and lung cavity, esophagus, stomach, colon and pancreas, pleural plaques, pleural thickening and pleural effusion).

5. Reporting procedure

If you have observed an asbestos-containing material that has deteriorated, or has been disturbed, it must be reported to your supervisor. Your supervisor will contact the Building Management Agent and / or Facilities directly at 2222.

Any hazards, whether asbestos-related or not, must be reported to your supervisor, unless there is an immediate threat to life, safety, property or the environment, in which case you must call Protection Services at 5411.

6. Asbestos abatement

The abatement (or removal) of asbestos-containing materials is strictly regulated and controlled under Regulation 278/05 of the Ontario Occupational Health and Safety Act. Handling and/or removal of asbestos-containing materials must only be carried out by licensed professionals in accordance with established standards. In general, when asbestos-containing materials are removed or disturbed, the area must be hermetically separated. The work procedures employed are designed to minimize fibrous release. In some circumstances, air quality sampling is performed inside and outside the work area to ensure fibrous release is kept as low as possible.

7. Where has asbestos-containing materials been identified at uOttawa?

In 1992, an asbestos site assessment was performed and the Dames and Moore Report identified a list of locations around campus that contained asbestos. In accordance with the amended legislation, a complete inventory of asbestos-containing material locations at the University of Ottawa was completed (October 2007). Reports and updates are available from Facilities.

Prior to any construction, renovation or maintenance operations, these reports are consulted. Where necessary, sampling and further inspections are performed to anticipate and manage possible asbestos-containing materials.

8. What is the University's policy on protecting workers and students?

The University of Ottawa is responsible to provide a safe and healthy environment free from avoidable or significant risks of serious injuries or illnesses associated with exposure to asbestos fibres. This responsibility is implemented through the Asbestos Management Program developed by the University.

9. How do I find out about ongoing asbestos-related operations?

Before any construction, renovation or maintenance operations that may disturb asbestos-containing material can commence, work must be approved and managed by Facilities. Project with asbestos-related implications must be communicated to the appropriate personnel prior to their commencement.

10. Who has the information concerning asbestos-containing material inspections?

Facilities manage the process and maintain the information relating to the asbestos-containing material inspections that have been carried out on campus.

11. What kind of protection do I require if there are renovations or operations being carried out in my building?

If asbestos-containing material has been identified and there is a risk that the construction, renovation or maintenance procedures might disturb the material, the work area will be hermetically separated from the rest of the workplace by walls or other suitable means. Construction workers who do (or may) come into direct contact with the ACM are trained for this scenario and wear the required personal protective equipment. Workers and students working in or visiting the building do not need to wear any personal protective equipment as the work area will be hermetically separated from the building (including ventilation, when required).

12. Is there an information or training workshop related to asbestos?

Asbestos operations training courses are organized upon request. These courses are open to Facilities personnel and other workers who may come in contact with asbestos-containing materials. Awareness workshops are also available for workers and personnel coordinating work within their faculty / service.

For more information concerning worker training, please consult the course registration website or contact the Office of Risk Management.

13. Who should you contact if you have any health concerns?

If you have any health-related concerns, please contact the Health and Wellness Office at ext. 1473 or by email at santerh@uOttawa.ca.

You may also contact the Office of Risk Management at ext. 5892 or at safety@uottawa.ca. You can also consult your Functional Occupational Health and Safety Committee.

14. Additional information

- Health Canada
- Ontario Regulation 278/05 – Asbestos on Construction Projects and in Buildings and Repair Operation

APPENDIX 2 – LOCATION OF ASBESTOS

This section provides a brief summary for each building based on:

1. Visual and analytical assessments of asbestos-containing material that was accessed and observed during the designated substances assessments;
2. Information from renovation / construction projects related to sampling or removal of asbestos-containing materials.

Additional details about the building asbestos studies, including laboratory results, are included in the individual reports; **consult the designated substance reports and relevant abatement records**. These reports are available from Facilities upon request.

NOTE: Where uncertainty exists regarding material, sampling activity is compulsory prior to the commencement of the project.

