

DESIGNATED SUBSTANCE REPORT

Building K, Algonquin College Ottawa Campus 201 Adjidjàk Private, Ottawa, Ontario



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201 Adjidjàk Private
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CM3 Project: TC1738

EXECUTIVE SUMMARY

CM3 Environmental Inc. (CM3) was commissioned by Algonquin College to conduct a quantitative asbestos survey for the building located at 201 Adjidjàk Private in Ottawa, Ontario. This work was completed in order to comply with Ontario Regulation 278/05 “*Designated Substances - Asbestos on Construction Projects and in Buildings and Repair Operations*” (O. Reg. 278). A Designated Substance Survey (DSS) is also required under Section 30 of the **Occupational Health and Safety Act** in order to identify designated substances that may be present within the proposed project areas.

General Findings and Recommendations

CM3’s general findings and recommendations are summarized in the following table:

Executive Summary Table		
Designated Substance	Findings	Recommendations
Acrylonitrile	Possibly present in stable form in paints and adhesives.	No concerns.
Arsenic	Possibly present in stable form in paints and adhesives.	No concerns.
Asbestos	Due to the age of construction, there are no concerns with regards to asbestos content.	No concerns.
Benzene	Likely present in stable form in roofing asphalt, paints, and adhesives.	No concerns.
Coke Oven Emissions	None identified.	No concerns.
Ethylene Oxides	None identified.	No concerns.
Isocyanates	None identified.	No concerns.

Lead	<p>Due to the age of construction, there are no concerns with regards to lead content.</p>	<p>It is recommended that if materials containing lead are to be disturbed, then procedures outlined in the ministry of labour “Guideline – Lead on Construction Projects” should be followed.</p>
Mercury	<p>Mercury vapour is assumed to be present within fluorescent light tubes bulbs that are located in the subject building.</p> <p>Mercury may also be found in stable form in paints and adhesives.</p> <p>Liquid mercury was observed in thermostats located in the following locations.</p>	<p>If work on mercury containing materials is likely to produce mercury dust or fumes, for example during welding, torch cutting, grinding, sanding or sandblasting, then proper precautions should be followed.</p> <p>Prior to demolition, all fluorescent light tubes should be packaged and removed by a licensed contractor.</p>
Silica	<p>Crystalline silica is assumed to be present in the building within the acoustic ceiling tiles, drywall/drywall joint compound, plaster and concrete structures such as walls, floors and stairs.</p>	<p>During renovation or demolition ensure that work areas are well ventilated, wash stations are present for worker protection and that the maximum allowable airborne concentration for all silica forms is not exceeded. All work should be completed following the Ministry of Labour “Guideline – Silica on Construction Projects”.</p>
Vinyl Chloride	<p>Likely present in stable form in pipes and interior finishes.</p>	<p>No concerns.</p>
PCBs	<p>PCB’s can be found in equipment such as transformers, capacitors, electromagnets, heat transfer units, hydraulic engine and fluorescent lamp ballasts. Fluorescent lamp ballasts may contain minor quantities of PCBs (23.6 g).</p>	<p>Prior to any renovation or demolition, all ballasts should be compared to the information outlined in the 1991 Environment Canada publication “Identification of Lamp Ballasts Containing PCBs” and removed/disposed of accordingly</p>
ODSs	<p>ODS’s can be found in applications such as refrigerants in heat pumps, refrigerators, freezers and air conditioners (A/C).</p>	<p>Prior to handling and/or disposal, a licensed technician should remove all base building CFCs, in accordance</p>

		<p>with the Federal Halocarbon Regulation, 2003.</p> <p>Non-base building units (i.e. window A/Cs, refrigerators, and freezers) should be relocated or reused rather than destroyed. If the units will not be relocated, then a licensed technician should remove the refrigerants.</p>
UFFI	No evidence of UFFI was observed during the site investigation.	No concerns.
Droppings	No evidence of droppings was observed during the site investigation.	No concerns.
Visible Mould	Apparent mould growth was observed on mechanical pipe fittings in the mechanical room.	No concerns.
Radioactivity	A direct source of radioactivity was not observed.	Further investigation and sampling would be required if Radon is deemed a concern for this facility.

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1 INTRODUCTION

1.1 Site Background

The subject facility is a single storey building which serves as the Early Learning Centre facility located at 201 Adjidjàk Private, in Ottawa, Ontario. The building is heated via a combination of forced air gas fired furnace and electric baseboard heaters.

The facility was originally constructed in 1990 and has served as the Early Learning Centre since its construction. The building consists of offices, classrooms, daycare, washrooms, reception area, mechanical and electrical rooms.

1.2 Regulatory Framework

Under Section 30 of the Occupational Health and Safety Act (OHSA), a project “owner shall determine whether any designated substances are present at the project site and shall prepare a list of all designated substances that are present”. Ontario regulation 490/09 “Designated Substances” (O. Reg. 490/09) lists the designated substances as defined by OHSA. The following is a list of substances regulated by O. Reg 490/09.

- Acrylonitrile
- Arsenic
- Asbestos
- Benzene
- Coke Oven Emissions
- Ethylene Oxide
- Isocyanates
- Lead
- Mercury
- Silica
- Vinyl Chloride

Of the aforementioned designated substances, asbestos is further regulated by Ontario Regulation 278/05, “*Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations*”.

The following Hazardous Building Materials are not Designated Substances regulated by O. Reg. 490/09, but could pose a significant risk to health and safety of workers, occupants, and the environment are included as part of this report. The Ministry of Labour (MOL) recognizes them as workplace hazards and enforces worker protection under the General Duty Clause 25(2) (h) of the OHSA. Clause 25(2) (h) states that the employers are required to “take every precaution reasonable in the circumstances for the protection of a worker”. In such cases the MOL will refer to industry standards and guidelines for the safe handling and management of such materials.

- Polychlorinated Biphenyls (PCBs) - SOR/2008-273
- Ozone Depleting Substances (ODSs) - Federal Halocarbon Regulation 2003, SOR/2003-289
- UFFI - Under the Hazardous Products Act (R.S. C. H-3, S.1)
- Droppings
- Visible Mould
- Radioactivity

Where applicable, regulations pertaining to removal / abatement, and/or disposal of hazardous materials are provided in section 8.0 Recommendations.

1.3 Scope of Work

The scope of this project was to determine the location, condition, quantity and type of hazardous materials present in the building. The surveyors included building structural components, finishes, mechanical and electrical systems. For the purposes of this project, only the substances referenced in section 1.2 are reported.

The designated substances mentioned above may be present in partial and non-accessed areas and concealed spaces (i.e. wall and ceiling cavities). Furthermore, materials located within wall cavities could not be observed in order to determine their condition. In addition, CM3 would extrapolate quantities based on quantities observed in fully accessible locations.

This designated substance survey report has been prepared using the information during the site reconnaissance and previous information available.

1.4 Participants

The assessment was performed by Andrew Mckeown and Gaurav Gaurav of CM3 on November 29th, 2024. The surveyors gained access to the building using keys provided by the facilities department.

1.5 Limitations

The survey does not refer to substances that may be present in the day-to-day usage for other specialized equipment or areas in buildings (i.e. portable equipment, lead shields, fume hoods, etc.). There is a possibility that materials may exist which could not be reasonably identified within the scope of this assessment, or which were not apparent during previous site visits.

The scope did not include personal items or equipment (owner or occupant), buried or underground services or areas requiring significant demolition to assess. Wall and ceiling cavities were accessed wherever possible. Destructive investigative techniques were not employed.

