

**MICHIGAN STATE UNIVERSITY  
EAST LANSING, MICHIGAN**

**ABRAMS PLANETARIUM  
ASBESTOS INSPECTION**

**NOVEMBER 2006  
PROJECT NO. G06374**

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## INTRODUCTION

Fishbeck, Thompson, Carr & Huber, Inc. (FTC&H) was retained by Michigan State University (MSU), Office of Environmental and Occupational Safety (OEOS), East Lansing, Michigan, to conduct an asbestos building inspection of Abrams Planetarium. FTC&H discussed the project with Mr. Andy Smith, MSU-OEOS, prior to beginning the field work. The inspection was conducted in accordance with the FTC&H proposal to MSU dated June 2, 2006.

## CERTIFICATION

The asbestos building inspection was conducted by Mr. Steven M. Kimm, CPG, State-of-Michigan Accredited Asbestos Inspector No. A29671. The bulk asbestos samples were analyzed using Polarized Light Microscopy by EMSL Analytical, Inc. of Ann Arbor, Michigan (EMSL), which participates in the National Voluntary Laboratory Accreditation Program (Accreditation No. 101048-4).

## INSPECTION PROCEDURES AND SAMPLING METHODOLOGY

The survey was a functional space (room by room) survey and was used to design the sampling plan. Materials of similar age and uniform color and texture were classified into homogeneous areas. The rooms that were not accessible during the inspection were Room 3, Room 4A, and the basement plenum (confined space). Room by Room Asbestos Building Inspection Forms are provided in Appendix 1.

A minimum of one bulk asbestos sample was collected from miscellaneous materials, three to seven samples were collected from surfacing materials, and thermal systems were sampled as necessary. Obvious asbestos-containing materials (ACMs) such as transite, aircell, or other labeled materials were not sampled. As required by MSU, the inspection was limited to the building interior. Samples were not collected from roofing materials or exterior materials. In addition, samples were not collected from operating machinery or fire doors.

All samples were collected by a State-of-Michigan Accredited Asbestos Building Inspector. The samples were collected from areas considered representative of each homogeneous area. Destructive sampling was not conducted, and the samples were collected from accessible materials. Where appropriate, non-permanent labels were used to mark the sampling sites. Where necessary, sampling locations were repaired.

Thirty-nine distinct homogeneous materials suspected of containing asbestos were identified during the inspection. The homogeneous materials are described on the table in Appendix 2. A total of forty-eight bulk material samples (sixty-three total analyses) were collected from the homogenous materials for asbestos analysis. Bulk material samples were collected from suspect ACMs according to the protocol described in 29 CFR 1926.1101 (Occupational Safety and Health Administration Asbestos Construction Standard). Sample locations are described on the Bulk Sample Log (Appendix 3) and located on the drawings included as Appendix 4. Site photographs are included as Appendix 5.

## RESULTS

The samples were transported to EMSL for analysis. The analytical data reports provided by EMSL are included as Appendix 6.

Of the thirty-nine homogeneous materials sampled, a total of twelve homogenous materials were identified to contain asbestos above one percent by weight. The asbestos-containing homogeneous materials include:

- Magnesium silicate piping insulation.
- Magnesium silicate insulation on expansion tank.
- Mud insulated fittings on piping.
- Spray-on fireproofing/insulation on basement mechanical room ceilings.
- Black glue pods on mechanical room wall.
- 9" x 9" vinyl floor tile, dark brown with beige and orange linear streaks (black mastic is non-ACM).
- 9" x 9" vinyl floor tile, gray with black, white, and brown splotches (black mastic is also ACM).
- 9" x 9" vinyl floor tile, dark gray with linear cream streaks (black mastic is non-ACM).
- 9" x 9" vinyl floor tile, light gray with cream streaks (black mastic is non-ACM).
- 9" x 9" vinyl floor tile, dark brown with black core.
- Spray-on soundproofing/insulation on first floor ceilings and on planetarium dome.
- Stair tread, gray-brown with cream and gray streaks.

Homogeneous materials assumed to be ACM include:

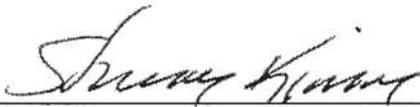
- Fire doors and caulking.
- Roofing materials.
- Insulated roof drains above ceilings.

Estimated quantities of each homogeneous area by function space are provided on the Room by Room Asbestos Building Inspection Forms (Appendix 1). Estimates of total quantity in the building for each homogeneous area are provided on the table in Appendix 2. The quantities provided within this report are only estimates. Additional materials may exist within wall cavities, ceiling cavities, or other inaccessible areas that could not be evaluated as part of this inspection.

