NARRATIVE REPORT

1.0 **BUILDING INFORMATION**

Reed Hall was originally constructed in 1961; the building remains largely un-renovated.

Reed Hall is a four-story, $46,136 \text{ ft}^2$ building which primarily serves as dormitory areas for students. Johnson Hall (A058) is attached to the south side of Reed Hall and is reported separately.

The interior floor finishes included floor tile, carpet, and concrete; the interior wall finishes included plaster, gypsum wallboard, concrete, and concrete block; and the interior ceiling finishes included ceiling tile, plaster, gypsum wallboard, ceiling texture, and concrete. The roofing system is a flat rubber-membrane roof and the exterior of the structure is brick and stone.

The piping systems were insulated; fiberglass insulation (with and without hard fittings) is located throughout the basement. Steam and water enter the building via a tunnel in room 4. HVAC systems located in the building consisted of steam radiators with a large clean air intake duct running along the elevator to room 4B.

2.0 **ASBESTOS SURVEY INFORMATION**

Reed Hall was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 5" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 5" for methodologies, definitions, and other pertinent supporting information.

LEGEND was granted full access to Reed Hall during the initial walk-through and sampling of the building. During subsequent walk-throughs of the building, for resampling and reporting purposes, LEGEND was granted access to the common areas and to 2-4 dormitory rooms per floor, only.

A total of 71 samples were collected from suspect asbestos-containing materials (ACM) from Reed Hall on May 25, 2007 and an additional 1 sample was collected on November 12, 2007. Laboratory analysis results indicate 13 of these samples tested positive for asbestos.

2.1 Suspect Materials Identified and Sampled

Hard Fittings on Fiberglass Insulation

HVAC Duct Tar Paper Wrap (over fiberglass layer)

Encapsulant on Fiberglass Insulation

Floor Tile (3 types)

Ceiling Texture (2 types)

Hard Plaster- Skim Coat (2 types)

Gypsum Wallboard

Carpet Mastic

Window Caulk

Exterior Building Seam Caulk (2 types)

Exterior Window Sill Caulk

Window Glazing on Entry Door/Window Systems

Glue Pucks (for fiberglass panels)

Ceiling Tile (3 types)

Sink Undercoating

Floor Tile Mastic (3 types)

Textured Paint (on hard plaster)

Hard Plaster- Base Coat (2 types)

Joint Compound

Baseboard Adhesive

Wall Texture

Exterior Window Caulk

Exterior Door Caulk

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 <u>Asbestos Containing Materials</u>

Hard Fittings on Fiberglass Insulation
Thick Popcorn Ceiling Texture
12" White and Gray Floor Tile
Exterior Building Seam Caulk on Elevator Penthouse (on roof)
9" Floor Tile and Mastic (assumed)

The ACM Locations/ Friable Materials Assessments Table includes ACM locations data.

2.3 Cost Estimates

Legend Technical Services Inc. estimates abatement costs (removal & disposal) of ACM for Reed Hall as follows:

ACM	QUANTITY	UNIT COST	TOTAL COST
Asbestos Hard Fittings on Fiberglass Insulation	191 ea	\$25.00/ea	\$4,775.00
Asbestos Ceiling Texture	840 ft ²	\$7.50/ft ²	\$6,300.00
Asbestos Floor Tile and Mastic	32,188 ft ²	\$4.00/ ft ²	\$128,752.00
Asbestos Building Seam Caulk	102 ft	\$4.00/ft	\$408.00
Total Estimated Abater	ment Costs:		\$140,235.00

2.4 Survey Notes

LEGEND was able to visually quantify hard fittings on fiberglass insulation throughout the basement on steam and water pipes. However, on floors 1-3 inaccessible ceilings and pipe chases prevented LEGEND from verifying the presence of possible additional hard fittings. LEGEND assumes additional hard fittings will be discovered during renovation or demolition activities on the water pipes supplying the laundry rooms, custodial rooms, and bathrooms and on steam pipes providing steam to radiators throughout the building. LEGEND recommends assuming an additional 100-150 hard fittings on fiberglass insulation on 1st and 2nd floors and an additional 50 hard fittings on 3rd floor.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 € 5 E E POTENTIAL	ASSESS. CAT. ¹	NOTES
Room 2 Abated M	ay 2012						
9" Floor Trie and Mastic	Assumed	646 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs, they are under the carpet.
Room 2A						•	
Hard Fittings on Fiberglass Insulation	10% Chrysotile	3 ea	Friable TSI	Good	Physical ■□□ Air Erosion ■□□ Vibration ■□□	7	The hard fittings are on the west end of the closet.
Room 4A							
Hard Fittings on Fiberglass Insulation	10% Chrysotile	4 ea	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	7	The hard fittings are on water lines at the ceiling level.
Room 4D							
Hard Fittings on Fiberglass Insulation	10% Chrysotile	6 ea	Friable TSI	Good	Physical ■□□ Air Erosion □□■ Vibration ■□□	6	The hard fittings are at the ceiling level in the room.
Room 5							
Hard Fittings on Fiberglass Insulation	10% Chrysotile	7 ea	Friable TSI	Good	Physical □□■ Air Erosion ■□□ Vibration ■□□	6	The hard fittings are at the ceiling level in the room.
9" Floor Tile and Mastic Abated Ju	Assumed Ine 2012	88 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs, they are under the carpet.
Room 6 Abated Au	igust 2008					•	
9" Floor Tile and Mastic	Assumed	205 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs, they are under the carpet.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 5 5 F F POTENTIAL	ASSESS. CAT. ¹	NOTES
oom 7 Abated J	une 2012						
12" White and Gray Floor Tile	3% Chrysotile	144 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile contains asbestos. The mastic is negative.
oom 88 Abated	June 2012	1		1	1		
9" Floor Tile and Mastic	Assumed	204 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs, they are under the carpet.
oom 99L Abated	June 2012	-			•		
9" Floor Tile and Mastic	Assumed	40 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs, they are under the carpet.
oom 100 Abated	d July 2008						
9" Floor Tile and Mastic	Assumed	220 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
orm Rooms 101,	102, 103, 104, 105, 1 Abated June 201	06, 107, 110, 1	 111, 112, 113, 11	 4, 115, 116, 11	 17, 118, 119, 120, 121	, 122, 123,	124, 125, 126, 127, 130, 131, 132, 133, 134,
9" Floor Tile and Mastic	Assumed	170 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
orm Rooms 108.	109, 128, and 129	bated June	2012	1	1	1	1
9" Floor Tile and Mastic	Assumed	242 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 등 등 등 등 무	ASSESS.	NOTES
Room 100A Area a	abated July 2008	, Legend Su	rvey ErrorLi	noleum in th	s Room		
9" Floor Tile and Mastic	Assumed	40 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 138 Abated	l July 2008			1		1	
9" Floor Tile and Mastic	Assumed	168 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 139 Abated	July 2008			1	1		
9" Floor Tile and Mastic	Assumed	180 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 142			<u>I</u>	1	<u>I</u>		
9" Floor Tile and Mastic Abated	Assumed June 2016	840 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Thick Popcorn Ceiling Texture Abated N	•	840 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion ■□□ Vibration ■□□	6	None
Room 143 Abated	June 2012						
9" Floor Tile and Mastic	Assumed	24 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 145 Abated	June 2012			1	l	ı	ı
9" Floor Tile and Mastic	Assumed	80 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
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^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) REED HALL (BUILDING A055)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 5 5 F	ASSESS. CAT. ¹	NOTES
Room 152 and 168	152 Abated June	e 2015					
including	Assumed ted May 2016 cavity fittings	253 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 154 and 174	Abated June 201	2			_	_	
9" Floor Tile and Mastic	Assumed	27 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 156 and 172	Abated June 2012	2	<u> </u>		<u>I</u>		
9" Floor Tile and Mastic	Assumed	18 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 160 (including	160A) Abated Ju	ne 2012					
9" Floor Tile and Mastic	Assumed	48 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 162 Abated	May 2009						
9" Floor Tile and Mastic	Assumed	24 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 258	<u> </u>		<u> </u>	<u>I</u>	1		1
9" Floor Tile and Mastic	Assumed	24 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

Room 360

^{* =} Non-Friable materials were not assessed Page 4 of 9

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S E F POTENTIAL	ASSESS. CAT. ¹	NOTES
9" Floor Tile and Mastic	Assumed	24 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
oom 166 and 176	Abated June 201	2					
9" Floor Tile and Mastic	Assumed	35 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
soom 170 and the	storage room next to	o the west sta	irway on the 1st	floor Abated	May 2009		
9" Floor Tile and Mastic	Assumed	50 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
lallway 188 Abat	ed June 2012		<u> </u>	1	. I		
9" Floor Tile and Mastic	Assumed	1,951 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
35, 236, 237, 238, 9" Floor Tile and		170 ft ²	Non-Friable	N/A*	17, 218, 219, 220, 221 N/A*	, 222, 223, N/A*	224, 225, 226, 227, 228, 229, 232, 233, 234, The floor tile and mastic were assumed to be
Mastic	Abated May 2	each 2012	Miscellaneous				ACMs.
orm Rooms 210, 2	211, 230, and 231						
9" Floor Tile and Mastic	Assumed	242 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