Building Name	Building Address	Asbestos Status	Building Notes
1 Nicholas	1 Nicholas	Expected to contain asbestos.	
1 Stewart	1 Stewart	Not expected to contain asbestos - validate further.	
100 Laurier	100 Laurier	Expected to contain asbestos.	
100 Marie-Curie	100 Marie-Curie	Not expected to contain asbestos - validate further.	
100 Thomas-More	100 Thomas-More	Not expected to contain asbestos - validate further.	
102 Henderson	102 Henderson	Expected to contain asbestos.	
104 Henderson	104 Henderson	Expected to contain asbestos.	
109 Osgoode	109 Osgoode	Expected to contain asbestos.	
1100 Polytek	1100 Polytek	In Progress.	
112 Henderson	112 Henderson	Expected to contain asbestos.	
113 Osgoode	113 Osgoode	Not expected to contain asbestos - validate further.	
116 Henderson	116 Henderson	Expected to contain asbestos.	
118 Henderson	118 Henderson	Not expected to contain asbestos - validate further.	
120 Henderson	120 Henderson	Expected to contain asbestos.	
120 Osgoode	120 Osgoode	Expected to contain asbestos.	
122 Henderson	122 Henderson	In Progress.	
128 Henderson	128 Henderson	Expected to contain asbestos.	
132 Henderson	132 Henderson	Expected to contain asbestos.	
134 Henderson	134 Henderson	Expected to contain asbestos.	
129-139-141 Louis Pasteur	139-141 Louis Pasteur	Expected to contain asbestos.	
143 Séraphin-Marion	143 Séraphin-Marion	Not expected to contain asbestos - validate further.	
145 Séraphin-Marion	145 Séraphin-Marion	Not expected to contain asbestos - validate further.	
147 Séraphin-Marion	147 Séraphin-Marion	Expected to contain asbestos.	
15-17 Copernicus	15-17 Copernicus	Not expected to contain asbestos - validate further.	
15-17 Stewart	15-17 Stewart	Expected to contain asbestos.	
170 Waller	170 Waller	In Progress.	
180 Waller	180 Waller	In Progress.	
190 Laurier	190 Laurier	Expected to contain asbestos.	
192 Laurier	192 Laurier	Expected to contain asbestos.	Condemned.
19-21 Stewart	19-21 Stewart	Expected to contain asbestos.	
200 Lees	200 Lees	Not expected to contain asbestos - validate further.	
200 Wilbrod	200 Wilbrod	Expected to contain asbestos.	
240 Friel	240 Friel	In Progress.	
25 Stewart	25 Stewart	Expected to contain asbestos.	Condemned.
290 Rideau	290 Rideau	Not expected to contain asbestos - validate further.	
30-32 Stewart	30-32 Stewart	Expected to contain asbestos.	
34-36 Stewart	34-36 Stewart	Expected to contain asbestos.	

Building Name	Building Address	Asbestos Status	Building Notes
38 Stewart	38 Stewart	Expected to contain asbestos.	
40 Stewart	40 Stewart	Not expected to contain asbestos - validate further.	
52 University	52 University	Expected to contain asbestos.	
538-540 King Edward	538-540 King Edward	Not expected to contain asbestos - validate further.	
542 King Edward	542 King Edward	Not expected to contain asbestos - validate further.	
544 King Edward	544 King Edward	Expected to contain asbestos.	Condemned.
545 King Edward	545 King Edward	Expected to contain asbestos.	
546 King Edward	546 King Edward	Expected to contain asbestos.	Condemned.
548 King Edward	548 King Edward	Expected to contain asbestos.	
550 King Edward	550 King Edward	Expected to contain asbestos.	
554 King Edward	554 King Edward	Expected to contain asbestos.	
555 King Edward	555 King Edward	Expected to contain asbestos.	
556 King Edward	556 King Edward	Expected to contain asbestos.	
558 King Edward	558 King Edward	Expected to contain asbestos.	
559 King Edward	559 King Edward	Expected to contain asbestos.	
562 King Edward	562 King Edward	Expected to contain asbestos.	
575-577 King Edward	575-577 King Edward	Expected to contain asbestos.	Condemned.
585 King Edward	585 King Edward	Expected to contain asbestos.	
598 King Edward	598 King Edward	Expected to contain asbestos.	
599 King Edward	599 King Edward	In Progress.	
600 King Edward	600 King Edward	Expected to contain asbestos.	
600 Peter Morand	600 Peter Morand	Expected to contain asbestos.	
Café Nostalgica	601-603 Cumberland	In Progress.	
603 King Edward	603 King Edward	Expected to contain asbestos.	
613 King Edward	613 King Edward	Not expected to contain asbestos - validate further.	
615 King Edward	615 King Edward	Not expected to contain asbestos - validate further.	
62 Templeton	62 Templeton	Expected to contain asbestos.	
621 King Edward	621 King Edward	Expected to contain asbestos.	
631 King Edward	631 King Edward	Expected to contain asbestos.	
647 King Edward	647 King Edward	Not expected to contain asbestos - validate further.	
70 Templeton	70 Templeton	Expected to contain asbestos.	
72 Templeton	72 Templeton	Expected to contain asbestos.	Condemned.
74 Henderson	74 Henderson	In Progress.	
74 Templeton	74 Templeton	Expected to contain asbestos.	
76 Templeton	76 Templeton	Not expected to contain asbestos - validate further.	
78 Templeton	78 Templeton	Expected to contain asbestos.	
80 Templeton	80 Templeton	Expected to contain asbestos.	
850 Peter Morand	850 Peter Morand	Not expected to contain asbestos - validate further.	