1.6 Terminology

1.6.1 List of Acronyms & Abbreviations

TERM	DESCRIPTION	TERM	DESCRIPTION
ACM	Asbestos Containing Material	MDL	Method Detection Limit
CFC	Chlorofluorocarbon	NS	No Standard
cm²	Centimeters squared	ODS	Ozone Depleting Substances
CAEAL	Canadian Association of Environmental Analytical Laboratories	PCBs	Polychlorinated Biphenyls
CM3	CM3 Environmental Inc.	Pb	Lead
DUP	Duplicate	PLM	Polorized Light Microscopy
EPA	Environmental Protection Agency	ppm	Parts Per Million
ESA	Environmental Site Assessment	ppb	Parts Per Billion
ESI	Environmental Site Inspection	PVC	Polyvinyl Chloride
GW	Groundwater	QA/QC	Quality Assurance/Quality Control
		RPD	Relative Percent Difference
Hg	Mercury	T	Metric Tonnes
Ha	Hectare	TEM	Transmission Electron Microscopy
HID	High Intensity Discharge	TWAEL	Time-Weighted Average Exposure Level
		µg/g	Micrograms/gram
m	Metre	µg/L	Micrograms/Litre
mg/kg	Milligrams per kilogram	u/g	Underground
m	Metre	UFFI	Urea Formaldehyde Foam Insulation

1.6.2 Glossary of Terms

Adjacent Property – Any properties that are contiguous or adjoining to the property being assessed.

Approved – Used in reference to a substance or system that has been investigated by a testing agency, accredited by the Standards Council of Canada, or is acceptable to the authority having jurisdiction and has been found to comply with specific requirements and is identified with an authorized marking of the testing agency, as appropriate.

Asbestos Containing Material (ACM) – In Ontario, any building material containing that contains 0.5% or more asbestos is recognized as ACM.

Client – Algonquin College including representatives of Algonquin College.

Commercial Property – any property where the primary activities of the land use is commercial (e.g., shopping mall) and not residential or manufacturing. This does not include operations where food is grown.

Contaminant – A substance that causes or may cause an adverse effect.

Contamination – The presence in soil, surface water, groundwater, air, or structures of a substance of concern, or a condition, in concentrations above appropriate pre-established criteria.

Criteria – Limits or levels for substances of concern that are established by regulating bodies.

Canadian Standards Association (CSA) – The Canadian Standards Association (CSA) is a membership association serving industry, government, consumers and other interested parties in Canada and the global marketplace. A leading developer of standards and codes, CSA enhances public safety, improves quality of life, preserves the environment and facilitates trade.

Dangerous Goods – Under the Transportation of Dangerous Goods Act (TDG) a dangerous good is a product, substance or organism included by its nature or by the regulations in any of the classes listed in the schedule of the ACT (Part 2 of the Transportation of Dangerous Goods Act).

Dangerous Goods Carrier – Under the Transportation of Dangerous Goods Act a carrier is a licensed transporter of dangerous goods. A transporter is a hauling firm that picks up properly packaged and labeled hazardous wastes from generators and transports it to designated facilities for treatment, storage, or disposal. Transporters are subject to TDG hazardous waste regulations.

Delineation – The physical and chemical assessment of all affected media at a site in three dimensions (length, width and depth) to the applicable criteria by sampling and analysis to determine the contaminant impact boundaries in a minimum of four horizontal directions.

Designated Substance – Any material that is designated as such in Ontario Regulation 490/09 of the Ontario Occupational Health and Safety Act.

Detection Limit – The smallest concentration or amount of a substance that can be reported as present in a sample with a specified degree of certainty by a definite complete analytical procedure.

Environment – The components of the earth and includes

- (i) air, land, and water;
- (ii) the layers of the atmosphere;
- (iii) organic and inorganic matter and living organisms;
- (iv) the interacting natural systems that include components referred to in subclasses (i) to (iii); and

(v) may refer to, the socio-economic, environmental health, cultural and other items referred to in the definition of environmental effect.

Environmental Audit – a systematic process of objectively obtaining and evaluating evidence regarding a verifiable assertion about an environmental matter to ascertain the degree of correspondence between the assertion and established criteria, and then communicating the results to the client. A verifiable assertion is a declaration or statement about specific subject matter that is supported by documented data.

Exposure – The amount of a physical or chemical agent that reaches a target or receptor through ingestion, dermal adsorption, and inhalation.

Exposure Pathway – The course a chemical or physical agent takes from a source to an exposed population or organism; it describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a site.

Hazardous Material – A material that may, upon exposure, constitute an identifiable risk to human health or the natural environment. Hazardous material criteria are established with regard to appropriate regulatory requirements.

Ingestion – An exposure type whereby chemical substances enter the body through the mouth and into the gastrointestinal system.

Inhalation – The intake of a substance by receptors through the respiratory tract system.

Lead (Pb) – An inorganic substance that is hazardous to health if breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been restricted or eliminated by federal laws and regulations. Lead is a criteria pollutant that is regulated under provincial legislation and the National Pollution Release Inventory.

Mercury (Hg) – An inorganic substance that can accumulate in the environment and that is highly toxic to humans if breathed or swallowed.

Monitoring – Measurement of concentrations of chemicals in environmental media or in tissues of humans and other biological receptors/organisms over time.

Mould – A type of fungus that grows in damp, warm environments, forming multicellular structures called hyphae and reproducing through airborne spores. It can thrive indoors or outdoors and may cause health issues such as allergies, respiratory problems, or exposure to harmful mycotoxins.

Municipality – A city, an incorporated town, a municipality of a county or district or village commissioners. Environmental Act.

Ozone Depleting Substance (ODS) – A family of man-made compounds that includes, but are not limited to, chlorofluorocarbons (CFCs), bromofluorocarbons (halons), methyl chloroform,

carbon tetrachloride, methyl bromide, and hydrochlorofluorocarbons (HCFCs). These compounds have been shown to deplete stratospheric ozone, and therefore are typically referred to as ODSs.

Pathway – Any specific route by which a potential receptor or individual may be exposed to an environmental hazard, such as the release of a chemical material.

Polychlorinated Biphenyls (PCBs) – A family of 209 congeners of structurally similar chemicals which are known to suppress the immune system, disturb behaviour and reproduction, contribute to population declines in wildlife, have toxic effects on the developing nervous systems and on liver enzymes, act as a cancer promoter, and cause birth defects.

ppb (parts per billion): An amount of substance in a billion parts of another material.

ppm (parts per million): An amount of substance in a million parts of another material; also expressed by mg/kg or ml/L.

Property – Land and any improvements to land consisting of any physical object attached to the land with some degree of permanence, including buildings and other fixtures. The terms “property” and “site” are used interchangeably.

Property Owner – the owner of a property by legal title. The property owner referred to in this report is Algonquin College.

Remediation – The management of a contaminated site to prevent minimize, or mitigate damage to human health or the environment. Remediation may include both direct physical actions (e.g., removal, destruction, and containment of contaminants) and institutional controls (e.g., zoning designations or orders).

Residential Property – Any property where the primary activity of the land use is residential or recreational activity.

Risk – The chance of injury or loss, defined as a measure of the probability and severity of an adverse effect to health, property, the environment, or other things of value.

Risk Assessment – A set of scientific methods for defining and estimation the probability and magnitude of undesired effects to receptors resulting from a specific event, such as a human action, a natural catastrophe, or an exposure to a substance.

Storage – The holding of a substance for a temporary period at the end of which it is intended to be processed, used, transported, treated or disposed of.

Urea Formaldehyde Foam Insulation (UFFI) - A type of foamed in-place insulation that releases formaldehyde gas. Under the *Hazardous Products Act updated in 1985* the use of UFFI was banned in Canada.

