

HAZARDOUS MATERIALS

Hanover High School

ATC Associates Inc. (ATC) was retained by Dore and Whittier, Inc., to perform a Hazardous Materials Assessment regarding remediation of environmental hazards at the following school located in Hanover, Massachusetts:

?? Hanover High School

ATC's representatives performed a site review to determine the locations of hazardous materials that may be affected by the forthcoming proposed renovation work at the school.

Note: ATC's Hazardous Materials Assessment did not include any sampling and analysis of materials as part of this study.

ATC's Scope of Work for this project included a cursory review of the following hazardous materials typically found in school buildings:

1. Lead Paint
2. Asbestos
3. Underground Storage Tanks (UST)
4. Miscellaneous Hazardous Materials (i.e. PCB light ballast's, disposal drums, chemical storage, etc.)

Outlined below is a summary of ATC's findings:

I. Lead Paint Materials

The building was originally constructed in the 1958 with subsequent renovations in 1964. The building construction dates would indicate a higher potential for lead-containing paint to present within the building than if it were built in early 1970's just prior to the Consumer Product Safety Commission (CPSC) banning the sale of commercial paint that contained greater than 0.006% lead. This is based upon the fact that the Consumer Product Safety Commission (CPSC) did not ban the sale of commercial paint that contained greater than 0.006% lead until 1976.

The Occupational Safety and Health Administration (OSHA) under their 29 CFR 1926.62 Regulation, consider elemental lead (i.e. >0.0) to be considered lead containing and subject to their worker protection regulations. Therefore, ATC recommends that appropriate lead testing be performed within the building and all results disclosed to the Contractor as part of the Bid Documents.

In addition, any building components that are found to contain any detectable lead will also be subject to federal Resource Conservation and Recovery Act (RCRA) regulations with regards to disposal. Appropriate Toxicity Characteristic Leaching Procedure (TCLP) sampling shall be required of the waste streams to determine if the material is considered hazardous waste for lead. ATC does recommend that representative TCLP samples be collected of the building components subject to disposal and the results be provided to the Contractor as part of the Bid Documents.

II. Asbestos Materials

ATC performed a cursory review for suspect asbestos-containing materials (ACM) located in accessible areas of the building as well as the Asbestos Hazard Emergency Response Act (AHERA) plan. The AHERA Plan, which was developed for the building in 1988 as required by federal law, included procedures for in-place management of identified asbestos containing materials. However, at the time of the AHERA plan development, the known list of suspect asbestos-containing materials required to be identified were far less than what is required by today standards. In addition, the amount of samples required to be collected and analyzed for each suspect material by the original AHERA regulations was completed to minimal standards as well.

The results of that plan indicated the following asbestos-containing materials to be present within the building:

- ?? 9" x 9" Floor Tile and Mastic
- ?? 12" x 12" Floor Tile and Mastic
- ?? Flex Connectors in Duct work
- ?? Linoleum Countertops
- ?? Pipe and Fitting Insulation
- ?? Boiler Flue Insulation
- ?? Hot Water Tank Insulation
- ?? Textured Ceiling Material
- ?? Sprayed-On Fireproofing

The majority of these materials were observed to be present and in fair to good condition. However, ATC did perform closer review of the existing sprayed-on fireproofing material located on the structural beams in the 1964 addition. This material is considered "friable" and is only visible above the existing 2' x 4' ceiling tiles in the 1st floor corridor. Visually, the material appeared to be in good condition

with possible surface contamination to the topside of the ceiling tiles located directly adjacent to the structural beams. The school maintenance staff presently monitors the condition of the material on a 6- month basis in accordance with the AHERA Management Plan. However, ATC recommends that access to the areas above the ceiling tiles be restricted to only qualified asbestos personnel in accordance with AHERA Plan until such time that the material can be properly removed during the renovation process.

ATC would like to also point out that at the time of the AHERA plan development (1988), the known list of suspect asbestos-containing materials required to be identified were far less than what is required by today standards. In addition, the amount of samples collected and analyzed for each suspect material by the original AHERA plan was completed to minimal standards as well.

Therefore, the following additional suspect ACM was observed by ATC and will require sampling to confirm asbestos content:

- ?? Covebase and Mastic
- ?? Carpet Mastic
- ?? Sink Coating
- ?? Door Caulking
- ?? Glue Daubs behind Chalkboards/Wall Boards
- ?? Ceramic Tile Grout/Mastic
- ?? Sheetrock and Joint Compound
- ?? Plaster
- ?? Window Caulking
- ?? Window Glazing
- ?? Fire Doors
- ?? Boiler Units (Interior)

In accordance with federal Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations, all materials found to be asbestos-containing in the building must be abated prior to renovation/demolition activities. Therefore, ATC recommends that a comprehensive survey be performed in the school which will (1) identify all suspect ACM subject to potential impact by forthcoming renovation activities which will comply with NESHAP Regulations; and (2) update the overall current AHERA plan for the school.