Building Name	Building Address	Asbestos Status	Building Notes
94 Henderson	94 Henderson	Expected to contain asbestos.	
99 Bank	99 Bank	In Progress.	
Academic Hall	133-135 Séraphin-Marion	Expected to contain asbestos.	
Alex Trebek	157 Séraphin-Marion	In Progress.	
ARC	25 Templeton	In Progress.	
Biosciences	30 Marie Curie	Not expected to contain asbestos - validate further.	
Brooks Residence	Various	Not expected to contain asbestos - validate further.	
Campus Tunnels	Campus Tunnels	Expected to contain asbestos.	
CAREG	20 Marie-Curie	Expected to contain asbestos.	
CARTU	110 University Pvt.	Expected to contain asbestos.	
Colonel By	161 Louis-Pasteur	Expected to contain asbestos.	
Cube	160 Louis-Pasteur	Not expected to contain asbestos - validate further.	
Desmarais	55 Laurier	In Progress.	
D'Iorio	10 Marie Curie	Not expected to contain asbestos - validate further.	
Fauteux	57 Louis-Pasteur	Expected to contain asbestos.	
FSS	120 University	In Progress.	
Gendron	30 Marie Curie	Expected to contain asbestos.	
Hagen	115 Séraphin-Marion	Expected to contain asbestos.	
Hamelin	70 Laurier	Not expected to contain asbestos - validate further.	
Henderson Residence	202 Henderson	In Progress.	
Hyman Soloway Residence	157 Laurier	Not expected to contain asbestos - validate further.	
Lamoureux	145 Jean-Jacques Lussier	Not expected to contain asbestos - validate further.	
Leblanc Residence	45 Louis-Pasteur	Expected to contain asbestos.	
Marchand Residence	110 University Pvt.	Expected to contain asbestos.	
Marion	140 Louis-Pasteur	Expected to contain asbestos.	
Montpetit	125 University	Expected to contain asbestos.	
Morisset	65 University	Expected to contain asbestos.	
Perez	50 University	Expected to contain asbestos.	
Power Plant	720 King Edward	Expected to contain asbestos.	
Residential Complex	90 University	Not expected to contain asbestos - validate further.	
Roger Guindon	451 Smyth	Expected to contain asbestos.	
Sacré-Coeur	591 Cumberland	In Progress	
Simard	60 University	Expected to contain asbestos.	
SITE	800 King Edward	Not expected to contain asbestos - validate further.	
STEM	150 Louis-Pasteur	In Progress	
Sports Complex	801 King Edward	Not expected to contain asbestos - validate further.	
Stanton Residence	100 University Pvt.	Expected to contain asbestos.	
Tabaret	550 Cumberland	Expected to contain asbestos.	

Building Name	Building Address	Asbestos Status	Building Notes
Thompson Residence	45 University	Expected to contain asbestos.	
Tunnels	N/A	Expected to contain asbestos.	
University Centre	85 University	Expected to contain asbestos.	
Vanier	136 Jean-Jacques Lussier	Expected to contain asbestos.	

Current as of August 2019

Expected to contain asbestos	73
Not expected to contain asbestos - validate further	28
In Progress	14

APPENDIX 3 – BUILDING RELATED DIRECTIVE

Building-Related Directive for Work Impacting Suspended Ceilings

This directive is written in accordance with the Ontario Occupational Health and Safety Act and its Regulation 278/05, as well as Policy 77 – Occupational Health and Safety.

PURPOSE

The purpose of the directive is to provide direction for all building-related work impacting suspended ceilings in all buildings listed in Appendix A.

BACKGROUND INFORMATION

Testing of the ceiling spaces on campus has shown the presence of asbestos fibres in the dust layer on top of some of the suspended ceiling tiles, as well as in some ceiling tiles. Work on ceilings or in ceiling spaces could disrupt the dust, creating airborne asbestos fibres that may be inhaled by unprotected personnel.

This directive was developed taking into consideration section 12(3) of Regulation 278/05 where it states that "removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely to be lying on the surface of the false ceiling", is a Type 2 operation.

DEFINITIONS

Asbestos
Asbestos means any of the fibrous silicates, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite.

Asbestos-Containing Material
Material that contains 0.5 per cent or more asbestos by dry weight.

Building-Related Work Impacting Suspended Ceilings
Any work that may involve disturbing asbestos-containing ceiling tiles or material located in close proximity to the ceiling tiles, and any work occurring in ceiling spaces. This would include any destructive work on walls, ceilings or floors such as cutting holes, hammering, ventilation repair, or hanging items from the ceiling.

Ceiling Space
Any space between a suspended ceiling constructed of any material and the slab, roof or deck above it. The ceiling is considered the suspended ceiling above an occupied space. This includes ceilings in grey houses.

