

April 13, 1995

REPORT: Revised Full Building Survey

TO: Tim Nelson, Facilities Management Asbestos Coordinator  
Harvey Jaeger, Project Development, 100 Shops Building

FROM: John Allen, Asbestos Group, Environmental Health and Safety, B-7 U-Tech Building,  
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SUBJECT: Asbestos Material Survey - Northrop Auditorium  
EH&S Project No: 053-93-117  
Client Project No: 053-92-1275

**Scope of Work:** A full building asbestos material survey was conducted on July 22 through October 20, 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 scope 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 Northrop Auditorium.

**Project Description:** One hundred seventy-three (173) bulk samples of suspect ACM were collected on-site and one hundred thirty-three (133) analyzed via polarized light microscopy (PLM) by Twin City Testing 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" felt with tar 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" aircell pipe insulation and associated pipe fitting insulation
- 4"-8" felt with tar pipe insulation and associated pipe fitting insulation
- 4"-8" fibrous pipe fitting insulation on styrofoam with tar
- 4"-8" fibrous pipe fitting insulation on cork with tar
- 9"-14" white fibrous pipe insulation and associated pipe fitting insulation
- white fibrous tank insulation - large tank (Room 31)
- canvass wrap with tar on fiberglass duct
- 2'x4' ceiling tile, fissured pinhole
- 9"x9" floor tile, black with white
- 9"x9" floor tile, brown and tan
- 9"x9" floor tile, olive grey with white
- 9"x9" floor tile, grey with black and cream
- 9"x9" floor tile, white with green
- 9"x9" floor tile, olive with white and grey
- 9"x9" floor tile, olive with tan
- 9"x9" floor tile, brown with red and orange

- **9"x9" floor tile, olive with cream and black**
- **9"x9" floor tile, brown with white and orange**
- **9"x9" floor tile, pea green with black and white**
- **9"x9" floor tile, white with black and grey**
- **12"x12" floor tile, light grey with black and white**
- **12"x12" floor tile, olive with black and white**
- **12"x12" floor tile, white with tan**
- **12"x12" floor tile, charcoal with tan**
- **white fibrous backing on metal ceiling tile**

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

- <4" fiberglass with tar pipe insulation
- <4" fibrous pipe fitting insulation on styrofoam
- 4"-8" fibrous pipe fitting insulation on fiberglass
- 4"-8" cork with tar pipe insulation
- white fibrous tank insulation - small tank (Room 31 F)
- canvass wrap on fiberglass duct
- textured ceiling plaster
- smooth ceiling plaster
- textured wall plaster
- smooth wall plaster
- fiberboard
- 12"x12" ceiling tile, pegboard
- 12"x12" ceiling tile, irregular hole
- 12"x12" ceiling tile, fissured
- 2'x2' ceiling tile, pinhole
- 2'x4' ceiling tile, crater pinhole
- 9"x9" floor tile, light grey with black and white
- 9"x9" floor tile, grey with dark grey and cream
- 9"x9" floor tile, beige with black and cream
- 9"x9" floor tile, grey and cream
- 9"x9" floor tile, brown and cream
- 9"x9" floor tile, tan with brown and white
- 9"x9" floor tile, grey with black and white
- 12"x12" floor tile, light grey with charcoal
- 12"x12" floor tile, light grey with white and grey
- 12"x12" floor tile, black with orange
- 12"x12" floor tile, marble
- 12"x12" floor tile, black with white
- baseboard adhesive, brown
- concrete block mortar
- yellow brick mortar
- red clay tile mortar
- canvass vibration joint
- tar paper on concrete
- ceiling tile adhesive

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

- **<4" styrofoam with tar pipe insulation**
- **4"-8" styrofoam with tar pipe insulation**
- **floor tile adhesive**
- **grey putty patching**

The following potentially friable materials tested less than 1% for asbestos:

- sheetrock and taping compound

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

**Observations and Recommendations:** According to updated EPA rules (December 3, 1993, copy attached), separate components of a sheetrock wall (wallboard and taping compound) should now be analyzed as a composite sample. By re-analyzing the sheetrock as a complete wall system, the material tested as <1% for asbestos content. This change has been reflected in the Appendices. Although this material is no longer regulated as an asbestos-containing material, it is recommended that when impacted during renovation, remodeling or other disturbance, that dust suppression (such as wet methods and local exhaust ventilation) be employed.

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

In the Appendices, reference sample numbers with the preface **R** refer to samples referenced from previous surveys conducted by Delta Environmental Consultants or by the Department of Environmental Health & Safety. The original sample date is given following the material description.

Asbestos containing debris from damaged pipe insulation was found above the plaster ceiling of the North Hallway in the Basement Level. Before impacting the ceiling, the area should be cleaned and the plaster sprayed with an encapsulant. Contact Facilities Management's Asbestos Coordinator Tim Nelson if these remediation techniques wish to be examined further.

Samples taken of fibrous fittings on fiberglass with tar lines produced mixed results. Only samples taken in the Basement and Sub-basement Levels were analyzed as asbestos containing. The fittings tested as non-asbestos containing are identified in Appendix I with the reference sample number 8.1. However, any fittings on fiberglass with tar discovered in areas inaccessible at the time of the survey should be considered asbestos containing until testing proves otherwise.

In Rooms 4 and 4A an inaccessible metal pan ceiling was observed. These ceiling panels appear similar to the ceiling panels with an asbestos containing white fibrous backing stored in Room 330. Prior to any work impacting the metal pan ceilings in Rooms 4 or 4 A, access to the ceiling panels should be made available in order to check ceiling backing. The metal pan ceiling panels stored in Room 330 should be removed using proper O&M procedures and the area cleaned of any debris.

Ceiling plaster and wall plaster results were referenced from samples taken during previous surveys and analyzed as none detected for asbestos. However, no ceiling plaster samples had been taken in the Lobby or the Auditorium due to the height of the ceilings in those areas. If the plaster ceilings in the Lobby or Auditorium are to be impacted, it is recommended that samples from these areas be tested for asbestos content.

The following areas were inaccessible at the time of the survey: Rooms 7 A, 8 A, 11, 31 C&D, 33 C, 40, and 42 on the Basement Level and Room 116 on the First Floor. In addition, an inaccessible floor hatch was found in Room 4 in the Basement. Rooms 224, 224 A and 224 B were surveyed, however, no samples of the floor tile could be taken due to an access problem. Hence, the floor tile in those rooms was assumed to be asbestos containing.

**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.

<u>MATERIAL TYPE</u>	<u>LOW RANGE</u>	<u>HIGH RANGE</u>
• thermal system insulation	<b>\$235,330</b>	<b>\$305,855</b>
• floor tile & adhesive	<b>18,494</b>	<b>36,988</b>
• ceiling tile	<b>1,476</b>	<b>2,952</b>
<b>TOTAL</b>	<b>\$255,300</b>	<b>\$345,795</b>

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.

Environmental Health and Safety (EH&S) recommends that air quality monitoring be conducted during any asbestos related project. 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.

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