III. Underground Storage Tanks (UST's), Oil & Hazardous Materials

ATC performed an assessment as to the presence and locations of UST's and oil and other hazardous materials (OHM) at the site. ATC's review included a preliminary site investigation as well as discussions with school personnel and custodial staff on past practices and handling of OHM at the site.

The following is a summary of ATC's findings:

1. Heating was originally by No. 6 oil, then No. 4 oil, then No. 2 oil, and currently natural gas. One, single-walled, steel UST is reported to have been discovered leaking in 1988 or 1989. At that time, the UST was removed and replaced with a 10,000-gallon, single-walled steel UST. Replacement UST was reportedly removed in the early 1990s. At that time, contaminated soil from the leak associated with the initial UST was required to be removed (reportedly 3 truck loads) and groundwater was monitored for a period. No documentation readily available from the school system or Southeastern Regional Office of the Department of Environmental Protection (DEP) on the levels of impact to soil and/or groundwater. Recommend additional attempts to obtain documentation regarding soil disposal and groundwater monitoring. If documentation does not indicate that site was fully closed, recommend additional subsurface investigation to determine current levels of petroleum contaminants in soil and/or groundwater.
2. An additional UST of smaller capacity was reportedly removed in early 1990s. This UST was formerly used for No. 2 oil and was used for purposes associated with the Kitchen. Recommend obtaining documentation regarding UST removal. If insufficient documentation is available to indicate clean removal, recommend subsurface investigation to determine current soil and groundwater quality.
3. Hazardous materials generated by Science Departments and Industrial Arts are reportedly segregated and picked up every few years. Industrial Arts is currently limited to woodworking. Former metal shop has been incorporated into wood shop and maintenance area. Did not observe waste chemical collection procedures during site inspection. Four chemical storage cabinets, including flammable cabinets are present in the basement Transformer Room. Was not able to access interior of cabinets. Reportedly, odors from chemical storage area were strong in the past. Recommend proper ventilation of chemicals. Recommend proper disposal of chemicals.

4. Sixty batteries for emergency power are present in the basement Transformer Room located near the main entrance. These batteries are in poor condition with visible deposits on the terminals. Additionally, the concrete floor of the room is heavily rust stained and appears to have been previously flooded. No floor drains visible. Recommend proper decommissioning of, and proper disposal of, batteries. Recommend testing to determine if concrete floor has been contaminated with acid from the batteries or releases of chemicals from the HazMat storage cabinets.
5. Science sink traps may contain hazardous materials. If they are to be removed, recommend proper disposal of traps and contents.
6. Septic system is reportedly in use. Former septic system is reported to have been excavated in baseball field area and replaced (in 1990s) with the existing system that is located in football field. Any existing septic systems (in use or abandoned) may contain hazardous materials from disposal of chemicals down science, art, industrial arts, and maintenance sinks. Two settling tanks are reported to be located at the rear of the school near the maintenance building. One or more separate septic tanks or drywells may be present for hazardous materials disposal; however, no specific evidence of this was found during initial inspection. Recommend determining history and location of septic systems and settling tanks. Recommend testing sediment in settling tanks and/or drywells for hazardous materials.
7. Minor amounts of gasoline and vehicle maintenance fluids are stored with grounds maintenance equipment in a detached 4-bay garage with concrete floor. Current storage appears appropriate. Recommend proper disposal of hazardous materials, if necessary.
8. Chimney stack ash and/or bricks may require disposal as hazardous materials. Recommend testing ash and bricks, if disposal is required.
9. Grease traps are reported to be present in Kitchen. Reportedly cleaned out periodically. Recommend proper disposal if removal is to be undertaken.
10. Elevator installed in 1990s. No obvious concerns with respect to hazardous materials visible in first floor mechanical room. Water stains present on ceiling. No recommendations with respect to hazardous materials.
11. Switches associated with the boiler are reported to be pneumatic (non-mercury-containing). No recommendations.
12. Light fixtures and ballasts have been replaced recently throughout the school according to School Maintenance. Therefore, no PCB ballasts are present.

13. Active kiln in Art Room is vented to outside and does not appear to be a concern.
No recommendations.

The aforementioned information represents ATC's preliminary site investigation work relating to the feasibility study. As noted, additional sampling and investigation may be required in some instances to further determine the extent of the remediation activities required.

If you have any questions regarding this information, please feel free to call me directly at (413) 525-1198.

Sincerely,

ATC Associates Inc.

Derrick Wissman
Senior Project Manager