April 23, 1996

REPORT: Limited Building Survey

TO: Bob Kretchmer, Project Support Supervisor, Comstock Hall - East, Room G20 B, Minneapolis, MN 55455

FROM: Greg Archer, Asbestos Group, Environmental Health and Safety, W140 Boynton Health Services, 410 Church St. S.E., Minneapolis, MN 55455

SUBJECT: Asbestos Material Survey - Sanford Hall
EH&S Project No: 028-96-026
Client Project No: N/A

Scope of Work: A limited building asbestos material survey was conducted on March 11 through March 27, 1996. The purpose of the survey was to identify asbestos-containing materials (ACM) as defined by the Environmental Protection Agency (EPA) in the Reno Section of Sanford Hall. The Tower Section had been previously surveyed. Please refer to the report dated June 29, 1995 (EHS Project # 056-95-056.) 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 Sanford Hall.

Project Description: One hundred and ten (110) bulk samples of suspect ACM were 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" aircell pipe insulation and associated pipe fitting insulation**
- **<4" fibrous pipe fitting insulation felt with tar**
- **<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**
- **9"-14" white fibrous pipe insulation and associated pipe fitting insulation**
- **white fibrous tank insulation**
- **9"x9" floor tile, beige with brown**
- **12"x12" floor tile, beige with brown and tan**
- **12"x12" ceiling tile, pinhole/nail**

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

- <4" fiberglass with tar pipe insulation
- <4" fiberglass pipe insulation
- <4" felt with tar pipe insulation
- 4"-8" fiberglass pipe insulation and associated pipe fitting insulation
- foam pipe insulation
- fiberglass duct insulation

- ceiling plaster
- wall plaster
- brown pipe putty
- clay tile mortar
- red brick mortar
- canvass vibration joint
- baseboard adhesive
- concrete block mortar
- sheetrock and taping compound
- 6"x6" floor tile, ceramic
- 12"x12" floor tile, beige with brown and cream streaks
- 12"x12" floor tile, grey mottling (installed 1995)
- 12"x12" floor tile, white with grey and charcoal
- 12"x12" floor tile, grey with black and white streaks
- 12"x12" floor tile, grey with cream and tan flecks
- 12"x12" floor tile, peach
- 12"x12" floor tile, aqua
- 12"x12" ceiling tile, pegboard
- 2'x2' ceiling tile, stringboard
- 2'x2' ceiling tile, chicken scratch
- 2'x2' ceiling tile, sheetrock
- 2'x4' ceiling tile, pin/crater/wormhole
- sink undercoating
- fiberglass batting
- roof shingles and tar paper (installed 1995)
- internal duct insulation
- floor board and tar paper
- pyrobar
- white wall mastic

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

- **floor tile adhesive**
- **ceiling tile adhesive**
- **tar paper**
- **carpet mastic (see note in observations and recommendations)**

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 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 or a Minnesota Licensed asbestos abatement contractor.

Mixed results were recorded for carpet adhesive. Therefore, carpet mastic is listed as positive in the tables. In most areas, the carpet adhesive was superimposed upon existing floor tile mastic. Since it was difficult to separate the two materials during sampling, they will both be listed as carpet mastic in the Appendices. Project specific sampling is recommended before any disposal of this material.

Mixed results were also recorded for <4" pipe fitting insulation on fiberglass line. Therefore, this material is listed as positive in the Appendices. Project specific sampling is recommended to reduce abatement costs.

According to building maintenance personnel, plaster walls in the basement Hall B4 to B14 contained asbestos. A historical search of data confirmed this fact. Delta Environmental sampled this material on June 25, 1990. Environmental Health and Safety collected 4 wall samples from this area and three wall samples from Hall B59 to B71. These samples were all analyzed as none detected for asbestos content. Other plaster samples collected throughout the building were none detected for asbestos. Therefore, all plaster for the "Reno" section of Sanford Hall is listed as negative in the Appendices.

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. According to building mechanical prints, perimeter radiation lines exist in most rooms behind the columns and above the ceilings. As a result, the quantities listed reflect the visibility available at the time of the survey.

In room B12/B14, it appears as if some asbestos abatement has been done and the thermal insulation was replaced with non-asbestos containing materials. However, all materials in this area are listed as positive. We suggest area specific sampling for any materials to be considered non-asbestos containing.

The elevator shaft was not surveyed.

No roof sampling was done because the roof was replaced in 1995.

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.

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.

Rooms B16, B50, B74, B63, 273(pipechase A), and 373(pipechase A) were inaccessible at the time of the survey. Also, many ceiling hatches were painted shut making them inaccessible as well. Please refer to the Appendices for specific areas.

The Trash Rooms located in hallways were included with the hallway material information.

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Mixed results were also recorded for <4" pipe fitting insulation on fiberglass line. Therefore, this material is listed as positive in the Appendices. Project specific sampling is recommended to reduce abatement costs..

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.

MATERIAL TYPE	LOW RANGE	HIGH RANGE
• thermal system insulation	**$190,221**	**$242,226**

• floor tile & adhesive	**9,596**	**19,192**
• ceiling tile & adhesive	**1,980**	**3,960**
• carpet mastic	**42,879**	**89,758**
• misc.	**300**	**400**
TOTAL	**$244,976**	**$355,536**

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 Greg Archer at 626-2199.

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