These definitions were based on those obtained from the Canadian Council of Ministers of the Environment, Canadian Standards Association, Environment Canada, U.S. EPA, Transport Canada dictionaries and Federal and Provincial Agencies.

2 ASBESTOS

Asbestos is a generic term describing a number of naturally occurring fibrous metamorphic minerals of the hydrous magnesium silicate variety that differ in chemical composition and are suitable for use as non-combustible, non-conducting and chemically resistant materials. The different types of asbestos which may be found in building materials are Chrysotile, Amosite, Tremolite, Actinolite or Anthophyllite.

They belong to two major mineral groups, Serpentine and Amphiboles. Serpentine minerals are flexible and curly whereas amphibole fibres tend to be straight with a fine fibre density that increases the likelihood of becoming and remaining airborne when disturbed. Chrysotile is a Serpentine and Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are Amphiboles.

The physical characteristics and chemical properties of asbestos made it very useful for a wide variety of products to strengthen them, provide heat or electrical insulation, offer fire or chemical resistance, and/or to absorb sound.

The main pathway for exposure to asbestos is inhalation. When inhaled in significant quantities, asbestos fibres can cause asbestosis (a scarring of the lungs which makes breathing difficult), mesothelioma (a rare cancer of the lining of the chest or abdominal cavity) and lung cancer.

As outlined in Ontario Regulation 278/05 "Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations", any building material containing 0.5% or more asbestos (by weight) is recognized as an asbestos containing material (ACM).

The intent of the Regulation is to reduce worker exposure to asbestos. As such the regulation puts requirements on all stakeholders including building owners and managers to be aware of the presence, if any, of asbestos in their buildings and thus potential work areas. This is generally prescribed by having an "inventory" on hand of all ACM, also referred to as a survey. The regulation also details many other facets of the asbestos industry including removal procedures, health and safety requirements, training, etc. Any personnel working in or around asbestos should have, at a minimum, a basic understanding of the Regulation.

ACMs are categorized as friable or non-friable in order to show how easily they may release asbestos fibres when disturbed.

A material that is friable is one which can be crumbled, pulverized or powdered by hand pressure. If a friable ACM is damaged or disturbed, it presents an inhalation risk because asbestos fibres are more easily released into the air. Examples of friable materials include sprayed fireproofing on structural steelwork, thermal insulation on mechanical systems, or textured finishes.

A non-friable asbestos product is one in which the asbestos fibres are bound or locked into the product matrix, so that the fibres are not readily released. Such a product would present a risk for fibre release only when it is subject to significant abrasion through activities such as sanding or cutting with electric power tools. Examples of non-friable asbestos products include vinyl asbestos floor tiles, acoustic ceiling tiles, and asbestos cement products.

Where suspect-ACMs could not be sampled, in order to maintain the integrity of the building component (i.e. roofing membranes, exterior finishes), these materials are referred to as Presumed Asbestos-Containing Materials (PACMs). PACMs are treated as though they are ACMs until laboratory analysis proves otherwise. Typically, samples are collected and submitted for analysis on a project-by-project basis.

2.1 Target Materials

Asbestos was used widely in construction materials including but not limited to:

- Insulation (i.e., pipe runs, boilers, pipe fittings, and gaskets);
- Spray-on coating/fireproofing;
- Cement products including cement sheets and exterior shingles and fences;
- Drywall joint compound filler;
- Plasters and decorative interior finishes;
- Acoustical ceiling tiles;
- Roofing felts and shingles;
- Vinyl floor tiles and sheet flooring; and,
- Mastics, tars, glues, and caulking.

In order to fully assess the potential presence/absence for the above materials CM3 personnel employ a methodical room-by-room field procedure. This procedure requires the inspector to observe and note the following building components as is part of our QA/QC program:

- Floor
- Wall
- Ceiling
- Structure
- Mechanical/Electrical
- Other
- Exterior

2.2 Analytical Procedure

Suspect materials were primarily assessed by visual inspection. On the basis of this inspection, select samples were collected from discrete locations using industry-accepted, safe sampling techniques that include the pre-wetting of materials and concealment of materials after collection.

The number of samples collected is based on the suspect building materials present and the sampling criteria outlined in Table 1 “Bulk Materials Samples” of Ontario Regulation 278/05.

All suspect asbestos samples were submitted under chain of custody to EMSL Canada Inc. for analysis. Samples were analyzed by polarized light microscopy with dispersion staining, following USEPA method 600/R-93/116. Suspect lead-containing paint samples were sent to EMSL Inc. in Ottawa, Ontario.

The laboratory analytical reports are presented in APPENDIX A.

2.3 Reporting & Risk Assessment

CM3 provides all building information, methodology, laboratory results, and findings within the report. All information respecting detailed findings, quantities, access issues, conditions, and action items are reported.

2.3.1 Assessment of Condition

Spray Applied Fireproofing, Insulation, and Texture Finishes

To evaluate the condition of ACM spray applied as fireproofing, thermal insulation, or texture, decorative or acoustic finishes, the following criteria are applied:

GOOD - Surface of material shows no significant signs of damage, deterioration or delamination. Up to 1 percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the surveyor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes un-encapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.

POOR - Sprayed materials show signs of damage, delamination or deterioration. More than 1 percent damage to surface of ACM spray.

In observation areas where damage exists in isolated locations; both GOOD and POOR condition may be reported. The extent or percentage of each condition will be recorded on the survey or re-assessment form. FAIR condition is not utilized in the evaluation of the sprayed fireproofing, sprayed insulation, or texture coat finishes.

The evaluation of ACM spray applied as fireproofing, non-mechanical thermal insulation, or texture, decorative or acoustic finishes which are present above ceilings, may be limited by the number of observations made, and by building components such as ducts or full height walls (walls that may rise to the underside of the floor above or roof deck) that obstruct the above ceiling observations. Persons entering the ceiling are advised to be watchful for ACM DEBRIS prior to accessing or working above ceilings in areas of buildings with ACM regardless of the reported condition.

Mechanical Insulation

The evaluation of the condition of mechanical insulation (on boilers, breaching, ductwork, piping, tanks, equipment etc.) utilizes the following criteria:

GOOD - Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e., scuffs or stains), but the jacketing is not penetrated.

FAIR - Minor penetrating damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges should be minor to none.

POOR - Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full height walls that obstruct observations. It is not possible to observe each foot of mechanical insulation from all angles.

Non-friable and Potentially Friable Materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials, i.e., exterior asbestos cement products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material should be treated as a friable product.

Debris from Friable ACM

The presence of fallen ACM is noted separately from the presumed friable ACM source (sprayed fireproofing, thermal insulation, texture, decorative or acoustic finishes or mechanical insulation) and is referred to as DEBRIS.

Debris from Damaged Non-Friable ACM

The presence of fallen ACM from damaged non-friable ACM is also reported separately from the non-friable ACM source. Only fallen non-friable ACM that has become friable is reported as DEBRIS.

The identification of the exact location or presence of DEBRIS on the top of ceiling tiles is limited by the number of observations made and the presence of building components such as ducts or full height walls that obstruct observations. Workers are advised to be watchful for the presence of DEBRIS prior to accessing or working in proximity to mechanical insulation or above ceilings in areas of buildings with ACM regardless of the reported presence or absence of DEBRIS.

2.3.2 Evaluation of Accessibility

The accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

ACCESS (A) - Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users may result in disturbance of ACM not normally within reach from floor level.

