REPORT: Full Building Survey

TO:       Bill Chose, Facilities Supervisor, Zone 1, Room 202, Facilities Management Building
FROM:    John Allen, Asbestos Group, Environmental Health and Safety, W140 Boynton Health Services, 410 Church St. S.E., Minneapolis, MN 55455
SUBJECT:    Asbestos Material Survey - Soils Building
            EH&S Project No:  382-96-087
            Client Project No:  for Data Base

Scope of Work: A full building asbestos material survey was conducted on August 15 through August 23, 1996. 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, to 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 the Soils Building.

Project Description: Bulk samples of suspect ACM were collected on-site and analyzed via polarized light microscopy (PLM) 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 and associated pipe fitting insulation
- <4" felt with tar pipe insulation and associated pipe fitting insulation
- <4" fibrous pipe fitting insulation on fiberglass
- 4"-8" white fibrous pipe insulation and associated pipe fitting insulation
- 4"-8" felt with tar pipe insulation and associated pipe fitting insulation
- 4"-8" cork with tar pipe insulation and associated pipe fitting insulation
- 9"-14" white fibrous pipe insulation and associated pipe fitting insulation
- white fibrous duct insulation
- white fibrous tank insulation
- fiberglass with tar duct insulation
- 9"x9" floor tile, grey with black and white
- 9"x9" floor tile, white with beige
- 2'x2' ceiling tile, pinhole worm/crater
- transite
The following suspect materials tested none detected (ND) as ACM:

- textured plaster
- ceiling plaster
- wall plaster
- clay tile mortar
- red brick mortar
- concrete block mortar
- sheetrock and taping compound
- baseboard adhesive
- 12"x12" ceiling tile, random hole
- 12"x12" ceiling tile, rugged pinhole
- 12"x12" ceiling tile, pinhole/nailhole
- 2'x2' ceiling tile, pinhole worm
- 2'x2' ceiling tile, pinhole fissure
- 2'x2' ceiling tile, pinhole crater
- 12"x12" floor tile, white with brown
- 12"x12" floor tile, beige with brown
- 12"x12" floor tile, grey with tan
- fiberglass wall
- pebbled linoleum
- canvass vibration joint
- sink undercoating
- ceiling tile adhesive

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

- floor tile adhesive
- galbestos
- black lab top

The following nonfriable with low potential to become friable materials tested less than 1% asbestos:

- <4" fiberglass pipe insulation
- 12"x12" floor tile, grey with black and white

For room locations of above noted materials, refer to Appendices.

**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.

2. Facilities Management;
   The quantities listed reflect the visibility and accessibility at the time of the survey. Actual quantities must be verified by contracting entities.

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

In the Appendices, material descriptions followed by a date refer to samples referenced from previous surveys conducted by Delta Environmental Consultants or by the Department of Environmental Health & Safety. The date refers to the original sampling date.

Samples taken of the fibrous fittings on <4" fiberglass lines produced mixed results. As a result all of these materials are listed in the Appendices as being asbestos containing. Project specific sampling would be recommended to minimize abatement costs.

All 9"x9" floor tiles were listed as damaged in the tables. It was noted during the survey that the wax coating on these tiles had worn to the point that surface abrasion has occurred.

Although no roof 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.

Due to the difficulty associated with identifying or sampling, fire doors and fire hoses were not included in the scope of the survey. Please note that these items frequently contain asbestos.

**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>$147,924</td>
<td>$192,371</td>
</tr>
<tr>
<td>• floor tile &amp; adhesive</td>
<td>42,048</td>
<td>84,096</td>
</tr>
<tr>
<td>• ceiling tile</td>
<td>195</td>
<td>390</td>
</tr>
<tr>
<td>• miscellaneous</td>
<td>24,168</td>
<td>44,951</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$214,335</td>
<td>$321,808</td>
</tr>
</tbody>
</table>

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 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
John Allen at 626-2199.

Written By: John F. Allen
Reviewed By: Roger L. Jeremiah

Environmental Health & Safety
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Asbestos Group Senior Safety Technician Asbestos Group Manager

cc: Tim Nelson
     John Sundsmo