Competent Person
A competent person means a person who,

a) Is qualified because of knowledge, training and experience to organize the work and its performance;

b) Is familiar with the OHS Act and the regulations that apply to the work. In the context of this directive, this includes having received proper training and certification on Regulation 278/05 as approved by the University of Ottawa or by the Ministry of Labour; and
c) Has knowledge of any potential or actual danger to health or safety in the workplace.

Emergency
For the purposes of this directive, an emergency is defined as an unplanned incident or event that requires immediate access to, or interaction with, building-related work areas in order to protect the health and safety of persons, the University of Ottawa's assets, property and environment.

Occupied Space
The space used to conduct normal work activities to support the University of Ottawa's mandate, excluding building related works. These activities are normally conducted in classrooms, offices, laboratories, etc.

Person
Anyone within the University property regardless of his or her affiliation with the University of Ottawa. This includes University of Ottawa workers, students, contractors, visitors, etc.

Type 2 or Type 3 Operations
Consult the University of Ottawa Asbestos Management Program and Regulation 278/05 for further information about different types of work classifications.

Work Authority
Work authority is when a person has authority over a worker (not only University personnel). This refers to a working hierarchy where a supervisor has authority over a worker. However, this also includes a working relationship where University personnel contracts for services and has charge of a workplace, coordinates or directs work to be conducted.

APPLICATION

This directive applies to all persons performing work within ceiling spaces with confirmed, or suspected, asbestos-containing materials.

This most current version of this directive supersedes any previous directive, protocol, procedure, etc., associated with building-related work affecting suspended ceilings in buildings listed in Appendix A.

ROLES AND RESPONSIBILITIES

Deans and Directors

Deans and Directors must ensure the protection of health and safety within their respective faculty and service. They must ensure that this directive is provided to all concerned persons and that those under their authority are diligent in the application of their responsibilities, particularly in the application of this directive.

Deans and Directors will ensure that persons under their work authority have received the required training and notification of this directive; they will also ensure that non-conformances are investigated appropriately.

Only the Associate Vice-President of Facilities (or delegated authorities, such as the asbestos control team) has the authority to issue an authorization and work permit. Only the Associate Vice-President of Facilities (or delegate) can authorize a Type 3 operation or a glove bag removal within the applicable scope of this directive.

All work permit registries or authorizations (Appendix B) must be maintained by Facilities, with copies sent to the Office of Risk Management.

Supervisors and Project Managers

Supervisors and Project Managers must provide this written directive to all persons under his/her work authority who may work in contact with, or in close proximity to the ceilings or ceiling spaces, or other work area as defined by building-related work affecting suspended ceilings.

Supervisors must also ensure that this procedure is followed and enforced.

Protection Services

Protection Services will provide access only to those who have received an authorization and a work permit. They will follow their call procedure for reporting non-conformances to the Office of Risk Management.

Office of Risk Management

The Office of Risk Management will coordinate relevant asbestos-related training and deliver information sessions on the hazards of asbestos.

Facilities

Facilities will notify applicable faculties and services of this directive and will conduct appropriate investigations of non-conformance incidents, potential exposures, etc. The Asbestos Coordinator is responsible for coordinating these activities.

Health and Wellness

The Health and Wellness sector will receive health-related concerns of employees, investigate such health-related concerns and, when necessary, conduct and manage health surveillance programs for employees.

AUTHORIZATION AND WORK PERMIT

The work permit (Appendix B) will allow persons (e.g. employees, contractors, etc.) to access work areas to which this directive applies.

The Associate Vice-President of Facilities, or the delegated competent authorities as defined under conditions set forth by this directive, will issue authorization and work permits. The authorization shall be provided in writing using the approved work permit form (Appendix B) and recorded in the work permit registry. Verbal authorization can be granted in emergencies; however, subsequent written authorization is required using the established work permits within 24 hours.

A work permit must be completed each time an authorization is provided for accessing ceilings for all building listed in Appendix A. The work permit must be presented – upon request – to a University representative.

DIRECTIVE

It is strictly forbidden to disturb or move any ceiling tiles or to conduct any building-related work affecting ceilings for all buildings listed in Appendix A. This directive applies unless one of the following criteria is met:

- Results from sampling material demonstrate that any dust located on the ceilings tiles contains less than 0.5 % of asbestos by dry weight. Refer to the Asbestos Management Program for approved sampling procedures and analysis, as well as organizations recognized by the University to conduct such sampling. Results must be forwarded to Facilities at prs.safety@uottawa.ca.
- Documentation on renovation projects demonstrating that the asbestos hazards were all changed / removed (e.g. ceiling tiles, pipe insulation, stipple coats, etc.); or
- Applying a Type 2 operation (with exception to glove bag procedures), unless a Type 3 operation is required.
- Applying a Type 3 operation or Type 2 glove bag removal. All Type 3 operations and glove bag removals must be under the supervision of the Asbestos Coordinator or his / her delegates (e.g. contracted, specialized organization).