ACCESS (B) - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: areas within reach from a fixed ladder or catwalk, i.e., tops of equipment, mezzanines, frequently entered pipe chases, tunnels and service areas.

ACCESS (C) EXPOSED - Areas of the building above 8'-0" where use of a ladder is required to reach the ACM. Only refers to ACM that is exposed to view, from the floor or ladder, without the removal or opening of other building components such as ceiling tiles, or service access door or hatch. Does not include infrequently accessed service areas of the building.

ACCESS (C) CONCEALED - Areas of the building that require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems. Includes rarely entered crawl spaces, attic spaces, etc. Observations will be limited to the extent visible from the access points.

ACCESS (D) - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc. is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine materials in ACCESS D.

2.3.3 Action Matrix and Definitions

Immediately clean-up DEBRIS that is likely to be disturbed.

Remove, repair or enclose friable ACM in POOR or FAIR condition whose continued deterioration will result in DEBRIS that is likely to be disturbed.

The following factors are also considered in making site-specific recommendations for compliance with the regulation and the practical implementation of the Asbestos Management Plan:

- i) ACM in POOR condition is not routinely repairable. If an abatement action is necessary, removal is the recommended action (enclosure is a viable option in unusual circumstances).
- ii) Mechanical insulation in FAIR condition can be repaired or removed based on the following general recommendations applied on a case by case basis (Note: Either repair or removal are legally acceptable options for the treatment of ACM found in FAIR condition):

Repair ACM mechanical insulation found in FAIR condition in ACCESS (B) or ACCESS (C EXPOSED) areas.

Remove ACM mechanical insulation found in FAIR condition in ACCESS (B) and ACCESS (C EXPOSED) areas, where future damage to the ACM is likely to occur.

Remove ACM mechanical insulation found in FAIR condition with ACCESS (A) to eliminate the potential for re-damaging ACM by all building users.

iii) ACM in GOOD condition present in ACCESS (A) can be managed by surveillance, as long as it is not disturbed by future renovation, maintenance or demolition. However, pro-active removal of the ACM in ACCESS (A) should be considered where damage is possible by ongoing occupant activity (accidental or intentional).

iv) Non-friable or manufactured products are considered in the action matrix as follows:

Non-friable or manufactured products reported in POOR condition or friable DEBRIS resulting from the deterioration of non-friable ACM are treated as friable materials and the appropriate Action, depending on accessibility, is determined from the Action Matrix for friable ACM.

For non-friable or manufactured products reported in GOOD condition, Action 7 (surveillance) is recommended regardless of Accessibility.

v) Remove all ACM from a particular area where small quantities of asbestos are present and removal will negate the need for the use of the Asbestos Management Plan in that area.

With these principles in mind, the following Action Matrix Tables establish the recommended asbestos control action. Note that factors not included in the above discussion, such as an owner's policy decision to remove material, knowledge of upcoming maintenance, etc., may result in a recommendation that differs from this table. The ACTIONS are described in full following the table.

Table 1: Action Matrix				
	CONDITION			
ACCESS	GOOD	FAIR	POOR	DEBRIS
(A)	ACTION 5/7	ACTION 5/6	ACTION 3	ACTION 1
(B)	ACTION 7	ACTION 6/5	ACTION 3	ACTION 1
(C) EXPOSED	ACTION 7	ACTION 6	ACTION 4	ACTION 2
(C) CONCEALED	ACTION 7	ACTION 7	ACTION 4	ACTION 2
(D)	ACTION 7	ACTION 7	ACTION 7	ACTION 7

Note 1 If material in ACCESS (A)/GOOD condition is not removed ACTION 7 is required.

Note 2 If material in ACCESS (A)/FAIR condition is not removed ACTION 6 is required.

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

Note 4 If material in ACCESS (A)/GOOD condition is not removed ACTION 7 is required.

Note 5 If material in ACCESS (A)/FAIR condition is not removed ACTION 6 is required.

Action Definitions

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

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

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

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

ACTION 3 - ACM Removal Required for Compliance

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

ACTION 4 - Type 2 Precautions for Access into Areas Where ACM is present and Likely to be disturbed by Access

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

ACTION 5 - Proactive ACM Removal

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

ACTION 6 - ACM Repair

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

ACTION 7 - Routine Surveillance

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

2.4 Findings

The findings were derived using information gathered during the visual assessment by the surveyors, no samples were collected as part of the assessment as there are no concerns with regards to asbestos-containing materials, due to the age of construction.

2.4.1 Exterior Finishes

The exterior finishes were observed to consist of brick masonry, poured concrete foundation and applications of paring cement. No suspect asbestos-containing materials were observed on the exterior of the building.

According to available information, all roof areas were replaced in 2008, so it is unlikely to contain asbestos.

2.4.2 Flooring

The interior flooring was observed to consist of poured concrete, carpet and various applications of vinyl floor tiles. There are no concerns with regards to suspected asbestos-containing materials.

2.4.3 Interior Finishes

The interior wall finishes were observed to consist of drywall throughout. There are no concerns with regards to suspected asbestos-containing materials.

2.4.4 Ceiling Finishes

The ceilings throughout the building were observed to consist of drywall, various acoustic ceiling tiles and steel deck. There are no concerns with regards to asbestos-containing ceiling finishes; therefore, no samples were collected during the assessment.

2.4.5 Thermal Systems Insulation

Mechanical pipes throughout the building were observed to be either uninsulated or insulated with non-asbestos applications of fibreglass. Ductwork throughout the building was observed to be uninsulated. There are no concerns with regards to asbestos-containing insulating materials; therefore, no samples were collected as part of the assessment.

Suspected mould growth was observed on mechanical pipe insulation in the mechanical room.

3 LEAD

Lead is a naturally occurring metal element and is the most common metal found in the environment. Pure metallic lead was primarily used to make products such as electric storage batteries, ammunition, solder, radiation shields, pipes and sheaths for electric cables. The most common organic lead compounds are tetraethyl (TEL) and tetra methyl (TML) lead that were used as anti-knock agents in gasoline. Inorganic lead compounds such as lead oxides, chromates, carbonates and nitrates are commonly found in insecticides, pigments, paints, frits, glasses, plastics and rubber compounds.

When testing was deemed necessary, paint chip samples were submitted to a third-party laboratory (Paracel Laboratories) for the determination of lead content. Analysis was conducted

by the laboratory following EPA 6020 – Digestion, ICP-MS. Results were reported by the laboratory as micrograms per grams (ug/g). For the purposes of our assessment, any paint containing lead at a concentration of 0.5% by weight (i.e. 5,000ug/g, or 5,000ppm) or greater is lead-based paint (LBP). These paints represent the greatest potential exposure if disturbed. Paints confirmed to contain lead at a concentration of at least 0.009% by weight (i.e. 90ug/g, or 90ppm) but less than 0.5% by weight are considered lead-containing paints (LCP). These paints may present an exposure hazard depending on the type of work activities (i.e. degree of disturbance) and length of exposure. Paint with lead concentrations below 0.009% by weight are not considered to be lead-containing and represent little to no lead exposure hazard.

A variety of paints were observed throughout the building. No paint chip samples were collected as part of the assessment.

Please note lead may be present in solder joints, cast iron piping joints and on copper piping in the building.

4 SILICA

Silica occurs naturally as crystalline or amorphous material. It is normally found in concrete, mortar, acoustic ceiling tiles, and stucco finishes. Crystalline silica is more toxic than amorphous silica, and therefore, is only regulated under the Occupational Health and Safety Act. The TWael of a worker to silica dust is to be maintained at the lowest practical level with a view to achieving an ambient air concentration lower than 0.10 mg/m³ of air for quartz and tripoli, and 0.05 mg/m³ of air for cristobalite and tridynite.

