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**ASBESTOS PRODUCT SURVEY  
THAMES VALLEY DISTRICT SCHOOL BOARD**

**PRINCE ANDREW PUBLIC SCHOOL**

**Building #: 1545**



Prepared for:

**THAMES VALLEY DISTRICT SCHOOL BOARD**

951 Leathorne Street  
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October 9, 2007  
Project No.: 06-3357



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## 1.0 INTRODUCTION

Advanced Environmental Corp. (AEC) was retained by the Thames Valley District School Board (the Board) to conduct an investigation of asbestos-containing materials (ACM) at Prince Andrew Public School located at 15237 Thirteen Mile Road in Denfield, Ontario (the Site).

Asbestos is a general name for several varieties of highly fibrous silicate minerals. Commercially significant types of asbestos include chrysotile, amosite and crocidolite. The fibres are valued for their heat and chemical resistance properties. The combination of fibrous structures, low heat conductivity, high electrical resistance, chemical inertness, strength and flexibility, as well as its effectiveness as a reinforcing or binding agent when combined with cement and/or plastic, made asbestos popular for widespread industrial use. The most common friable building products used in construction are surfacing materials (sprayed fireproofing, textured finishes, decorative or acoustic finishes) and thermal insulations. Manufactured materials containing asbestos include vinyl floor tiles, ceiling tiles, gasket material, asbestos cement products and asbestos textile.

One measure of the potential hazard of ACM is its friability. The Ontario Ministry of Labour asbestos regulation defines a friable material as one when dry can be crumbled, pulverized or powdered by hand pressure or is crumbled, pulverized or powdered. The friability of ACM is theoretically an indicator of the ease with which fibres may be released into the air. Non-friable products with bound asbestos pose no danger of releasing airborne fibres unless cut, broken up or otherwise physically abraded.

The following report was prepared to comply with the Ontario Ministry of Labour Regulation 278/05 under the *Occupational Health and Safety Act* (Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations).

Ontario Regulation 278/05 defines an asbestos-containing material (ACM) as a material that contains 0.5 per cent or more asbestos by dry weight.

The following report explains the survey methodology and summarizes the survey findings.

## **2.0 SURVEY METHODOLOGY**

### **2.1 Methodology**

The fieldwork detailed in this report was performed by Brian Binning of AEC. During this investigation the surveyor inspected the buildings for construction materials found within or forming part of the building envelope suspected of containing asbestos. The survey only considered issues of the structure and finishes, including mechanical equipment.

Note:

- No destructive testing was performed. The inaccessible spaces within the building were not inspected. This includes areas above plaster and drywall ceilings, as well as shafts, chases and bulkheads. Similarly, motors, doors and other equipment were not disassembled to determine composition. Such items should be considered to have asbestos as a component until destructive testing demonstrates otherwise.
- Vinyl sheet flooring and vinyl floor tiles may be present beneath existing floor coverings.
- Roofing materials such as felt and sealers on flat roofs may contain asbestos. These items are typically not sampled as it may damage the integrity of the roof, resulting in leaks. These items should be tested for the presence of asbestos prior to demolition of roofing or other building components.

### **2.2 Analysis**

The samples of suspect materials were submitted for analysis to an independent, NVLAP accredited, laboratory. Preliminary identification was made using Polarized Light Microscopy (PLM), with confirmation of presence and type of asbestos made by dispersion staining optical microscopy following US EPA Method 600/R-93/116. This analytical procedure conforms to the requirements outlined in Ontario Regulation 278/05.

The number of samples collected of any asbestos-suspect material was collected in accordance with Table 1 outlined in Ontario Regulation 278/05.

## **2.3 Drawings**

Drawings outlining locations of asbestos-containing vinyl floor tile, drywall joint compound and Transite ceiling tile have been presented in Appendix III for reference.

## **2.4 Asbestos Conditions**

The condition of asbestos-containing materials is critical to the assessment of hazard. In order to help evaluate the hazard, the following terms and criteria were used:

### **2.4.1 Mechanical Insulation**

To evaluate the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment, etc.), the following criteria was applied:

**GOOD** Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes condition where the jacketing has minor 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 was exposed but not showing surface disintegration. The extent of missing insulation ranges from minor to none. Damage can be repaired.

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

### **2.4.2 Sprayed Applied Fireproofing, Insulation and Texture Finishes**

To evaluate the condition of surfacing material such as fireproofing, non-mechanical thermal insulation and texture finishes, the following criteria was applied:

**GOOD** Surface of material shows no significant signs of damage, deterioration or delamination. Up to one (1) percent visible damage to surface was allowed within range of GOOD. GOOD condition includes unencapsulated 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 one (1) percent damage to surface of ACM spray.

In observations where damage exists in isolated locations, both GOOD and POOR conditions may be applicable. FAIR condition is not utilized in the evaluation of the fireproofing, non-mechanical insulation or texture coat finishes.