This directive addresses settled dust on ceiling tiles that may contain asbestos for buildings listed in Appendix A. The University is required, in all aspects, to follow Regulation 278/05 for all building materials that have a potential to contain asbestos, e.g. ceiling tiles, drywall, insulation, etc.

AWARENESS TRAINING

Faculties and services must ensure that persons under their authority receive proper instruction on this directive. This may be achieved through an information session.

Any person, who because of their work activity related to asbestos or who supervise those who may come in contact with asbestos, are required to attend the information session related to this directive.

Faculties and services will be notified by the Office of Risk Management of upcoming information sessions. This does not preclude the responsibility of each faculty and service contacting the Office of Risk Management for additional training.

Faculties and services must maintain the attendance list of those who have received the information related to this directive. Workers who will be conducting operations related to this directive must be a competent worker as so defined.

REPORTING

Emergency

In case of emergency, contact Protection Services at ext. 5411.

Health Concern

All employee-related health-related concerns should be reported to the Health and Wellness office at Human Resources via email at santerh@uottawa.ca or at extension 1473.

Non-conformance

Any person witnessing non-conformance with this directive must immediately report the incident to Protection Services at 5411.

Protection Services will immediately contact Facilities and the Office of Risk Management to advise them of any known non-conformances.

Facilities, in conjunction with the Office of Risk Management, will immediately investigate the situation and provide further direction, as necessary. Facilities will ensure that proper corrective action is instituted, and remedial action taken.

DISCIPLINARY MEASURES

Any University employee who contravenes with this directive is subject to disciplinary measures in accordance with Policy 2d – Disciplinary Measures for Reprehensible Acts and collective agreements governing their work conditions.

Any other person is subject to relevant University Policy, or verbal or written contracts (when relevant). Persons contravening with this directive will be requested to immediately leave the University premises and could be subject to legal action by the University.

EXCEPTION

No exception may be made to this directive without special authorization from Facilities and/or the Office of Risk Management.

EFFECTIVE

This directive is effective immediately, until further notice.

Prepared by:
Office of Risk Management

Reviewed by:
Facilities
Health and Wellness, Human Resources

Approved by:

_____ _____
Michael Histed
Director, Office of Risk Management Date

_____ _____
Jacques Nadeau
Director, Operations Date

APPENDIX A – APPLICATION OF BUILDING RELATED DIRECTIVE

Building Number	Building Abbreviation	Building Name	Building Address	Year of Construction
005	LRR	100 Laurier	Laurier; 100	1893
010	THN	Thompson Residence	University; 45	1972
014	MRD	Marchand Residence	University; 110	1965
020	LBC	Leblanc Residence	Louis Pasteur; 45	1965
023	FTX	Fauteux Hall	Louis Pasteur; 57	1973
024	SMD	Simard Hall	University; 60	1956
030	STN	Stanton Residence	University 90	1971
038	CTE	Power Plant	King Edward; 720	1972
113	N/A	94 Henderson	Henderson; 94	1920
162	N/A	120 Osgoode	Osgoode; 120	1920
216	N/A	555 King Edward	King Edward; 555	1920
225	N/A	600 King Edward	King Edward; 600	1956
236	N/A	190 Laurier	Laurier; 190	1920
262	N/A	15-17 Stewart	Stewart; 15-17	1930
263	N/A	19-21 Stewart	Stewart; 19-21	1930
266	N/A	74 Templeton	Templeton; 74	1944
300	N/A	Campus Tunnels	Campus Tunnels	1950-1973-2001

APPENDIX B – SAMPLE WORK REGISTRY AND PERMIT

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Building Related Directive – Sample Permit

The person responsible for access authorization to ceiling spaces in the buildings is covered by the Directive (Appendix A) and must follow the criteria outlined in the Directive. The person providing authorization for access to the ceiling spaces is responsible for completing the **work permit** as well as the **work permit registry**. These documents must be provided to the asbestos coordinator / Facilities and the Office of Risk Management before their coming into force. The **work permit** must be presented – upon request – to a University representative.

Work Permit for Working in Ceiling Spaces

Authorization number: _____

Building: _____

Name of the organization(s) or person(s) authorized: _____

Effective from/to: _____

University of Ottawa Representative: _____

Date: _____

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Building Related Directive – Sample Registry

The person responsible for access authorization to ceiling spaces in the buildings is covered by the Directive (Appendix A) and must follow the criteria outlined in the Directive. The person providing authorization for access to the ceiling spaces is responsible for completing the **work permit** as well as the **work permit registry**. These documents must be provided to the asbestos coordinator / Facilities and the Office of Risk Management before their coming into force. The **work permit** must be presented – upon request – to a University representative.

Authorization #	Effective Dates		Building	Names of the organization / person(s) authorized	Reason for authorization	Name of person authorizing access	Signature
	Beginning	End					

APPENDIX 4 – 200 LEES CRAWLSPACE PROCEDURE

200 Lees Avenue Crawlspace Procedure

PURPOSE

The purpose of the procedure is to ensure that personnel accessing the crawlspaces located at 200 Lees are fully informed and protected for the work required.

