REPORT: Full Building Survey

TO: Tim Nelson, Facilities Management's Asbestos Coordinator, 400 Donhowe Building
Ben Ystenes, Manager, Zone 5, Facilities Management, 19 Scott Hall

FROM: Kelly Brown, Asbestos Group, Environmental Health and Safety, W-140 Boynton Health Service, 410 Church Street, S.E., Minneapolis, MN 55455

SUBJECT: Asbestos Material Survey - Economic Research Building
EH&S Project No: 117-96-068
Client Project No: for database

Scope of Work: A full building asbestos material survey was conducted on July 12, 1996 through July 18, 1996. The purpose of the survey was to identify asbestos-containing materials (ACM) as defined by the Environmental Protection Agency (EPA), the Occupational Health & Safety Administration (OSHA), and the Minnesota Department of Health (MDH). Any material that is greater than 1% asbestos is considered to be ACM. The intent of the survey was to identify both friable and non-friable suspect ACM, identify non-friable ACM that may become friable under demolition or renovation conditions, and to provide approximate cost estimates for the removal of identified ACM in Economic Research.

Project Description: Thirty-four (34) bulk samples of suspect ACM were collected on-site and twenty-eight (28) were analyzed via polarized light microscopy (PLM) by the University of Minnesota Department of Environmental Health and Safety's asbestos laboratory 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 in the building:

- <4" white fibrous pipe insulation (PI) (1)
- <4" pipe fitting insulation (PFI) on white fibrous line (2)
- <4" fibrous PFI on FG line (10)
- 4"-8" white fibrous PI (11)
- 4"-8" PFI on white fibrous line (12)
- 9"x9" floor tile, cream w/brown streaks (41)
- 2'x2' ceiling tile, pinhole wormhole (84)

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

- <4" fiberglass PI (9)
• fiberglass duct insulation (31)
• ceiling plaster (34)
• clay tile mortar (37)
• concrete block mortar (38)
• baseboard adhesive (40)

The following non-friable with low potential to become friable material tested positive as ACM:

• floor tile adhesive (41.5)

For room locations of above noted materials, refer to Appendices. Sample numbers of the above materials are located in the parenthesis following the sample descriptions.

Observations and Recommendations:

1.0 Department of Environmental Health & Safety (DEHS):

Please refer to condition assessments for specific damaged areas. In general, materials were found to be in good shape and do not pose significant health concerns to the building occupants.

The Economic Research Building consists of only two floors (2nd and 3rd floors).

The space above the ceiling was inaccessible in the following rooms: Room 200, Room 201, Room 209A, Room 300, and Room 301 (see Appendix I of the report). Thermal system insulation is assumed to be present in these areas based on pipes observed passing through the walls above the ceiling in rooms adjacent to these listed rooms.

2.0 Facilities Management:

Please refer to the floor plans included with this report for room numbers. The floor plans indicate the room numbers used in this survey.

All quantities in this survey are estimations and should not be considered exact measurements when used on abatement bids.

3.0 General:

Although no roofing 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, or prior to roof removal or demolition.

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>$21,251</td>
<td>$27,300</td>
</tr>
<tr>
<td>• floor coverings and adhesives</td>
<td>$7,762</td>
<td>$15,524</td>
</tr>
<tr>
<td>• ceiling tile</td>
<td>$11,643</td>
<td>$23,286</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$40,656</td>
<td>$66,110</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.

At the time of renovation and/or demolition, any areas where contained abatement would need to be performed and those areas not having been accessed during this survey should be entered and surveyed by certified personnel. In the case this may constitute an uncontrolled abatement procedure DEHS would suggest nine samples of surfacing materials and at least three of thermal or miscellaneous materials be taken and analyzed to be considered non-asbestos containing material in accordance with OSHA regulations.

In accordance with OSHA regulations, areas which contain asbestos materials are required to be labeled at the access points (i.e. the outside of mechanical rooms, etc.)

If there is any further information required, or other questions arise regarding this request, please contact Kelly Brown at 626-2317.

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