Silica is expected to be present in the concrete building materials, non-fiberglass acoustic ceiling tiles, and drywall joint compound. No sampling was completed for silica analysis.

5 MERCURY

Mercury may be commonly found in thermostats, fluorescent lamp tubes and High Intensity Discharge (HID) light bulbs. Mercury or mercury vapour within light fixtures, thermometers, thermostats and electrical switches poses no risks to workers or occupants provided that the mercury containers remain intact and undisturbed.

The TWael of a worker to mercury compounds is to be maintained at the lowest practical level and not to exceed an eight-hour average concentration of 0.05 mg/m³ of air for all mercury except alkyl mercury oxide for which a concentration of 0.01 mg/m³ of air should not be exceeded.

Mercury vapor is expected to be present within fluorescent lighting identified throughout the building. Mercury may also be used as a preservative in paints.

6 ARSENIC

Arsenic can be found in paint on roofing flashings, floors, walls and on the underside of the concrete ground floor structures in old buildings. The Time-Weighted Average Exposure Limits

(TWAEL) of a worker exposed to airborne arsenic is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 10 mg/m³ of air.

Considering the age of the building, arsenic could be present in the above listed materials. However, there is a low probability of finding arsenic-based coatings and minor amounts of this metal did not justify that the sampling be performed in the present assessment.

7 OTHER DESIGNATED SUBSTANCES

7.1 ACRYLONITRILE

Acrylonitrile is used to produce polymers such as acrylonitrile-butadiene-styrene (ABS) resins. These polymers are used in the manufacturing of a wide range of commercial products (i.e., automotive parts, clothing, carpets, etc.).

Workers are typically exposed to acrylonitrile at manufacturing facilities that produce the aforementioned products through inhaling its vapour, direct skin contact, or through ingestion. Although, acrylonitrile may be present in some of the building materials, including adhesives and coatings, the chemical will likely be bonded in the polymer form. Therefore, it is not expected that an adverse exposure to acrylonitrile will occur unless the building materials are heated to extreme temperatures.

The TWAEL of a worker exposed to airborne acrylonitrile is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 4.3 mg/m³ of air (2 ppmv).

In its hardened polymer form, acrylonitrile is not expected to release emissions that would exceed the allowable limits. Pure acrylonitrile was not identified within the subject building.

7.2 BENZENE

Benzene is typically found in petroleum-based products such as gasoline and diesel fuels, asphalt and other hydrocarbon-based products. Based on the age of the subject building it is unlikely that benzene is present in the paints, adhesives, roofing materials. Furthermore, over time, the benzene compound typically volatilizes out of the products and is released into the ambient air. Therefore, it is likely that only trace levels of benzene exist in the building.

Health effects of benzene exposure include irritation of eyes, skin, respiratory system, dizziness, and nausea. Benzene is classified as potential human carcinogens.

The TWAEL of a worker exposed to airborne benzene is to be maintained at the lowest practical level with a view to achieving an ambient air concentration lower than 3.2 mg/m³ of air (1 ppmv) and not exceed an eight-hour average concentration of 16 mg/m³ of air (5 ppmv).

Direct sources of benzene emissions were not identified within the building.

7.3 COKE OVEN EMISSIONS

Coke oven emissions are the exhaust released during the burning process of coke (pure carbon). This process was not observed and is not expected to take place within this building; therefore, it is unlikely that coke oven emission concentrations will exceed the maximum allowable TWAEV of 0.15mg/m³ for occupants in the structure.

7.4 ETHYLENE OXIDE

Ethylene oxides are used in production of many foams, adhesives, and paints. Over time, ethylene oxide will volatilize out of these materials and may be present in trace amounts in the ambient air in the building. It is not expected that ethylene oxide levels will become hazardous to occupants in the structure.

Processes that may release ethylene oxide to ambient air were not identified within the subject building.

7.5 ISOCYANATES

Isocyanates are raw materials from which all polyurethane products are made. Over time, isocyanates may volatilize out of these materials but will only be present in trace amounts.

Health effects of isocyanate exposure include irritation of skin and mucous membranes, chest tightness, and difficult breathing. Isocyanates include compounds classified as potential human carcinogens and known to cause cancer in animals. The main effects of hazardous exposures are occupational asthma and other lung problems, as well as irritation of the eyes, nose, throat, and skin.

The TWAEV of a worker exposed to isocyanate dust is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 0.2 µmoles/m³ of air (0.005 ppmv).

Manufactured products under normal conditions do not typically pose a health risk. However, sawing or scraping uncured polyurethane that still contains some unreacted-NCO groups will release isocyanate dust. Uncured polyurethanes were not identified within the subject building.

7.6 VINYL CHLORIDE

Vinyl Chloride is found in many applications such as PVC pipes and fittings.

The TWAEV of a worker exposed to vinyl chloride emission is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 5.2 mg/m³ of air (1 ppmv).

Vinyl chloride in the PVC compound is bound in a solid matrix that is unlikely to become airborne. Vinyl chloride emissions are not likely to exceed the prescribed limits within the subject building.

7.7 POLYCHLORINATED BIPHENYLS (PCBs)

Chlorobiphenyls (PCB's) can be found in equipment such as transformers, capacitors, electromagnets, heat transfer unit, hydraulic engine and fluorescent lamp ballasts. Two federal Canadian Environmental Protection Act (CEPA) regulations apply to the use and storage of PCB's. The Chlorobiphenyls Regulation (SOR/2008-273) limits the quantity of out of service PCB materials that can be stored at a facility for more than 6 months to 1 kg of PCB. There are also several government policies and guidelines that outline safe practices for the handling and storage of PCB containing material. Fluorescent lamp ballasts may contain minor quantities of PCBs (23.6 g). No out of service ballasts were observed and it is unlikely that the above quantity would ever be exceeded.

Random suspect fluorescent lamp ballasts were inspected during the site reconnaissance and compared to the information outlined in the 1991 Environment Canada publication "Identification of Lamp Ballasts Containing PCBs". No PCB containing ballasts were observed. However, due to the overall quantity of ballast it was impractical to inspect all ballasts during this assessment; therefore, it is possible that PCB containing ballasts are present within the building.

7.8 OZONE DEPLETING SUBSTANCES (ODSs)

ODSs have been widely used in many industrial, commercial and residential applications. They can be found in applications such as refrigerants in heat pumps, refrigerators, freezers and air conditioners (A/C); blowing agents for plastics, foam product and insulation; cleaning agents for metals, electronic equipment and components; and as dry-cleaning fluids.

Ontario Regulation 463/10 "Ozone Depleting Substances and Other Halocarbons", made under the Environmental Protection Act, outlines definitions for what chemical substances constitute an ODS. The regulation also defines the requirements for sale, transfer, handling, labelling and worker training.

Sources of ODSs in the building were primarily movable contents, or non-base building such as A/Cs, refrigerators, chillers, and freezers, and several hand-held portable fire extinguishers.

7.9 UREA FORMALDEHYDE FOAM INSULATION (UFFI)

UFFI was developed in Europe in the 1950's as an improved means of insulating difficult to reach cavities in house walls. It was typically injected through 1cm to 2cm diameter holes drilled in interior or exterior walls. During the 1970's when concerns about energy efficiency led to efforts to improve insulation in Canada, UFFI became an important insulation product for existing buildings. Most installations occurred between approximately 1970 and Dec. 1980. The use of UFFI was then banned by the Canadian Hazardous Products Act.