APPLICATION

This procedure applies solely to the 200 Lees Avenue Campus, located at the University of Ottawa; Blocks A, B, C and D are the intended scope of this procedure. All persons (including workers, contractors, etc.) performing work must abide by this procedure. For clarification on any item in this document, or if this document applies to a specific location, please contact Facilities and/or the Office of Risk Management.

This procedure is to be read in conjunction with:

- Asbestos Management Program of the University of Ottawa;
- Risk Management Health & Safety Plan (RMHS Plan), revised February 2012;
- Ontario Occupational Health and Safety Act; and
- Regulation 278/05.

PROCEDURE STATEMENT

Due to the age of buildings, the possibility of asbestos-containing materials present in crawlspaces, and considering Regulation 278/05 section (8)(10)(a), **it is therefore prohibited from entering any of these spaces until an extensive sampling campaign is completed, with supported written documentation. Entry is permitted if the following conditions are met:**

- It is determined that a particular block in the crawlspace does not contain asbestos-containing materials;
- It is determined that exposed, damaged, or freely disturbed asbestos-containing materials are removed and/or suitably contained with supporting documentation provided;
- The access purpose is for conducting sampling;
- The access purpose is for conducting asbestos abatement and / or removing the soil; or
- Entry must be conducted under an exceptional circumstance. If this is required, contact the Facilities Health and Safety Officer or the Office of Risk Management;

IDENTIFICATION AND LOCATION OF CRAWLSPACES

Crawlspaces exist throughout most of the 200 Lees Avenue campus. Most spaces are identifiable by their square shaped cover, located at floor level. The covers measure approximately $1m^2$.

Figure 1 - Example Crawlspace Access Point (Block B)

There are also entry points accessible from the wall (in the mechanical rooms) in Blocks A and C. The total number of crawlspaces are as follows:

- Block A – 7 (6 floor access; 1 horizontal entry point in the mechanical room in Block A)
- Block B – 2 (2 floor access)
- Block C – 5 (2 floor access; 1 horizontal entry point in the mechanical room in Block C)
- Block D – 1
- Block E – 0

A map of the crawlspace locations is included as Appendix A.

REQUIREMENTS AND CONDITIONS TO ENTER THE CRAWLSPACES

Once sampling has determined the potential hazards present, there may be requirements to remove soil if asbestos-containing material is laying on the surficial soil layer. If such a requirement is necessary due to the sample results, the only work permitted within the crawlspace is that related to the removal of asbestos-containing materials.

WRITTEN APPROVAL

Prior to any work conducted within the crawlspaces, the project or work order must be approved by Facilities. All requests to perform work / enter crawlspaces are to be logged and recorded through 2222 and a copy of the work request forwarded to the Facilities Health and Safety Officer. All requests are to receive written approval from Facilities prior to the work commencing.

CONFINED SPACE PROGRAM

As part of the University of Ottawa's Confined Space Program, the crawlspaces were assessed to determine if these spaces met the definition of a confined space as defined in Ontario Regulation 632/05. Site visits were conducted and the spaces assessed. It was determined that these spaces did not meet the definition of a confined space but were identified as a "potentially hazardous space", in accordance with University of Ottawa Confined Space Program, due to the possibility of hazardous atmospheres created by work conducted within. While the spaces were not considered confined spaces, there exists precautions to abide by, prior to entering any crawlspace. These

precautions are detailed in the University of Ottawa Confined Space Program, available from Facilities and the Office of Risk Management.

SITE-SPECIFIC RISK MANAGEMENT PLAN

The Risk Management Health and Safety Plan, dated February 2012, must be fully implemented. The plan is available from the Facilities Health and Safety Officer and/or the Office of Risk Management.

INDEPENDENT THIRD-PARTY CONSULTATION AND SUPPORTING DOCUMENTATION

Prior to conducting the requested project or operation, the University will engage an independent third party to assist in planning the specific task, overseeing the work to ensure that any project-related tasks are conducted in accordance with the applicable legislation, and report in writing to the University of Ottawa, the results of the work and contraventions, if applicable. The independent third party will notify the University immediately of any contraventions.

BUDDY SYSTEM

When conducting work that involves entering the crawlspaces at 200 Lees Avenue, it is strongly recommended to conduct the work using the "buddy system" by working in pairs. Due to the limited need to enter these spaces, emergency care may not be available for medical emergencies, or potential injuries that may produce or limit cognizance to an injured worker. For these reasons, two workers are recommended for all tasks in the crawlspace(s) – one worker to perform the work, and one worker to monitor the first worker. The person not conducting the work (the spotter) will maintain visual contact with the entrant, where possible to do so. Where this is not feasible, voice communication will be used (e.g. verbal communication, radio communication such as two-way radio, etc.).

