

November 18, 2002

REPORT: Full Building Survey

TO: Linda McCracken-Hunt, Project Development, 100 Shops Building
Fay Thompson, Department of Environmental Health and Safety, Director
Tim Nelson, Facilities Management's Asbestos Coordinator, 25 Shops

FROM: Dave Klaustermeier, Asbestos Group, Environmental Health and Safety, Suite 153 U-Tech
East Building, 2331 University Ave. S.E., Minneapolis, MN 55414

SUBJECT: Asbestos Material Survey - Tate Physics Building
EH&S Project No: 049-94-089
Client Project No: for database

Scope of Work: A full building asbestos material survey was conducted June 28, 1994 through August 25, 1994. 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 the above mentioned section of Tate Physics Building.

Project Description: Two hundred sixty four (264) bulk samples of suspect ACM were collected on-site and two hundred thirty six (236) were analyzed via polarized light microscopy (PLM) by Twin City Engineering and Environmental Health and Safety 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) (1)
- <4" pipe fitting insulation (PFI) on white fibrous (2)
- <4" aircell PI and associated PFI (3&4)
- <4" felt w/tar PI and associated PFI (5&6)
- <4" fibrous PFI on fiberglass (FG) w/tar(8)
- <4"fibrous PFI on FG (9)
- 4"-8" white fibrous PI and associated PFI (10&11)
- 4"-8 " aircell PI and associated PFI (12&13)
- 4"-8" fibrous PFI on FG/tar (17)
- 9"-14" white fibrous PI and associated PFI (19&20)
- <4" fibrous PFI on fibrous w/tar (84)
- 9"x9" cream w/brown streaks FT (31)
- 9"x9" beige w/white & salmon FT (32)
- 9"x9" cream w/grey & dark grey swirls FT (33)
- 9"x9" off white w/tan & white streaks FT (35)
- 9"x9" butterscotch w/white & brown waves FT (36)
- 9"x9" olive FT (37)
- 9"x9" black FT (38)

- 9"x9" grey w/black & cream streaks FT (39)
- 12"x12" dark grey w/white & black specks FT (41)
- 12"x12" white w/tan streaks FT (43)
- 12"x12" cream w/white & grey mottling FT (45)
- 12"x12" cream w/blue & tan specks FT (46)
- 12"x12" olive w/black & cream streaks FT (48)
- 12"x12" random nail hole ceiling tile (52)
- 12"x12" rough surface ceiling tile (53)
- transite (71)
- 9"x9" black w/white waves FT (74)
- 9"x9" grey w/ white & black waves FT (75)
- 9"x9" white w/grey & dark grey swirls FT (76)
- 9"x9" olive w/cream splashes FT (77)
- 9"x9" grey w/white & grey streaks FT (78)
- grey canvass duct insulation (85)
- 1"-8" cork PI w/tar (86)
- 12"x12" brown wood grain FT (88)
- 12"x12" white w/tan swirls FT (89)
- blue linoleum (93)
- 9"x9" white w/black streaks FT (96)
- 9"-14" aircell PI and associated PFI (103&104)

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

- <4" fiberglass with tar pipe insulation (7)
- 4"-8" FG w/tar PI (16)
- spray-on fireproofing (23)
- ceiling plaster (24)
- wall plaster (25)
- red brick mortar (26)
- clay tile mortar (27)
- sheetrock (29)
- baseboard adhesive (30)
- grey floor tile under carpet (34)
- 12"x12" grey w/navy & white FT (40)
- 12"x12" grey w/dark grey & white FT (42)
- 12"x12" white w/tan & beige streaks FT (44)
- 12"x12" cream w/tan mottling FT (47)
- 12"x12" pegboard ceiling tile (50)
- 12"x12" circle pinhole ceiling tile (51)
- 2'x2' rough acoustical ceiling tile (54)
- 2'x2' cratered pinhole ceiling tile (55)
- 2'x2' smooth sheetrock ceiling tile (56)
- 2'x4' cratered pinhole ceiling tile (58)
- 2"x4" fissured pinhole ceiling tile (59)
- lab sinks (62)
- concrete block mortar (64)
- plaster over-spray (63)
- troweled on plaster (69)
- <4" fibrous PI w/tar (79)
- brown flooring covering (80)
- black lab top (81)
- FG duct insulation w/tar (83)
- black foam w/tar (87)
- rust floor covering (95)
- <4" PFI on new fiberglass (101)

- 12"x12" white brick FT (105)
- 12"x12" white w/gold swirls FT (106)
- red floor covering (107)
- 12"x12" grey w/navy & white swirls FT (108)

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

- **floor tile adhesive (31.5, 32.5, 33.5, 35.5, 30.5, 40.5, 41.5, 43.5, 44.5, 46.5, 48.5)**
- **floor tile adhesive (76.5, 77.5, 78.5, 96.5)**
- **galbestos (61)**
- **black tar wrap (82)**

The following non-friable with low potential to become friable materials tested none detected (ND) as ACM:

- floor tile adhesive (34.5, 36.5, 37.5, 38.5, 42.5, 45.5, 47.5, 74.5, 75.5, 88.5, 89.5,)
- floor tile adhesive (90.5, 91.5, 105.5, 106.5, 108.5)
- ceiling tile adhesive (50.5, 51.5, 52.5, 53.5, 92.5)
- canvass vibration joint (65)
- tarpaper (70)
- blue pipe putty (72)
- maroon duct putty (73)

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. The tunnel area off of Room 19 in the sub-basement has a significant amount of damaged asbestos containing pipe insulation.

2. Facilities Management;

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.

Asbestos containing ceiling tiles were found in the following areas: Rooms 258, 368, 368A, 369, 370, 371, 373, 375, 376, 377, 378, 379, 381, 383, 384, 385A&B, 467, 468, 469, 470, 472, 475, 476, 479, 479A, 485, 485A, 485B, 485C, 485D, the SE Stairs, SW Stairs, 3rd Floor Hallway South and 4th Floor Hallway South. Proper Operation & Maintenance procedures should be followed whenever working on or above these ceiling tiles. The majority of ceiling tiles located on the ceiling hatches were very loose, but presently in good condition. It is recommended that Facilities Management remove the ceiling tiles located on the ceiling hatches to prevent the disturbance of these tiles when accessing above the plaster ceilings.

Samples taken from fibrous fittings on fiberglass lines produced mixed results. Since the fiberglass fitting in Rooms 347, 349, and 357 appeared to be installed fairly recently, they were sampled separately and were none detected for asbestos content. All the remaining fittings on fiberglass lines should be considered asbestos containing until testing proves otherwise.

Due to limited access points in the ceilings and walls, some pipe chases and interstitial spaces were completely inaccessible or only slightly visible. As a result, the quantities listed reflect the visibility available at the time of the survey.

At the time of the survey Rooms SB-46, SB-60B, 630, and 531 were inaccessible.

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
• wall transite	270	405
• duct insulation	19,200	31,200
• galbestos	712,960	25,920
• grey lab top	7,755	11,632
• linolium	288	576
• ceiling tile adhesive	34,614	69,228
• debris	800	925
• floor tile & adhesive	76,398	152,792
• thermal system insulation	132,198	220,147
TOTAL	\$284,843	\$512,825

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 Dave Klaustermeier at 627-4887.

Written By:

Joan Goar
Environmental Health & Safety
Asbestos Group Senior Technician

Dave Klaustermeier
Environmental Health & Safety
Asbestos Group Senior Technician

Reviewed By:

Roger L. Jeremiah
Environmental Health & Safety
Asbestos Group Manager

cc: John Sundsmo

