November 14, 1996

REPORT: Full Building Survey

TO: Fred Clayton, Facilities Project Coordinator, Zone 1-St. Paul
    Tim Nelson, Facilities Management Asbestos Coordinator
    Fay Thompson, Department of Environmental Health and Safety, Director

FROM: Patrick Leahy, Asbestos Group, Environmental Health and Safety, W-140 Boynton,
      410 Church St. S.E., Minneapolis, MN 55455

SUBJECT: Asbestos Material Survey - Hodson Hall
      EH&S Project No: 393-96-108
      Client Project No: 393-95-1945

Scope of Work: A full building asbestos material survey was conducted October 4 through October 31, 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, 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 Hodson Hall.

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" fibrous pipe fitting insulation on fiberglass with tar
- <4" fibrous pipe fitting insulation on fiberglass
- 4"-8" white fibrous pipe insulation and associated pipe fitting insulation
- 4"-8" fibrous pipe fitting insulation on fiberglass with tar
- 4"-8" fibrous pipe fitting insulation on fiberglass
- 9"-14" white fibrous pipe insulation and associated pipe fitting insulation
- white fibrous tank insulation
- transite fume hood
- 9"x9" floor tile, white with brown
- 9"x9" floor tile, gray with white and dark gray
- 12"x12" floor tile, white with beige
The following suspect materials tested none detected (ND) as ACM:

- <4" pink fibrous pipe insulation and associated pipe fitting insulation
- <4" fiberglass pipe insulation
- <4" fiberglass with tar pipe insulation
- 4”-8” pink fibrous pipe insulation and associated pipe fittings
- 4”-8” fiberglass pipe insulation
- 4”-8” fiberglass with tar pipe insulation
- 4”-8” white kaylo pipe insulation
- pink fibrous tank insulation
- 12"x12" ceiling tile, splined narrow fissures
- 2’x2’ ceiling tile, fissures and holes
- 2’x2’ ceiling tile, pocks and holes
- 2’x4’ ceiling tile, fissures and holes
- 2’x4’ ceiling tile, deep fissures
- 12’x12’ floor tile, white with gray and adhesive
- 12’x12’ floor tile, white with caramel and adhesive
- 12’x12’ floor tile, white with brown mottling and adhesive
- 12’x12’ floor tile, beige with white and brown and adhesive
- concrete block mortar
- red brick mortar
- fiberglass with tar duct insulation
- sheetrock and taping compound
- canvass vibration joint
- mastic on neoprene lines
- gray duct putty
- tar layered tank insulation
- baseboard adhesive

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

- floor tile adhesive
- pipe putty
- galbestos ducts
- black lab tops

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

- wall and ceiling plaster
- 12’x12’ ceiling tile, splined fissure and hole

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.

In some rooms throughout the building, carpeting is covering the asbestos containing floor tile. This should be noted in case the carpeting is removed during the 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 or a Minnesota Licensed asbestos abatement contractor.

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.

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.

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>
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<tbody>
<tr>
<td>• thermal system insulation</td>
<td>$184,853</td>
<td>$237,450</td>
</tr>
<tr>
<td>• misc. materials</td>
<td>$34,964</td>
<td>$53,716</td>
</tr>
<tr>
<td>• floor tile &amp; adhesive</td>
<td>16,954</td>
<td>33,908</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$236,771</td>
<td>$325,074</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 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 Patrick Leahy at 626-2331.

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