Interior and exterior spaces were inspected to identify if UFFI was present. No hole's indicative of the possible injection of UFFI were identified in the interior or exterior walls of the building.

7.10 DROPPINGS

Bird and animal droppings may present a health risk. The most serious health risks arise from disease organisms that grow in the nutrient rich accumulations of bird and animal droppings. Fungal diseases are associated with bird, bat and animal droppings. The two most common diseases associated with bird and bat droppings are histoplasmosis and cryptococcosis.

No significant presence of droppings were observed, however there may be droppings within concealed cavities and spaces.

7.11 VISIBLE MOULD

Moulds and fungi are ubiquitous in nature and are necessary for the breakdown of leaves, wood and other plant debris. These micro-organisms can enter a building directly or by their spores being carried in by the air, people, or contents, etc.

Mould need three things to grow: moisture, food source, and optimum temperatures. The key factor is moisture. In modern buildings, moisture is present as the result of:

- Flooding;
- Leaks in the roof or plumbing;
- Sealed buildings that do not allow excess moisture to escape;
- Sources such as cooking facilities, showers, etc.; or,
- Excess humidity.

This assessment has been performed to determine presence of visible mould growth and is limited in its nature. No sampling (air, bulk, lift, etc.) was completed as part of this assessment. A visual inspection of interior surfaces in the subject building was completed by CM3 to identify areas where apparent mould was most likely to proliferate (i.e., areas where water damage/staining was visible on building material surfaces). An intrusive assessment was not completed as part of this investigation. Assessing potential health risks to potential building occupants was beyond the scope of our investigation.

Material observed with black staining and/or a textured and discoloured appearance is described as apparent or suspect mould propagation.

- Suspected mould growth was observed on a mechanical pipe fitting located in the mechanical room.
- According to information provided by the College. A roof/mechanical unit leak and a loose plumbing fitting for a dishwasher resulted in water damage/visible mould on impacted building materials. Mould remediation procedures were followed while removing the impacted building materials, however mould may still be present in concealed wall/ceiling cavities.

7.12 RADIOACTIVITY

Ionization smoke detectors contain a small amount of a radioactive isotope, usually Americium-241. Americium-241 emits alpha particles, a type of ionizing radiation. Alpha particles are high-energy, but they can be stopped by a few centimeters of air or a thin sheet of paper, making them safe for use in this context when contained. The presence of ionization smoke detectors was not observed.

Radon is a naturally occurring radioactive gas produced by the decay of uranium in soil, rock, and water. Certain areas of Eastern Ontario are known to have sub-surface geological formations that can produce Radon.

8 RECOMMENDATIONS

This report must be provided to contractors prior to conducting demolition or renovation work at the Site. A copy of the survey must be immediately available at the Site whenever workers are present. Further, contractors shall have an exposure control plan in place for each designated substance identified in this report as being in way of the planned work.

If suspect asbestos or other hazardous materials are identified during the project that are not discussed and reported within this document then work must stop, until further assessment is completed.

CM3 provides the following recommendations based on the information provided by Algonquin College, our observations, the regulatory framework, and the Statement of Limitations provided in Section 17 of this report.

8.1 Lead

If work on lead containing materials is likely to produce lead dust or fumes, for example during welding, torch cutting, grinding, sanding or sandblasting, then proper precautions should be followed. As best industry practice, CM3 recommends that the Ministry of Labour "Guideline for Lead on Construction Projects" be followed when working with potential lead hazards.

The Time-Weighted Average Exposure Limits (TWAEEL) of a worker to lead is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 0.05 mg/m³ of air for non-tetraethyl lead and 0.10 mg/m³ of air in the case of tetraethyl lead.

Waste generated from demolition activities that contain lead, such as lead-based paint undergo Toxicity Characteristic Leaching Procedure testing in order to classify the waste. If the concentration of lead exceeds that of the leachate quality criteria then waste must be classified as hazardous and must be disposed of at a landfill that accepts hazardous waste in accordance with O. Reg 347, as amended.

Similar to the asbestos Regulation, the guideline outlines suggestions for worker protection, protective equipment, and defines the different work classifications for working on materials that contain lead.

The guideline defines work classification based on the type of material being handled, the condition of the material and quantity of material being handled. In general terms they are referenced as the following:

Type 1 measures and procedures, or low risk work, and requires basic engineering controls and worker protection (e.g., perimeter tape, drop sheets, etc.).

Type 2 measures and procedures, or moderate risk work, and requires upgraded engineering controls and worker protection (e.g., enclosures, wash stations, etc.).

Type 3 measures and procedures, or high-risk work, and requires maximum engineering controls and worker protection (e.g., enclosures, showers, multi stage decontamination, etc.).

8.2 Silica

Silica occurs naturally as crystalline material in concrete and cement. Crystalline silica is significantly more toxic than amorphous silica. Therefore, for health reasons, only crystalline varieties are regulated under Ontario Regulation 490/09 as one of the designated substances. Silica dust can be generated through such processes such as blasting, grinding, crushing or sandblasting silica-containing material. Silica is often found contained within concrete walls, stairs and ramps. Therefore, appropriate respiratory protection and ventilation must be utilized during construction and demolition. As best industry practice CM3 recommends that the ministry of Labour “Guideline for Silica on Construction Projects” is followed when dealing with potential silica hazards.

Similar to the asbestos Regulation, the guideline outlines suggestions for worker protection, protective equipment, and defines the different work classifications for working on materials that contain silica.

The guideline defines work classification based on the type of material being handled, the condition of the material and quantity of material being handled. In general terms they are referenced as the following:

Type 1 measures and procedures, or low risk work, and requires basic engineering controls and worker protection (e.g., perimeter tape, drop sheets, etc.).

Type 2 measures and procedures, or moderate risk work, and requires upgraded engineering controls and worker protection (e.g., enclosures, wash stations, etc.).

Type 3 measures and procedures, or high-risk work, and requires maximum engineering controls and worker protection (e.g., enclosures, showers, multi-stage decontamination, etc.).

8.3 Mercury

If mercury (Hg) is removed or relocated, work must be completed in accordance with Ontario Regulation 490/09. Recycling of fluorescent light tubes should be performed by a contractor. If removed, fluorescent tubes must be recycled.

Mercury may also be present as a preservative in paints.

The TWAEEL of a worker to mercury is to be maintained at the lowest practical level and not exceed an eight-hour average concentration of 0.025 mg/m³ of air for all forms of mercury except alkyl compounds which is 0.01 mg/m³ of air. If work on mercury containing materials is likely to produce mercury dust or fumes, for example during welding, torch cutting, grinding, sanding or sandblasting, then proper precautions should be followed.

8.4 PCBs

During any lighting refit or during routine maintenance the old ballast should be inspected for PCBs. Any ballasts found to contain PCBs should be stored separately on a temporary basis until they can be disposed of by a licensed waste hauler.

8.5 ODSs

If any ODS containing non-base building equipment is to be removed for disposal, all ozone depleting refrigerants must be removed by an individual, licensed to perform such work in accordance with the Ozone Depleting Substance Regulation 1998 SOR/99-7 under the Canadian Environmental Protection Act, prior to the disposal of any ozone depleting substance-containing equipment.

8.6 Visible Mould

8.7 Radioactivity

Eastern Ontario is recognized as a region with variable radon levels due to its geological composition, which includes uranium-rich rock formations. To ensure the health and safety of building occupants, it is prudent to assess (e.g. sampling) and address potential radon risks.

