July 6, 2007

REPORT: Full Building Survey

TO: Linda McCracken-Hunt, Project Development, 100 Shops Building
Fay Thompson, Department of Environmental Health and Safety, Director
Tim Nelson, Facilities Management's Asbestos Coordinator, 25 Shops

FROM: Dave Klaustermeier, Asbestos Group, Environmental Health and Safety, Suite 153
U-Tech East Building, 2331 University Ave. S.E., Minneapolis, MN 55414

SUBJECT: Asbestos Material Survey - Peters Hall
EH&S Project No: 372-94-110
Client Project No: for database

Scope of Work: A full building asbestos material survey was conducted September 26, 1994 through October 21, 1994. The purpose of the survey was to identify asbestos-containing materials (ACM) as defined by the Environmental Protection Agency (EPA). Any material that is greater than 1% asbestos is considered to be ACM. The intent of the survey was to identify both friable and nonfriable suspect ACM, identify nonfriable ACM that may become friable under demolition or renovation conditions, and to provide approximate cost estimates for the removal of identified ACM prior to renovation of Peters Hall.

Project Description: One hundred forty-five (145) bulk samples of suspect ACM were collected on-site and one hundred eleven (111) were analyzed via polarized light microscopy (PLM) by Milan Asbestos Laboratory for asbestos content. Results of analyses are listed in Appendix I of this report. Appendix I is formatted to provide a room by room inventory of suspect ACM, the asbestos content of each material listed, and friability. An explanation of the tables and abbreviations used in the tables is included with Appendix I. Appendix II is a room by room listing of only those suspect materials that tested >1% asbestos. Minnesota Department of Health (MDH) Asbestos Rules regulate only friable ACM (material may be reduced to powder or dust under hand pressure) while the EPA regulates ACM that may become friable under demolition or renovation conditions.

The following friable or potentially friable materials tested positive as ACM:

- <4" white fibrous pipe insulation (PI) (1)
- <4" pipe fitting insulation (PFI) on white fibrous (2)
- <4" aircell PI and associated PFI (3&4)
- <4" felt w/tar PI (5)
- <4" felt w/tar PFI (6)
- <4" fibrous PFI on fiberglass (FG) w/tar(8)
- <4" fibrous PFI on fiberglass (9)
• 4”-8” white fibrous PI and associated PFI (10&11)
• 9”-14” white fibrous PI and associated PFI (19&20)
• white fibrous tank insulation (22)
• 9”x9” black w/cream streaks FT (31)
• 9”x9” grey w/white flecks FT (32)
• 9”x9” cream w/brown mottling FT (33)
• 9”x9” w/white & aqua streaks FT (32)
• 9”x9” cream w/brown mottling FT (33)
• 12”x12” beige w/white & aqua streaks FT (41)
• 12”x12” black w/white streaks FT (43)
• 4”-8” fibrous PFI on cork w/tar (64)
• transite (71)
• 4”-8” fibrous PFI on white fibrous w/tar (73)
• pipe insulation debris (74)

The following suspect materials tested none detected (ND) as ACM:

• <4” fiberglass with tar PI (7)
• 4”-8” felt w/tar PI (14)
• ceiling plaster (24)
• wall plaster (25)
• red brick mortar (26)
• clay tile mortar (27)
• concrete block mortar (28)
• baseboard adhesive (30)
• 12”x12” black w/white streaks FT (40)
• 12”x12” beige w/white & aqua streaks FT (42)
• 12”x12” white pegboard ceiling tile (51)
• 12”x12” white fissure ceiling tile (52)
• 2’x2’ fissure pinhole ceiling tile (54)
• 12”x12” pegboard ceiling tile (53)
• 2’x2’ fissure pinhole ceiling tile (54)
• floor covering (62)
• cork w/tar PI (63)
• fiberglass duct insulation (70)
• <4” white fibrous w/tar PI (72)
• pink pipe wrap (76)
• pink fibrous pipe insulation (77)
  • white fibrous fittings on new fiberglass (79)
  • <4” fiberglass pipe insulation (81)

The following nonfriable with low potential to become friable materials tested positive as ACM:

• floor tile adhesive (32.5, 33.5, 41.5, )
• galbestos (61)
• black lab top (66)
• black sink undercoat (67)
• black caulking (80)

The following friable or potentially friable materials tested as less than one percent (<1%) ACM.
• sheetrock & taping compound (29)
• cork w/tar ceiling (69)

The following non-friable with low potential to become friable material tested as <1% ACM.

