

Michigan State University East Lansing, Michigan

Asbestos Inspection Linton Hall

**January 12, 2007
Project No. G06673**

ftc&h

**Fishbeck, Thompson, Carr & Huber
engineers • scientists • architects • constructors**

**MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN**

**LINTON HALL
ASBESTOS INSPECTION**

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LIST OF ACRONYMS

ACM Asbestos-Containing Material
 EMSL EMSL Analytical, Incorporated, Ann Arbor, Michigan
 FTC&H Fishbeck, Thompson, Carr & Huber, Inc.
 MSU Michigan State University
 OEOS Office of Environmental and Occupational Safety

INTRODUCTION

FTC&H was retained by MSU OEOS, East Lansing, Michigan, to conduct an asbestos building inspection of Linton Hall. FTC&H discussed the project with Mr. Andrew D. Smith, MSU-OEOS, prior to beginning the field work. The inspection was conducted in accordance with the September 13, 2006, FTC&H proposal to MSU.

CERTIFICATION

The asbestos building inspection was conducted by Mr. Mark Nelson, State-of-Michigan Accredited Asbestos Inspector No. A33420. The bulk asbestos samples were analyzed using Polarized Light Microscopy by 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. Rooms 2, 3, 4, 7, 121, and 317A in Linton Hall were not accessible during the inspection. 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 Insulation, depending on the quantity of the material. As required by MSU, the inspection was limited to the building interior and exterior mechanical equipment. Samples were not collected from roofing materials. In addition, samples were not collected from operating machinery or fire doors. Confined spaces and tunnels were not entered; however, the spaces were viewed from the doorways or openings.

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 necessary, sampling locations were repaired.

Forty-five distinct homogeneous materials suspected of containing asbestos were identified during the inspection. The homogeneous materials are described on Table 1. A total of 74 bulk material samples were collected from the homogenous material, and 103 total analyses were performed for asbestos. 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 2) and located on the drawings included as Appendix 3.

RESULTS

The samples were transported to EMSL for analysis. The analytical data report provided by EMSL is included as Appendix 5.

Of the 45 homogeneous materials sampled, a total of 16 homogenous materials were identified to contain asbestos above 1 percent by weight. The asbestos-containing homogeneous materials include:

- 9" x 9" Light brown vinyl floor tile with white specks (HA 3)
- 9" x 9" Dark brown vinyl floor tile with pink & white specks (HA 5)
- 12" x 12" Dark brown vinyl floor tile with pink & white specks (HA 8)
- 12" x 12" Black vinyl floor tile with pink & white specks (HA 9)
- 9" x 9" Grey vinyl floor tile with brown & white stripes (HA 24)
- 3" Pipe insulation (HA 28)
- 3" Air-o-cell pipe insulation (HA 29)
- 1" Air-o-cell pipe insulation (HA 30)
- 1" Pipe insulation (HA 33)
- Mud fitting 3" line (HA 34)
- Mud fitting 1" line (HA 35)
- 6" x 6" Dark brown vinyl floor tile with pink & white specks including positive mastic (HA 39)
- Boiler insulation (HA 40)
- 6" pipe insulation (HA 41)
- Mud fitting 6" line (HA 42)
- Window caulk (HA 47)

Homogeneous materials assumed to be ACM include:

- Fire doors

Homogeneous materials that are non-ACM include:

- 12 "x 12" black vinyl floor tile with white specks (HA 1)
- 12" x 12" white vinyl floor tile with light and dark grey specks (HA 2)
- Seamless floor covering - red (HA 6)
- 12" x 12" white vinyl floor tile with brown streaks (HA 7)
- Fibrous sub-flooring (HA 10)
- 18" x 18" ceiling tile - painted white with brown glue pods (HA 11)
- 1' x 1' ceiling tile with large fissures (HA 13)
- Drywall (HA 14)
- 4" black cove base (HA15)
- Plaster (HA 16)
- 2' x 2' ceiling tile with fissures (HA 17)
- Black vinyl stair cover (HA 18)
- Green vinyl stair cover (HA 19)
- 6" black cove base (HA 20)
- 1' x 1' ceiling tile with glue pod (HA 21)
- 12" x 12" green vinyl floor tile with pink & white stripes (HA 22)
- 2' x 2' ceiling tile with large fissures (HA 23)
- 9" x 9" dark grey vinyl floor tile with brown & white stripes (HA 25)
- Red vinyl stair cover (HA 26)
- 2' x 2' ceiling tile with pinholes & fissures (HA 27)
- 4" brown cove base (HA 31)
- 2' x 2' ceiling tile with pinholes (HA 32)
- 1' x 1' ceiling tile with pinholes (HA 36)
- 6" brown cove base (HA 37)
- Fibrous wall board (HA 38)
- Brown vinyl stair cover (HA 43)
- Seamless floor covering - red marbled (HA 44)
- Black window ledge (HA 45)

Estimated quantities of each homogeneous area by functional 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 Table 1.

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 asbestos inspection.

CONCLUSIONS

On October 10 and 11, 2006, a State-of-Michigan Accredited Building Inspector conducted an inspection for asbestos at Linton Hall. The ACMs and total quantities found as a result of this inspection are shown on Table 1.

Mark R. Nelson
Building Inspector No. A33420

David W. Lutkenhoff, CIH, CIAQP

Tables

Table 1 - Description of Homogeneous Materials

Asbestos Inspection - Linton Hall
Michigan State University, East Lansing, Michigan

Material Description	Condition	Homogeneous Area No.	Asbestos Containing ?	Quantity	Unit
12"x12" Black Vinyl Tile with White Speckes	u	1	n	641	s.f.
12"x12" White Vinyl Tile with Light and Dark Grey Speckes	u	2	n	580	s.f.
9" x 9" Light brown Vinyl Tile with white speckes	u	3	y	270	s.f.
9" x 9" Dark brown Vinyl Tile with Pink & White speckes	u	5	y	3,392	s.f.
Seamless floor covering - Red	u	6	n	160	s.f.
12"x12" White Vinyl Tile with Brown Streaks	u	7	n	810	s.f.
12" x 12" Dark brown Vinyl Tile with Pink & White speckes	u	8	y	1,165	s.f.
12" x 12" Black Vinyl Tile with Pink & White speckes	u	9	y	3	s.f.
Fibrous Sub-flooring	u	10	n	3,112	s.f.
18"x18" Ceiling tile - Painted white with brown gluepods	u	11	n	542	s.f.
1'x1' Ceiling tile with Large fissures	u	13	n	848	s.f.
Drywall	u	14	n	7,228	s.f.
4" Black cove base	u	15	n	1,507	l.f.
Plaster	u	16	n	55,675	s.f.
2' X 2' Ceiling tile with fissures	u	17	n	750	s.f.
Black vinyl stair cover	u	18	n	15	s.f.
Green vinyl stair cover	u	19	n	264	s.f.
6" Black cove base	u	20	n	259	l.f.
1'x1' Ceiling tile with Glue pod	u	21	n	2,338	s.f.
12" x 12" Green Vinyl Tile with Pink & White stripes	u	22	n	60	s.f.
2' X 2' Ceiling tile with large fissures	u	23	n	1,533	s.f.
9" x 9" Grey Vinyl Tile with Brown & White stripes	u	24	y	780	s.f.
9" x 9" Dark Grey Vinyl Tile with Brown & White stripes	u	25	n	30	s.f.
Red vinyl stair cover	u	26	n	242	s.f.
2' X 2' Ceiling tile with pinholes & fissures	u	27	n	1,765	s.f.
3" Pipe insulation	u	28	y	604	l.f.
3" Air-o-cell Pipe insulation	u	29	y	206	l.f.
1" Air-o-cell Pipe insulation	u	30	y	379	l.f.

Table 1 - Description of Homogeneous Materials

Asbestos Inspection - Linton Hall
Michigan State University, East Lansing, Michigan

Material Description	Condition	Homogeneous Area No.	Asbestos Containing ?	Quantity	Unit
4" Brown cove base	u	31	n	390	l.f.
2' X 2' Ceiling tile with pinholes	u	32	n	1,932	s.f.
1" Pipe insulation	u	33	y	159	l.f.
Mud fitting 3" line	u	34	y	203	ct
Mud fitting 1" line	u	35	y	149	ct
1' X 1' Ceiling tile with pinholes	u	36	n	2,595	s.f.
6" Brown cove base	u	37	n	45	l.f.
Fibrous wall board	sd	38	n	850	s.f.
6" x 6" Dark brown Vinyl Tile with Pink & White speckes	u	39	y	150	s.f.
6" x 6" Dark brown Vinyl Tile with Pink & White speckes (Mastic)	u	39	y	150	s.f.
Boiler Insulation	u	40	y	60	s.f.
6" Pipe insulation	u	41	y	100	l.f.
Mud fitting 6" line	u	42	y	53	ct
Brown vinyl stair cover	u	43	n	8	s.f.
Seamless floor covering - Red marbled	u	44	n	35	s.f.
Black window ledge	u	45	n	324	s.f.
Window caulk	u	47	y	2,780	l.f.

Notes:

u = no damage observed

sd = slightly damaged

d = damaged

l.f. = linear feet

s.f. = square feet