Proactively managing radon risks will help safeguard the health of building occupants and comply with best practices in indoor air quality management

9 STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by CM3 Environmental Inc. for Algonquin College. It is intended for the sole and exclusive use of Algonquin College and their authorized agents for the purpose(s) set out in this report. Any use of, reliance on or decision made based on this report by any person other than Algonquin College for any purpose, or by Algonquin College for a purpose other than the purpose(s) set out in this

report, is the sole responsibility of such other person or Algonquin College and CM3 Environmental Inc. make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

Any conclusions or recommendations made in this report reflect CM3 Environmental Inc.'s judgment based on the following limited investigations: visual site inspection(s) on the date(s) set out in this report; examination of public records; and interviews with individuals having information about the site. While efforts have been made to substantiate information provided by third parties, CM3 Environmental Inc. makes no representation or warranty as to its completeness or accuracy.

This report has been prepared for specific application to this site. Unless otherwise stated, the findings cannot be extended to previous or future site conditions; portions of the site which were unavailable for direct investigation; subsurface locations which were not investigated directly; or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site; and substances addressed by the investigation may exist in areas of the site not investigated or in quantities not ascertained.

Nothing in this report is intended to constitute or provide a legal opinion. CM3 Environmental Inc. makes no representation as to the requirements of or compliance with environmental laws, rules, regulations or policies established by federal, provincial or local government bodies. Revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Algonquin College and their authorized agents and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of CM3 Environmental Inc.

APPENDIX A

Photographic Log

Designated Substance Report

Building K

201 Adjudjàk Private

Client: Algonquin College

CM3 Project Number: TC1738

Designated Substances and Hazardous Materials Report
Building K, Ottawa Campus
201 Adjudjak Private, Ottawa, Ontario



Photograph 1: Typical view of the exterior of the building.



Photograph 2: View of main entrance reception area.



Photograph 3: View of non-asbestos containing fiberglass insulation observed on mechanical pipes throughout.



Photograph 4: View of suspect mould impacts on mechanical pipe fittings observed in the Mechanical Room.

APPENDIX B

Database Room by Room

Designated Substances and Hazardous Materials Report

Building K

201 Adjudjàk Private

Client: Algonquin College

CM3 Project Number: TC1738

Campus	Building	Floor	Room Number	Room Description	Location	Material Description	Approximate Quantity (m2)	Condition	Friability	Accessibility	Laboratory	Asbestos Type (%)	Report Reference	Sample ID	Change Log
Ottawa	K	1	K101A		Floor	Carpet	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K101A		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K101A		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K101		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K101		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K101		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K101		Ceiling	2'x4' Ceiling Tile	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K102		Floor	12"x12" Vinyl Tiles (Blue,Grey)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K102		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K102		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K103		Floor	12"x12" Vinyl Tiles (Grey with white streaks)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K103		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K103		Ceiling	2'x4' Ceiling Tile	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K104		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K104		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K104		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K105		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K105		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K105		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K106		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K106		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K106		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K107		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K107		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K107		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K108		Floor	Poured Concrete	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K108		Floor	Rubber Floor	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K108		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	No ACM	N/A	2016 InAir		
Ottawa	K	1	K108		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K109		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K109		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K109		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K110		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K110		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K110		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K110		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K111		Floor	12"x12" Vinyl Tiles (Grey with white streaks)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K111		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K111		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K112		Floor	12"x12" Vinyl Tiles (Grey with white streaks)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K112		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K112		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K113		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K113		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K113		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K114		Floor	12"x12" Vinyl Tiles (Grey with white streaks)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K114		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K114		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K115		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K115		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K115		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K116		Floor	12"x12" Vinyl Tiles (Grey with white streaks)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K116		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K116		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K117		Floor	12"x12" Vinyl Tiles (Grey with white streaks)	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K117		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K117		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K118		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K118		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K118		Ceiling	2'x4' Ceiling Tiles	N/A	N/A	N/A	N/A	No ACM	N/A			

Campus	Building	Floor	Room Number	Room Description	Location	Material Description	Approximate Quantity (m2)	Condition	Friability	Accessibility	Laboratory	Asbestos Type (%)	Report Reference	Sample ID	Change Log
Ottawa	K	1	K137		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K138		Floor	12"x12" Vinyl Tiles (beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K138		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K138		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K139		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K139		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K139		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K140		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K140		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K140		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K141		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K141		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K141		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K142		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K142		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K142		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K143		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K143		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K143		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K144		Floor	12"x12" Vinyl Tiles (Beige with grey specks)	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K144		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K144		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K145		Floor	Rubber Floor	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	1	K145		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	1	K145		Ceiling	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	2	K200		Floor	Poured Concrete	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	2	K200		Wall	Drywall Joint Compound	N/A	N/A	N/A	N/A	Negative	N/A	2016 InAir		
Ottawa	K	2	K200		Ceiling	Steel Deck	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K	2	K200		Mechanical	Fibreglass Insulation	N/A	N/A	N/A	N/A	No ACM	N/A			
Ottawa	K		Throughout		Mechanical	Fibreglass Insulation	N/A	N/A	N/A	N/A	No ACM	N/A			