			1	T	T		
ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S ± 6 S S € S S S S S S S S S S S S S S S S	ASSESS.	NOTES
Room 250 and 26 4	250 Abated June	2015					
9" Floor Tile and Mastic 264 al	bated May 2016	253 Tt each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
	ling cavity fittings						1
Room 252 and 268 9" Floor Tile and Mastic	Assumed	27 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 254 and 266	6						1
9" Floor Tile and Mastic	Assumed	18 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 256 (includi	ing 256Δ)						
9" Floor Tile and Mastic	Assumed	48 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 262 and 270	n						<u> </u>
9" Floor Tile and Mastic	Assumed	35 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Hallway 288		1	1	1	<u> </u>	1	1
9" Floor Tile and Mastic May 201	Assumed 17 - 15ft x 2.5ft floor front of elevator		Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

				1	<u> </u>		
ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S E POTENTIAL S S S	ASSESS.	NOTES
		06, 307, 308, 3	309, 312, 313, 3:	14, 315, 316, 3	17, 318, 319, 320, 321	, 322, 323 ,	324, 325, 326, 327, 328, 329, 332, 333, 334,
35, 336, 337, 338, 9" Floor Tile and		170 ft ²	Non-Friable	N/A*	N/A*	N1/A*	The floor tile and mastic were assumed to be
Mastic	Assumed	each	Miscellaneous	N/A*	N/A*	N/A*	ACMs.
iviastic	A1 - (- 1 B4 C		iviiscenarieous				ACIVIS.
	Abated May 2	2012					
orm Rooms 310	311, 330, and 331						
9" Floor Tile and	Assumed	242 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic		each	Miscellaneous	,		,	ACMs.
			-1	-1			1
oom 350 and 368	350 Abated June	2015					
9" Floor Tile and	Assumed	253 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic 368 at	bated May 2016	each	Miscellaneous				ACMs.
	ing cavity fittings						
molad	ing davity numgo						
oom 352 and 374	ļ				_		
9" Floor Tile and	Assumed	27 ft ² each	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic			Miscellaneous				ACMs.
800m 354 and 372		18 ft ² each	Non Estable	N1 / A *	N1 / A *	N1 / A *	The floor tile and marking on a command to be
9" Floor Tile and Mastic	Assumed	18 Tt each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
iviastic			iviiscenarieous				ACIVIS.
Room 356 and 370	1						
9" Floor Tile and	Assumed	20 ft ² each	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic			Miscellaneous				ACMs.
							· · · · · · · · · · · · · · · · · · ·

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) REED HALL (BUILDING A055)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S H POTENTIAL S S H	ASSESS. CAT. ¹	NOTES
Room 358 (including	g 358A)						
9" Floor Tile and Mastic	Assumed	48 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 362							
9" Floor Tile and Mastic	Assumed	102 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 366 and 376	1		1	1	1		
9" Floor Tile and Mastic	Assumed	35 ft ² each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Hallway 388			<u> </u>				
9" Floor Tile and Mastic May 201	Assumed 7 - 15ft x 2.5ft floor 1 front of elevato		Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
East Tunnel							
Hard Fittings on Fiberglass Insulation	10% Chrysotile	54 ea	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	7	None
West Tunnel							
Hard Fittings on Fiberglass Insulation	10% Chrysotile	49 ea	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	7	The hard fittings are on the west end of the closet.

* = Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 € E	ASSESS.	NOTES
South Tunnel	100/ 6	C0	I recelle	61	I Division I	7	The board fishing a great sharp and a fish a
Hard Fittings on Fiberglass Insulation	10% Chrysotile	68 ea	Friable TSI	Good	Physical ■□□ Air Erosion ■□□ Vibration		The hard fittings are on the west end of the closet.
Exterior/Roof		1.00 6	1	1 1 1 1 to			
White Building Seam Caulk on Elevator Penthouse	3% Chrysotile	102 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The seam caulk is on every side of the elevator penthouse on the roof and around the door on the north side.

¹Assessment Categories:

- 1) Damaged or Significantly Damaged TSI ACM
- 2) Damaged Friable Surfacing ACM
- 3) Significantly Damaged Friable Surfacing ACM
- 4) Damaged or Significantly Damaged Friable Miscellaneous ACM

- 5) ACM with Potential for Damage
- 6) ACM with Potential for Significant Damage
- 7) Any Remaining Friable ACM or Friable Suspected ACM

End