#### **2.4.3 Non-friable and Potentially Friable Materials**

The condition of non-friable or potentially friable ACM, such as plaster finishes, drywall compound, ceiling tiles, asbestos cement products, vinyl asbestos and asbestos paper backed vinyl sheet flooring, which have the potential to become friable when handled were evaluated as follows:

**GOOD** No significant damage. Material may be cracked or broken but is stable and not likely to become friable upon casual contact. If there is no friable debris present, the condition is rated as GOOD.

**POOR** Material is severely damaged. Loose debris is present or binder has disintegrated to the point where the material has become friable.

The evaluation of the condition of non-friable or potentially friable materials does not utilize a FAIR condition rating.

#### **2.4.4 Asbestos-Containing Debris**

The presence of fallen debris was noted separately from the presumed asbestos-containing source material. Debris is considered to be in POOR condition.

### **2.5 Material Accessibility**

For each component four (4) categories of accessibilities were used:

A – Accessible to all occupants of the building;

B – Accessible to maintenance staff without a ladder;

C – Accessible to maintenance staff with a ladder; and,

D – Not accessible without demolition or removal of fixed building components or building systems.

## **2.6 Actions**

Recommended actions for compliance and for the management of the ACM were classified under the following eight (8) actions:

1. Action dealing with the immediate cleanup of fallen ACM likely to be disturbed.
2. Action dealing with the need to use Type 2 asbestos procedures to enter an area (other than a ceiling space).
3. Action dealing with performing asbestos removal for compliance with the regulations.
4. Action for dealing with Type 2 asbestos procedures for ceiling entry where friable ACM debris is present on top of a ceiling system.
5. Action dealing with the removal of asbestos that goes beyond compliance requirements but simplifies the asbestos management.
6. Action dealing with the repair of asbestos.
7. Action dealing with ACM surveillance requirements of the regulations.
8. Action for dealing with material that may contain asbestos but not conclusively identified in the survey.

## **3.0 FINDINGS**

### **3.1 Building Description**

The Site is a single-story building. The building has a total footprint of approximately 18,000 square feet and appears to have been constructed in 1960.

### **3.2 Asbestos**

The results of sampling for asbestos-containing materials are included as Appendix I. The ACM found during this survey is briefly summarized below. A more detailed summary of the asbestos-containing materials observed is provided in Appendix II – Room-By-Room Asbestos Materials Summary.

### **3.2.1 Sprayed Fireproofing (Friable)**

Sprayed fireproofing was observed within the boiler room. The material was applied to structural components in 2006 and has been assumed to not contain asbestos.

### **3.2.2 Textured Finish (Friable)**

Texture coat finishes were not observed during the assessment of the building.

### **3.2.3 Mechanical Insulation (Friable)**

The following types of insulation were observed:

*“Asbestos parging cement”*, a mixture of cement and asbestos fibre has been applied to elbows, tees and valves (fittings). The parging cement present in the building contains approximately 50% chrysotile asbestos (Sample Group 09).

Asbestos-containing mechanical insulation is present throughout this facility above ceilings and in occupied areas. Contractors and maintenance staff disturbing mechanical insulations during maintenance must follow appropriate asbestos related precautions.

Locations where asbestos-containing mechanical insulation has been identified during our assessment are listed in Appendix II – Room-By-Room Asbestos Materials Summary.

### **3.2.4 Acoustic Ceiling Tile (Non-Friable)**

Acoustic ceiling tiles were not observed during the assessment of the building.

### **3.2.5 Plaster (Friable) and Drywall (Non-Friable)**

Plaster finishes were not observed during the assessment of the building.

Representative samples of drywall with joint compound were submitted for analysis. Asbestos was detected at concentrations of 2.1% chrysotile (Sample Group 05). The asbestos-containing drywall joint compound was in good condition at the time of the assessment.

Locations with asbestos-containing drywall joint compound are identified on drawings located in Appendix III and within the Room-By-Room Asbestos Materials Summary in Appendix II.

### **3.2.6 Vinyl Sheet Flooring (Non-Friable)**

Vinyl sheet flooring suspected to contain asbestos was not observed during the assessment of the building.

### **3.2.7 Vinyl Floor Tile (Non-Friable)**

Based on experience, where 9" x 9" floor tiles were observed these tiles have been assumed to contain asbestos. Representative samples of all other visually distinct floor tiles were collected and submitted for analysis.

Samples of 12" x 12" floor tiles were identified and subsequently submitted for analysis. Asbestos was not detected in several sample groups (Sample Groups 02, 04 and 06) however the majority of tiles or associated mastic contain asbestos ranging from 1.2% - 2.4% chrysotile asbestos (Sample Groups 01, 07 and 08). The asbestos-containing floor tiles were in good condition at the time of the assessment.

Locations with asbestos-containing vinyl floor tile are identified on drawings located in Appendix III and within the Room-By-Room Asbestos Materials Summary in Appendix II.