• floor tile adhesive (31.5)

The following non-friable with low potential to become friable materials tested none detected (ND) as ACM:

• floor tile adhesive (40.5, 43.5)
• ceiling tile adhesive (51.5, 52.5)
• canvass vibration joint (65)
• black lab sink (68)
• freezer gasket (78)

For room locations of above noted materials, refer to Appendices. Sample numbers of the above materials are located in the parenthesis following the sample descriptions.

Observations and Recommendations:

1. Department of Environmental Health & Safety (DEHS)
   Please refer to condition assessments for specific damaged areas. In general, materials were found to be in good to excellent shape and do not pose significant health concerns to the building occupants.

2. Facilities Management;
   In rooms 101 A and B carpeting is covering the asbestos containing floor tile. This should be noted in case the carpeting is removed during any proposed renovation project. If the floor tile comes up with the carpet, the carpet should then be removed by the Facilities Management Asbestos Abatement Unit.

   Debris from asbestos containing pipe insulation was discovered in Room 112 (men's bathroom) wall hatch and Room 220 wall hatch. Following a clean-up of the visible debris, it is recommended that either the area be sprayed with a penetrating encapsulant or, in the case of demolition, the area be wetted and locked down with encapsulant. Contact Facilities Management's Asbestos Coordinator Tim Nelson if these remediation techniques wish to be examined further.

3. General;
   Due to limited access points in the ceilings and walls, some pipe chases and interstitial spaces were completely inaccessible or only slightly visible. As a result, the quantities listed reflect the visibility available at the time of the survey.

   Rooms 6A, 10J, 112A, and 220A were inaccessible at the time of the survey.

   The following materials tested as less than one percent asbestos content.

• sheetrock and taping compound
• floor tile adhesive
• cork w/tar ceiling

• floor tile adhesive (40.5, 43.5)
• ceiling tile adhesive (51.5, 52.5)
• canvass vibration joint (65)
• black lab sink (68)
• freezer gasket (78)
The current Occupational Safety and Health Administration definition of a non-regulated asbestos material is anything that contains less than one percent asbestos by area.

Although no roofing sampling was done, complete roof sampling is recommended at a time when a qualified roofing contractor is on-site to patch core sample holes in roofing.

**Cost Information:** The approximate cost for the removal of all ACM is itemized below. These figures are based on the assumption that all friable and potentially friable ACM are going to be removed. For project specific removal costs, contact this office with your project requirements and unit costs can be calculated for the impacted areas.

<table>
<thead>
<tr>
<th>MATERIAL TYPE</th>
<th>LOW RANGE</th>
<th>HIGH RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• thermal system insulation</td>
<td>98,771</td>
<td>128,236</td>
</tr>
<tr>
<td>• floor tile</td>
<td>17,252</td>
<td>34,504</td>
</tr>
<tr>
<td>• floor tile &amp; adhesive</td>
<td>3,150</td>
<td>6,300</td>
</tr>
<tr>
<td>• galbestos</td>
<td>630</td>
<td>1260</td>
</tr>
<tr>
<td>• black lab top</td>
<td>1,859</td>
<td>2,717</td>
</tr>
<tr>
<td>• black sink undercoat</td>
<td>75</td>
<td>148</td>
</tr>
<tr>
<td>• transite</td>
<td>535</td>
<td>803</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>122,272</strong></td>
<td><strong>173,968</strong></td>
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All ACM removal must be performed by a Minnesota licensed asbestos abatement contractor. All asbestos removal shall be performed within the specified procedures as outlined in the University of Minnesota Technical Specification for Asbestos Abatement. Please note that removal costs are highly variable and dependent on such factors as contractor availability, accessibility of work areas and site specific work plans.

Air monitoring is required for many asbestos-related projects. Environmental Health and Safety (EH&S) is available to provide this service. The estimated cost for EH&S to complete air monitoring requirements for specific projects will be made available upon request. The cost of air monitoring is a function of contractor on-site days and may vary dependent upon project specific scope of work. EH&S will provide labor, equipment and project oversight as necessary. Project management and contract administration will be provided by the Facilities Management Project Development Group.

EH&S also recommends that throughout the general renovation activities associated with this building, precautions and work practices should be implemented to minimize nuisance dust levels. Dust suppression techniques (misting the air with water and keeping materials wet) should be required of the general contractor.

If there is any further information required, or other questions arise regarding this request, please contact Dave Klaustermeier at 627-4887.

Written By: