

April 13, 1995

REPORT: Revised Full Building Survey

TO: Linda McCracken-Hunt, Project Development, 100 Shops Building  
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Fay Thompson, Department of Environmental Health and Safety, Director

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SUBJECT: Asbestos Material Survey - Morrill Hall  
EH&S Project No: 046-93-106  
Client Project No: For Data Base

**Scope of Work:** A full building asbestos material survey was conducted on July 9 and continued through September 9, 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, 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 or demolition of Morrill Hall.

**Project Description:** Bulk samples of suspect ACM were collected on-site and analyzed via polarized light microscopy (PLM) by Nova Environmental and Twin Cities 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(PI) and associated pipe fitting insulation(PFI)
- <4" aircell PI and associated PFI
- <4" felt w/ tarPI and associated PFI
- <4" fibrous PFI on fiberglass (See Observations and Recommendations)
- 4"-8" white fibrous PI and associated PFI
- 4"-8" aircell PI and associated PFI
- white fibrous tanks, Room B20 and Room B20A
- 2'x2' nail hole ceiling tile (CT)
- 9"x9" off white w/ green floor tile (FT)
- 9"x9" beige w/ cream and brown FT
- 9"x9" pearl grey w/ cream FT
- 9"x9" grey w/ black FT
- 9"x9" tan w/ brown and cream FT
- 9"x9" grey w/ black and white FT
- 9"x9" light brown w/ dark brown FT
- 9"x9" white w/ turquoise FT
- 9"x9" white w/ black and grey FT
- 9"x9" dark grey w/ white FT
- 9"x9" brown w/ white and red FT
- 9"x9" brown w/ orange and white FT
- 12"x12" off-white w/ brown FT

- **12"x12" cream w/ brown and tan FT**
- **12"x12" beige w/ brown and cream FT**
- **12"x12" white w/ black and grey FT**
- **spray-on fireproofing**
- **paper wrap**
- **transite panel**
- **radiator paper**

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

- 4"-8" fibrous PFI on fiberglass
- white fibrous tank, Room 560
- FG duct insulation
- acoustical spray-on
- 12"x12" irregular CT and associated tar
- 12"x12" crater CT and associated mastic
- 12"x12" textured CT
- 12"x12" fissured pinhole CT
- 12"x12" crater pinhole CT
- 12"x12" pinhole CT and associated mastic
- 12"x12" checkerboard CT and associated mastic
- 12"x12" fissured CT
- 12"x12" pencil hole CT and associated mastic
- 12"x12" pegboard CT
- 2'x2' crater CT
- 2'x2' textured CT
- 2'x2' fissured pinhole CT
- 2'x2' pinhole CT
- 2'x4' fissured pinhole CT
- 9"x9" chocolate brown FT and associated mastic
- 12"x12" fudge swirl FT
- 12"x12" olive w/ charcoal FT
- 12"x12" cream w/ brown and grey FT
- 12"x12" green w/ cream and grey FT
- 12"x12" brown w/ cream and dark brown FT
- 12"x12" olive w/ white and grey FT
- 12"x12" beige w/ cream FT
- brown linoleum
- green w/ black linoleum
- baseboard adhesive, brown
- red clay tile mortar
- red brick mortar
- fiber board w/ tar paper
- canvas vibration joint
- wall plaster
- ceiling plaster

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

- **floor tile adhesive**
- **tar layer on cork PI**
- **ceiling tile adhesive**

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

- 9"x9" grey w/ cream and black FT
- 9"x9" antique white w/ brown FT

- sheetrock and taping compound

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

### **Observations and Recommendations to :**

#### 1. Department of Environmental Health and Safety (DEHS);

In general, the condition of asbestos-containing materials in occupied areas of the building was found to be good. The tables in Appendices I and II have listed areas in which minor damage was noted.

#### 2. Facilities Management;

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.

During the resampling for sheetrock, EHS noticed some spray-on fireproofing that was not identified in the original survey. This material tested positive. Approximately 48 square feet of spray-on is located in the west lobby of the basement's main hallway. Another 25 square feet can be found in Room B8.

An asbestos containing radiator paper was found in two places. This thin paper layer is sandwiched between the tin layers of the radiator backing. Please consult the room by room listing for specific areas. Due to the concealed nature of this material, caution should be used when working on any radiator backing in the building.

Mixed results were recorded for the <4" FG PFI. The tables in Appendices I and II have listed all <4" FG PFI as being ACM. According to building occupants though, a thermal retro-fit occurred primarily in office areas of the building. The mixed results would indicate that the pipe fitting insulation on the retro fitted areas are negative. Typically, the retro-fitted areas can be distinguished by the paper wrap on the fiberglass line. If discrepancies or questions arise regarding this, please contact our office for project specific clarification. As for the mechanical areas, closets, blind chases and inaccessible areas, all fittings on <4" fiberglass should be treated as positive, unless project specific testing proves otherwise.

Localized asbestos containing debris was found throughout both the North and South Crawl Spaces on the 5th floor. If renovation activities are scheduled to impact the plaster ceiling on the 4th floor under these areas, then a clean up of the debris would be necessary.

#### 3. General;

The following rooms were inaccessible at the time of the survey : S56, B22, B24, B25, B11.

Rooms 06A-F were included with Room 06. Rooms 170,A,B,C,D, 150A, 130C,F,G 160A,B,C, 100, 120,B,C, 140,B,C,D andE were included with the "open area" on the first floor.

The results of some thermal and miscellaneous materials were referenced from samples taken during various surveys conducted by Delta Environmental Consultants, Inc. In the Appendices, the sample numbers for these materials are preceded by the letter R. The sample date is also provided.

In several rooms throughout the building, carpeting is covering the asbestos containing floor tile. This should be noted in case the carpeting is removed during a renovation project. If the floor tile comes up with the carpet, the carpet should then be removed by the Facilities Management Asbestos Abatement Unit.

The Sub Basement Rooms S86-93 had a raised floor. The area underneath the floor could not be accessed. Floor tile may be present in this area.

A previous survey noted asbestos containing spray-on insulation in the center hall (N) to Telecommunications in the Basement Level. Due to secured access to this area, the presence of spray-on could not be confirmed. The scope of the survey stops at the access door.

In the "open area" of the first floor, ceiling tile adhesive is present under the acoustical spray-on and therefore inaccessible for sampling. This adhesive should be considered positive unless project specific sampling determines it to be negative.

According to construction notes for the first floor renovation, an asbestos containing mastic may have been installed on the interior duct lining. This material was not found during the survey. If duct demolition is scheduled to occur, please contact our office for an investigation.

It was noted that floor tiles have been removed from the majority of the third floor. If demolition or renovation of the concrete floor is scheduled to occur, a visual inspection of the proposed area will need to be conducted to ensure that positive floor tile or floor tile mastic will not be impacted. The presence of carpeting has made this determination inappropriate at the time of the survey.

The attic area on the 5th floor was visually inspected from the ceiling hatches. No suspect materials were noted. The entire attic could not be viewed from the hatches and was not entered because the structural integrity of the ceiling was in question.

Although no roof samples were taken, it is recommended that complete roof sampling occur at a time when a qualified roofing contractor is on site to patch core sample holes.

**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>\$157,726</b>	<b>\$203,004</b>
• transite panels	<b>210</b>	<b>315</b>
• ceiling tile	<b>66,174</b>	<b>195,108</b>
• floor tile & adhesive	<b>57,063</b>	<b>114,126</b>
<b>TOTAL</b>	<b>\$281,173</b>	<b>\$512,553</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.

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 any further information is required, or other questions arise regarding this request, please contact Greg Archer at 627-4861.

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