### **3.2.8 Asbestos Cement Products (Non-Friable)**

Asbestos cement products or "Transite" was used as ceiling tile within several locations within the school. This material was in good condition at the time of the assessment.

Locations with asbestos-containing Transite are identified on drawings located in Appendix III and within the Room-By-Room Asbestos Materials Summary in Appendix II.

### **3.2.9 Asbestos Paper Products (Non-Friable)**

No asbestos paper products were observed during building survey.

### **3.2.10 Vermiculite Insulation (Friable)**

No loose fill vermiculite insulation was observed, however, it should be noted that this material may be present in inaccessible spaces such as cores of concrete blocks.

### **3.2.11 Other ACM**

The presence of asbestos is possible in the following materials: material components or insulation within electrical switchgear, motors, lights, etc.; mechanical packings and pipe gaskets; plastic laboratory benches; moulded chair seats or other plastic products; fire door cores; window putty or caulking. Asbestos textile may have been used as vibration dampers with ductwork. No testing of these products has been performed.

## **4.0 RECOMMENDATIONS**

### **4.1 Overall Recommendations**

As asbestos-containing materials have been found in this facility, it is subject to the requirement for an Asbestos Management Program, as specified under Ontario Regulation 278/05.

Where an owner knows that friable asbestos-containing materials has been used in the building, the owner shall,

- (a) Prepare and maintain on the premises a record of the location of the friable material,
- (b) Give any other person who is an occupier of the building written notice of any information in the record that relates to the area occupied by the person,
- (c) Give any employer with whom the owner arranges or contracts for work written notice of the information in the record, if the work,
  - (i) may involve material mentioned in the record, or
  - (ii) may be carried on in close proximity to such material and may disturb it;
- (d) Advise the workers employed by the owner who work in the building of the information in the record, if the workers may do work that,
  - (i) involves material mentioned in the record, or
  - (ii) is to be carried on in close proximity to such material and may disturb it;
- (e) Establish and maintain, for the training and instruction of every worker employed by the owner who works in the building and may do work;
- (f) Inspect the material mentioned and update the survey at reasonable intervals (annually) or whenever the owner becomes aware of new information relating to the matters within the survey.

## **4.2 Specific Recommendations**

The following recommendations are made with respect to asbestos-containing materials noted on site:

### **4.2.1 Mechanical Insulation**

Asbestos-containing mechanical insulation is present throughout the facility. Some of this insulation is in fair condition and requires repair.

Any activity, which will disturb asbestos-containing mechanical insulation, is governed by the procedures outlined in Ontario Regulation 278/05. The disturbance of less than one (1) square metre of asbestos-containing mechanical insulation may be performed as a Type 2 operation, while any greater disturbance requires Type 3 precautions.

Please refer to Appendix IV for specific Room-by-Room recommendations regarding mechanical insulation.

### **4.2.2 Vinyl Floor Tiles**

Currently the vinyl asbestos floor tiles identified at the Site are in good condition and do not require remediation.

Vinyl floor tiles may be removed, with manually powered tools, following the Type 1 procedures outlined in Ontario Regulation 278/05. The use of powered equipment on non-friable asbestos materials, an activity which could result in the release of airborne fibres, must be performed under Type 3 precautions, unless the equipment is equipped with a HEPA filtered dust collection system.

### **4.2.3 Drywall Joint Compound**

Currently the asbestos-containing joint compound identified at the Site is generally in good condition and does not require remediation.

The removal of less than one (1) square metre of drywall where asbestos-containing drywall joint compound has been used may be conducted following Type 1 procedures outlined in Ontario Regulation 278/05. The removal of more than one (1) square metre of drywall where asbestos-containing drywall joint compound has been used must be conducted following Type 2 procedures outlined in Ontario Regulation 278/05.

#### 4.2.4 Asbestos Cement Products

Currently the asbestos cement ceiling tile products located at the Site are in good condition and do not require remediation.

Asbestos cement product tiles may be removed, with manually powered tools, following the Type 1 procedures outlined in Ontario Regulation 278/05. The use of powered equipment on non-friable asbestos materials, an activity which could result in the release of airborne fibres, must be performed under Type 3 precautions, unless the equipment is equipped with a HEPA filtered dust collection system.

#### 5.0 LIMITATIONS AND WARRANTY

AEC has prepared this report for the exclusive use of the Client in evaluating the Site at the time of AEC's assessment. AEC will not be responsible for the use of this report by any third party, or reliance on or any decision to be made based on it without the prior written consent of AEC. AEC accepts no responsibility for damages, if any, by any third party because of decisions or actions based on this report.

The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with that level of care and skill normally exercised by qualified professionals currently practising in this area of environmental assessment. No other warranty, expressed or implied, is made.

The findings contained in this report are based upon conditions as they were observed at the time of investigation. No assurance is made regarding changes in conditions subsequent to the time of investigation.

If new information is developed in future work, AEC, should be contacted to re-evaluate the conclusions of this report and to provide amendments as required.

Respectfully submitted,

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