TRAINING

All entrants will, at a minimum, be trained in the following (or, in the case of contractors, their equivalent workshops provided by their employer):

- All mandatory health and safety training;
- WHMIS 2015;
- Basic Asbestos Awareness and Operational training (in areas of asbestos-containing materials);
- Site-specific training; provided by the supervisor of the project / work (this is to include emergency procedures / contacts, potential hazards of the work environment, etc.);
- Orientation to the work area (such as drawings, plans, visual tours (where possible) etc.);
- Fall Prevention / Basics of Ladder Safety;
- Use of personal protective equipment required for their work (including fit testing for respiratory protection);
- Training on the site-specific Risk Management Health and Safety Plan for 200 Lees Ave.

Entrants may be asked to provide proof of valid training prior to working in these spaces.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Table 3-1 in the 200 Lees Risk Management Health and Safety Plan prescribes the personal protective equipment required when entering the crawlspaces. Table 3-1 lists Level C protection as appropriate for crawlspace work. These precautions include, but are not limited to:

- A minimum of a NIOSH-approved P-100 mask and high-efficiency particulate filter;
- Safety glasses or chemical splash goggles (as required);
- Hooded chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical-resistant overalls);
- Gloves, outer, chemical-resistant;
- Gloves, inner, chemical-resistant;
- Boots (outer), chemical-resistant steel toe and shank (as required);
- Hard hat (as required).

All personal protective equipment requires the user to be instructed on its use and limitations.

ENTRY, EGRESS AND DECONTAMINATION PROCEDURES TO IMPLEMENT

Classification of the Work

Due to the potential presence of asbestos in the crawlspaces and the uncontrollable nature of the environment, any entry will be classified as a Type 2, with additional Type 3 precautions. These precautions include, but are not limited to, a decontamination unit required for each entrance during each project / work order. In areas with multiple entrances, render inaccessible one or more of the entrances to provide a single point of entry / exit.

Entry locations will be restricted using a physical barrier at all approaches with signage posted on the barriers indicating that asbestos work is being performed. Signage will conform to Regulation 278/05.

Decontamination

A typical decontamination unit functions similar to the following:

- The worker(s) enters a clean room and changes into their required personal protective equipment;
- The worker(s) passes through the shower and into the dirty side of the change room and into the work area;
- Planned work is conducted in the asbestos environment;
- The worker(s) prepares to exit the area and into the “dirty side” of the decontamination unit;
- The worker(s) then proceed into the shower area where they clean themselves and their respiratory protection.
- The worker(s) proceeds to the clean side and change to their street clothes.

The external third party contracted as part of the work oversight will be able to confirm the requirements for entry and exit depending on the work planned. A site-specific entry, exit and decontamination procedure will be issued for each project and / or work order.

Ladders and Tools

Where entry is required from the floor, due to the nature and configuration of the crawlspaces, it must be accessed using a ladder. The ladder must be adequate length to provide an extension of 3 feet over and above the crawlspace entrance. Ensure that the ladder is firmly supplanted in the crawlspace prior to descending. Due to the ladder's presence in the crawlspace, this means that the ladder, along with other items brought into the crawlspace must be adequately decontaminated prior to exiting the space or disposed of as asbestos waste prior to removing them from the work area.

Facilities are assessing the possibility of installing fixed access ladders in certain crawlspaces to provide access. At this time, this is simply a proposal and no fixed ladders have been installed.

Entry Tool

In order to access the crawlspaces, a special tool is required to remove the covers located at floor level. The tool is a large, threaded T-bar, of which the bottom is inserted and screwed into a hole in the cover. The upper part of the T-bar is then used as a lever to lift and shimmy the cover out of place. The covers for the crawlspaces are heavy and may require assistance for removing and re-securing. To access this tool, refer to the Facilities Health and Safety Officer (ext. 6992).

Waste / Garbage

All items entering the crawlspaces that cannot be decontaminated must be disposed of as asbestos waste in accordance with applicable regulations (unless confirmed that there is no asbestos). This includes any tools, protective clothing, equipment, debris, etc. The waste is the responsibility of the person, or persons, who contracted the work, and / or generated it.

Signage

To ensure that entrants, and / or perspective entrants are aware that the crawlspaces are asbestos-containing, signage is installed at all entry points indicating that access is restricted and to contact the Facilities Health and Safety Officer.

Partial Sampling Campaign

A partial asbestos sampling campaign at 200 Lees has been completed. The following blocks at 200 Lees were sampled at varying times during 2012. Sample results for each block can be obtained from Facilities.

Block A

Following sampling, asbestos was observed within the surficial soil layer. Prior to building demolition and construction that occurred in 2012, a layer of soil was removed from the crawlspace in Block A. Precautions for heavy metals remain in place.

Block B

Following sampling, asbestos was not observed within the soil. Precautions for heavy metals remain in place.

Block C

Following sampling, asbestos was not observed within the soil. Precautions for heavy metals remain in place.