APPENDIX C

Drawings

Designated Substances and Hazardous Materials Report

Building K

201 Adjudjàk Private

Client: Algonquin College

CM3 Project Number: TC1738

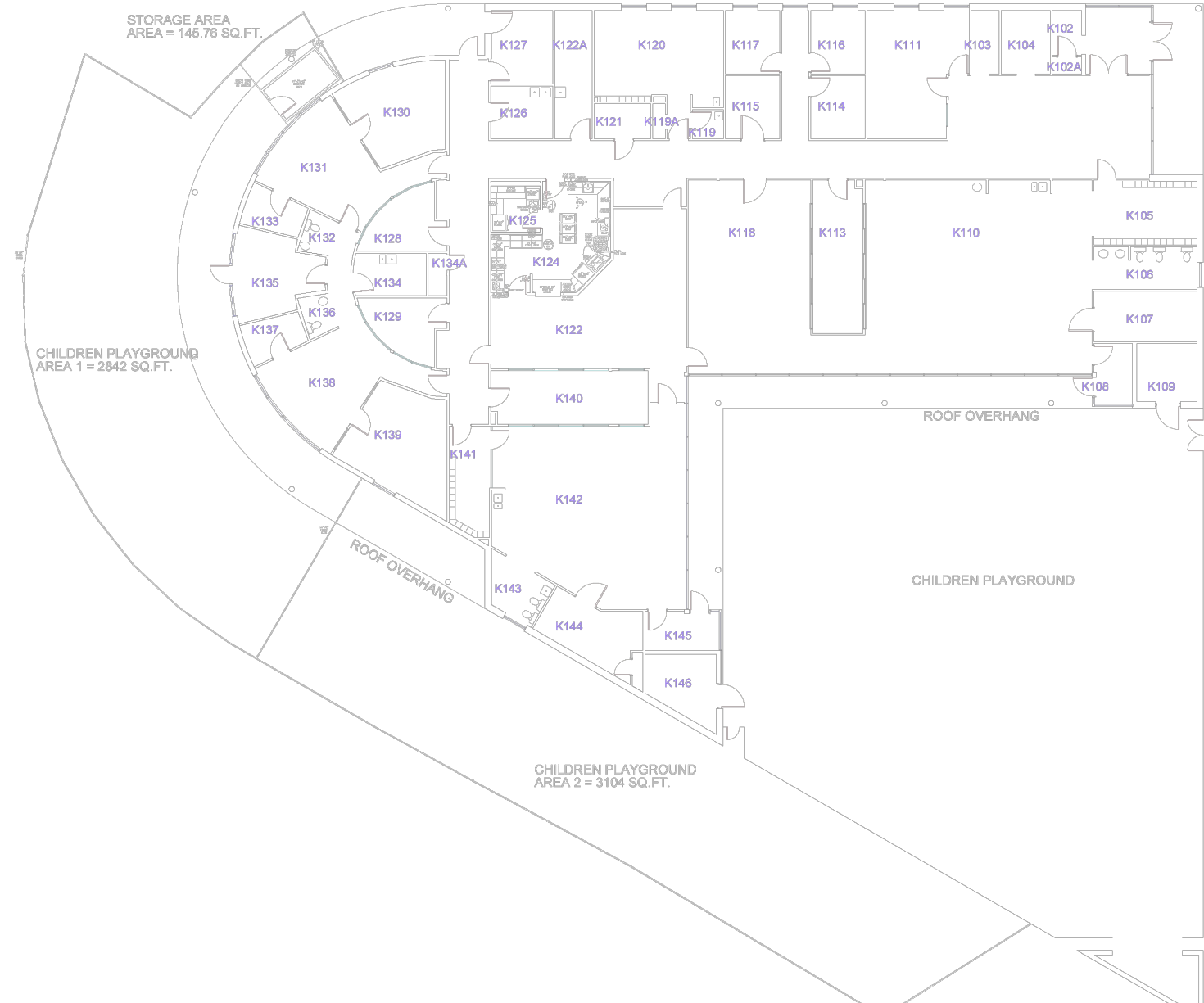


**FACILITIES MANAGEMENT DEPARTMENT
FACILITIES DEVELOPMENT**

1385 WOODROFFE AVENUE | G-BUILDING | OTTAWA | ONTARIO | K2G 1V8 | TEL: 613-727-4728, EXT. 7710



BUILDING K - 1st. FLOOR PLAN
NOT TO SCALE



NOTES:
- GIVEN THE AGE OF CONSTRUCTION THERE ARE NO CONCERNS WITH REGARDS TO ASBESTOS - CONTAINING MATERIALS.
- GIVEN THE AGE OF CONSTRUCTION THERE ARE NO CONCERNS WITH REGARDS TO LEAD-CONTAINING PAINTS.



5710 AKINS ROAD, OTTAWA, ON
K2S 1B8



ALGONQUIN COLLEGE

DESIGNATED SUBSTANCES AND
HAZARDOUS MATERIALS REPORT -
BUILDING K

ALGONQUIN COLLEGE - WOODROFFE
OTTAWA, ONTARIO

FIRST FLOOR PLAN

Project:	TC1738	Drawn By:	GG
Date:	MARCH 2026	Reviewed By:	TC
Scale:	N.T.S.	Figure:	1

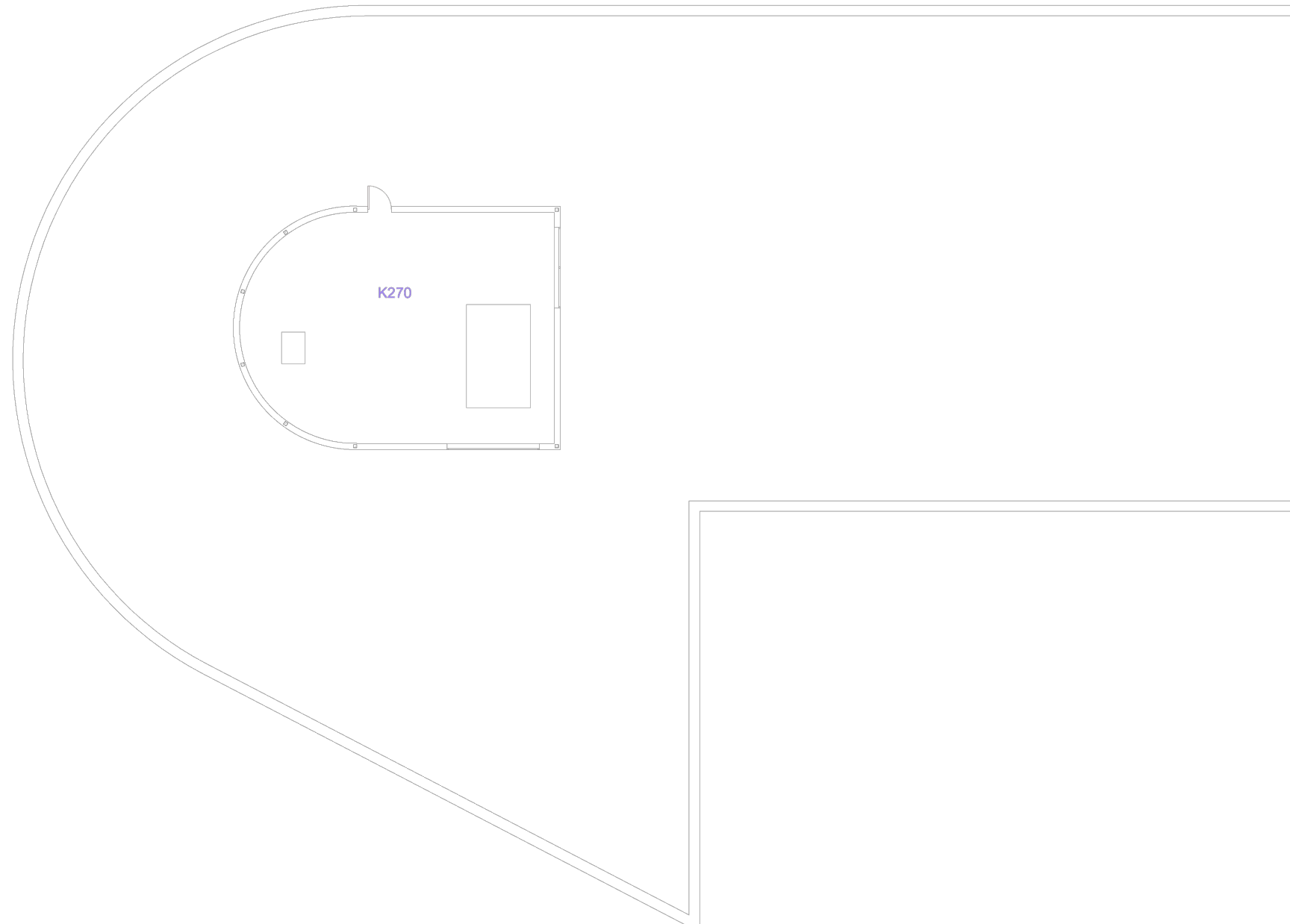
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FACILITIES DEVELOPMENT
 1385 WOODROFFE AVENUE | G-BUILDING | OTTAWA | ONTARIO | K2G 1V8 | TEL: 613-727-4728, EXT. 7710



BUILDING K - 2nd. FLOOR PLAN
 NOT TO SCALE



NOTES:
 - GIVEN THE AGE OF CONSTRUCTION THERE ARE NO CONCERNS WITH REGARDS TO ASBESTOS - CONTAINING MATERIALS.
 - GIVEN THE AGE OF CONSTRUCTION THERE ARE NO CONCERNS WITH REGARDS TO LEAD-CONTAINING PAINTS.



5710 AKINS ROAD, OTTAWA, ON
 K2S 1B8



ALGONQUIN COLLEGE

DESIGNATED SUBSTANCES AND
 HAZARDOUS MATERIALS REPORT -
 BUILDING K

ALGONQUIN COLLEGE - WOODROFFE
 OTTAWA, ONTARIO

SECOND FLOOR PLAN

Project:	TC1738	Drawn By:	GG
Date:	MARCH 2026	Reviewed By:	TC
Scale:	N.T.S.	Figure:	2

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