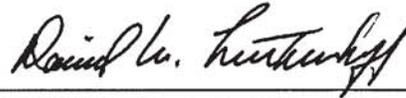
## CONCLUSIONS

Friable and non-friable ACMs and assumed ACMs were discovered during this inspection. Damaged materials observed during the inspection include:

- Spray-on fireproofing in basement mechanical rooms has delaminated in places.
- Spray-on soundproofing in Rooms 104, 103, 108, and H3 has been gouged.
- Spray-on soundproofing on the planetarium dome has delaminated and fallen onto the metal planetarium ceiling.
- Floor tile in the S-1 basement landing is broken in places.
- A mud insulated fitting in Room 1 is damaged and repaired by duct tape.



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## Description of Homogeneous Areas

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Material Description	Condition	Homogenous Area #	Asbestos Containing (Y) Yes (N) No	Quantity	Unit
Piping insulation (mag)	Undamaged	1	Y	100	l.f.
Expansion tank insulation (mag)	Undamaged	2	Y	40	s.f.
Mud fittings on piping	Undamaged	3	Y	185	ct.
Spray-on insulation	Damaged	4	Y	2,000	s.f.
Glue pods - brown	Undamaged	5	N	50	s.f.
Glue pods - black	Undamaged	6	Y	5	s.f.
Vibration dampening cloth - green	Undamaged	7	N	3	s.f.
Vibration dampening cloth - black	Undamaged	8	N	20	s.f.
9"x9" floor tile, dark brown with beige and orange linear streaks	Damaged	9	Y	4,690	s.f.
9"x9" floor tile, gray with black, white and brown splotches	Undamaged	10	Y	80	s.f.
1'x1' white ceiling tile, glue-on, linear fissures, and black glue pods	Undamaged	11	N	145	s.f.
4" brown cove base (brittle) and mastic	Undamaged	12	N	315	s.f.
9"x9" floor tile green and gray marbled on counter top	Undamaged	13	N	35	s.f.

For more information contact MSU Environmental Health and Safety - (517) 353-8956

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## Description of Homogeneous Areas

### ABRAMS PLANETARIUM MICHIGAN STATE UNIVERSITY

12"x12" floor tile, light gray and gray marbled texture on sink and backsplash	Undamaged	14	N	25	s.f.
Linoleum, white with gold specks on darkroom sink	Undamaged	15	N	25	s.f.
Drywall and joint compound	Undamaged	16	N	7,725	s.f.
2'x4' white lay in ceiling tile, pinholes and fissures perpendicular to long axis	Undamaged	17	N	300	s.f.
Door caulking - exterior doors	Undamaged	18	N	2	s.f.
2'x4" white lay in ceiling tile, pinholes and random fissures	Undamaged	19	N	145	s.f.
Plaster - white	Undamaged	20	N	390	s.f.
9"x9" floor tile, dark gray with linear cream streaks and mastic	Undamaged	21	Y	3,710	s.f.
9"x9" floor tile, light gray with cream streaks and mastic	Undamaged	22	Y	630	s.f.
12"x12" floor tile, light gray with dark gray streaks and mastic	Undamaged	23	N	30	s.f.
12"x12" floor tile, grey with gray and cream splotches and mastic	Undamaged	24	N	65	s.f.
9"x9" floor tile, dark brown with black core and mastic	Undamaged	25	Y	25	l.f.
Spray-on Insulation/soundproofing	Damaged	26	Y	3,365	s.f.
1'x1' white lay in ceiling tile, deepfissured texture with pinholes	Undamaged	27	N	630	s.f.

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## Description of Homogeneous Areas

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2'x2' white, lay in ceiling tile, pinholes (large and small)	Undamaged	28	N	210	s.f.
2"x2" white, lay in ceiling tile, pinholes and fissures,	Undamaged	29	N	3,160	s.f.
4" black cove base and mastic	Undamaged	30	N	1,630	l.f.
4" dark gray cove base and mastic	Undamaged	31	N	25	l.f.
Stairtread, gray brown with cream and gray streaks	Undamaged	32	Y	180	s.f.
Carpet glue	Undamaged	33	N	nm	s.f.
Window caulk - interior	Undamaged	34	N	6	s.f.
4" brown cove base (flexible) and mastic	Undamaged	35	N	80	l.f.
Fire Door	Undamaged	36	Assumed	55	ct.
Netting on fiberglass insulated piping	Undamaged	37	N	1,560	l.f.