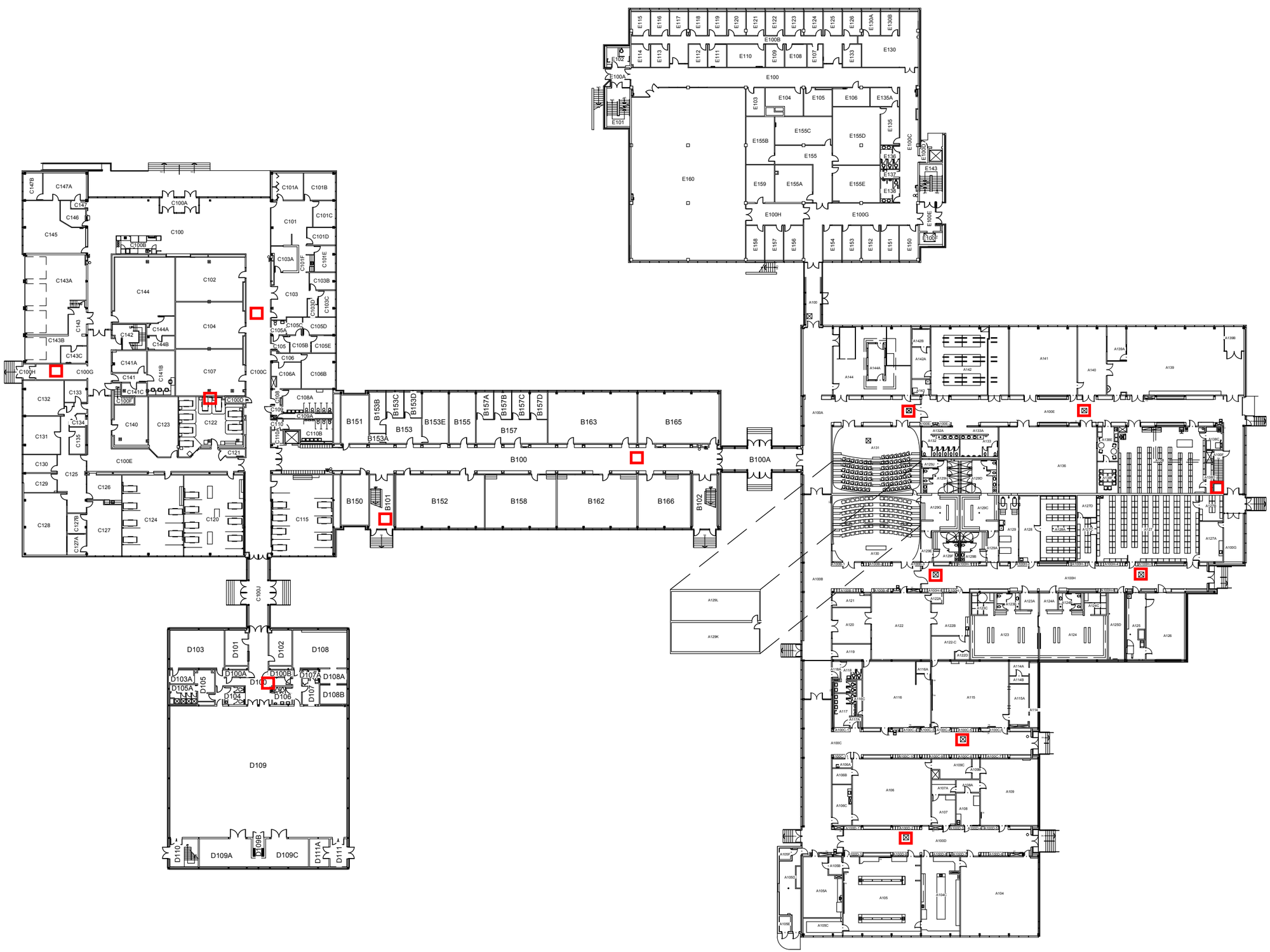
Block D
Following sampling, asbestos was not observed within the soil. Precautions for heavy metals remain in place.

Questions, Comments or and Concerns

Any questions, comments, or additional concerns regarding entry to the crawlspaces may be directed to the Facilities Health and Safety Officer or the Office of Risk Management.

APPENDIX A – MAP OF CRAWLSPACE LOCATIONS

REV	DATE	DESCRIPTION	BY
1	08/09/2015	BUILDING COMBINED	JB



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uOttawa

Immeubles
Facilities

200 Lees
200 Lees

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200 Lees

BUILDING COMBINED

Dessin / Drawing:
LEVEL 1
BUILDING COMBINATION

Édifice/Bldg:	Niveau/Level:
---- 060 ----	1 ----
---- ---- ----	Feuille/Sheet: **A-1**
Échelle/Scale: 1:600 / Revision: 1	of/de

08/09/2015 JB