December 20, 1993

REPORT:  Full Building Survey

TO:  Harvey Jaeger, Project Development, 100 Shops, 319 15th Ave. S.E., Minneapolis, MN, 55414

FROM:  John Allen, Asbestos Group, Environmental Health and Safety, B-7 U-Tech Building, 1313 5th St. S.E., Minneapolis, MN 55414

SUBJECT: Asbestos Material Survey - Territorial Hall  
EH&S Project No:  105-93-147  
Client Project No:  105-92-1531

Scope of Work:  A full building asbestos material survey was conducted on November 19 through December 17, 1993. 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 Territorial Hall.

Project Description:  Seventy-three (73) bulk samples of suspect ACM were collected on-site and fifty-seven (57) 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
- white fibrous duct insulation
- 9"x9" floor tile, tan with brown and white
• 9"x9" floor tile, salmon with red
• 9"x9" floor tile, tan with black
• 9"x9" floor tile, white with light grey
• transite brake pads

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

• <4" fiberglass with tar pipe insulation
• 4"-8" fiberglass with tar pipe insulation
• ceiling plaster
• wall plaster
• 12"x12" ceiling tile, irregular hole
• 12"x12" ceiling tile, small hole
• 12"x12" ceiling/wall tile, fissured
• 2'x2' ceiling tile, crater pinhole
• 12"x12" floor tile, white with salmon and grey
• 12"x12" floor tile, beige with brown and tan
• baseboard adhesive, brown
• sheetrock and taping compound
• concrete block mortar
• clay tile mortar
• red clay tile mortar
• red brick mortar
• ceiling tile adhesive

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

• floor tile adhesive
• black mastic

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

**Observations and Recommendations:** The analytical results of certain materials were referenced to samples taken during a January 7, 1993 survey conducted by the Department of Environmental Health & Safety. In the Appendices, the sample numbers for these materials are preceded by the letter R.

In the student lounges and the hallways, 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.

Some damaged ACM pipe fittings on fiberglass lines were found in the following resident storage areas (the old linen closets): Rooms 117, 185, 285, 315 and 453. It is recommended the fittings in these areas be repaired by the Facilities Management Asbestos Abatement Unit.

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.

Room 213 P-1 was inaccessible at the time of the survey (a rest room pipe chase).

**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>$172,745</td>
<td>$199,211</td>
</tr>
<tr>
<td>• floor tile &amp; adhesive</td>
<td>147,848</td>
<td>295,696</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$320,593</td>
<td>$494,907</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 John Allen at 627-4861.

Written By:

John F. Allen
Environmental Health & Safety
Asbestos Group Safety Technician

Reviewed By:

Roger L. Jeremiah
Environmental Health & Safety
Asbestos Group Manager

cc: Tim Nelson
Harold Hall
John Sundsmo