NARRATIVE REPORT

1.0 **BUILDING INFORMATION**

Engineering Administration was originally constructed in 1965; the building has had no major renovations.

Engineering Administration is a three-story, 9,579 ft² building which primarily serves as office space for architecture and engineering personnel. Dolve Hall (A018) and Architecture (A064) are attached via skyways to the east side of Engineering Administration, Civil Engineering (A066) is attached via a skyway to the north side of Engineering Administration, and Electrical Engineering (A065) is attached via a skyway to the west side of Engineering Administration and are each reported separately; the skyways do not contain suspect asbestos containing materials.

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

The piping systems were insulated; fiberglass insulation (with hard fittings) and mag block insulation (with hard fittings) are located in the building. Two tanks with hard insulation are located in the basement. Steam and domestic water enter the building via a tunnel into the basement. HVAC systems located in the building consisted of steam radiators and forced air furnaces equipped with heating/cooling coils.

2.0 **ASBESTOS SURVEY INFORMATION**

Engineering Administration was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 6" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 6" for methodologies, definitions, and other pertinent supporting information.

A total of 90 samples were collected from suspect asbestos-containing materials (ACM) from Engineering Administration on May 2, 2007 and an additional 4 samples were collected on March 12, 2008. Laboratory analysis results indicate **32 of these samples tested positive for asbestos**.

2.1 Suspect Materials Identified and Sampled

Hard Fittings on Fiberglass Insulation

Rainleader Bowl Insulation

Flooring Tar

Flooring/Wall Tar

HVAC Duct Caulk (3 types)
Exterior Air Vent Caulk
Hard Plaster- Monocoat
Hard Plaster- Skimcoat

Joint Compound

Wall Texture (2 types)

Window Caulk

Exterior Awning Ceiling Texture

Mag Block Pipe Insulation

Flooring Panels
Flooring Tarpaper

Black HVAC Canvas Connector

Roof Crowning Caulk Roof Flashing (3 types) Hard Plaster- Basecoat Gypsum Wallboard Ceiling Texture (2 types)

Window Glazing

Door Caulk

Exterior Window Caulk

Exterior Walkway Caulk White Sealant (above ceiling joists) Hard Pack on Fiberglass Insulation Sink Undercoating Tank Insulation (2 types)
Exterior Window Glazing
Hard Fittings on Mag Block Insulation

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 <u>Asbestos Containing Materials</u>

Hard Fittings on Fiberglass Insulation
Mag Block Pipe Insulation
Rainleader Bowl Insulation
Hard Fittings on Mag Block Insulation
White HVAC Duct Caulk
Gray HVAC Duct Caulk
Gray Sink Undercoating
Rough Ceiling Texture
Popcorn Wall Texture
Acoustical Ceiling Texture
Tank #63-997-01 Insulation
Small Vertical Tank Insulation
Exterior Window Glazing
Tan HVAC Duct Caulk
Hard Pack on Fiberglass Insulation

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 Engineering Administration as follows:

АСМ	QUANTITY	UNIT COST	TOTAL COST
Asbestos Hard Fittings on Fiberglass Insulation	181 ea	\$60.00/ea	\$10,860.00
Asbestos Rainleader Bowl Insulation	1 ea	\$60.00/ea	\$60.00
Asbestos Mag Block Pipe Insulation	100 ft	\$25.00/ft	\$2,500.00
Asbestos Hard Fittings on Mag Block Insulation	29 ea	\$25.00/ea	\$725.00
Asbestos Tank Insulation (all types)	6 ft ²	\$50.00/ft ²	\$3,000.00
Asbestos Sink Undercoating	2 ea	\$150.00/ea	\$300.00
Asbestos Window Glazing	31 ea	\$225.00/ea	\$6,975.00
Asbestos Hard Pack on Fiberglass Insulation	37 ea	\$60.00/ea	\$2,220.00
Asbestos HVAC Duct Caulk	3 ea	\$100.00/ea	\$300.00
Asbestos Ceiling Texture (all types)	5,386 ft ²	\$7.50/ft ²	\$40,395.00
Asbestos Wall Texture	217 ft ²	\$7.50/ft ²	\$1,627.50
Total Estimated Abater	\$68,422.50		

2.4 **Survey Notes**

LEGEND was unable to visually quantify hard fittings on fiberglass insulation throughout the basement, hallway 188, and room 399. However, on floors 1-2 inaccessible ceilings and pipe chase prevented LEGEND from verifying the presence of all possible additional hard fittings. LEGEND assumes additional hard fittings, whose presence is indicated on original mechanical drawings for the structure, will be discovered during renovation or demolition activities. LEGEND recommends assuming an additional 50-75 hard fittings on fiberglass insulation on each of the 1st and 2nd floors.

LEGEND was also able to visually quantify asbestos rainleader bowl insulation in room 399; original mechanical drawings for the structure indicate the presence of 3 additional rainleader bowls inside the awning above the 2nd floor exterior walkway. LEGEND was unable to visually verify the existence of the ACM insulation on the rainleader bowls and recommends assuming the ACM insulation is present in these 3 locations.

Several types (homogeneous areas) of HVAC Duct Caulk were identified and visually quantified in room 399. LEGEND inspected the remainder of the building for the presence of the HVAC Duct Caulk; however, the ductwork throughout the building is wrapped in fiberglass insulation. LEGEND located several areas in the access panels above hallway 188 where the fiberglass insulation was damaged and/or removed and was unable to identify HVAC Duct Caulk on the ducts. LEGEND assumes the HVAC Duct Caulks were isolated to room 399 and does not anticipate further quantities of HVAC Duct Caulk in the building. However, the potential exists that further quantities will be discovered during renovation or demolition activities.

June 2024 All Remaining ACM removed prior to building demo

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

Hard Fittings on Fiberglass Insolation 25% Amosite 10f fittings 175 1	ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD HIGH	ASSESS. CAT. ¹	NOTES
Signature Sign	Basement								
Insulation TSI Air Erosion Older From Notice (TSI) Center of the basement mechanical area. Small Vertical Tank Insulation 8% Chrysotile (TSI) 2 ft² Friable TSI Damaged Air Erosion Older (Nibration) 1 The small vertical tank is in the center of the basement mechanical area. Mag Block Pipe Insulation 25% Amosite 64 ft. Friable TSI Good Physical Air Erosion Older (Nibration) 6 The mag block pipe insulation is throughout the basement mechanical area. Hard Pittings on Mag Block Pipe Insulation 25% Amosite 21 fittings Friable TSI Good Physical Air Erosion Older (Nibration) 6 The hard fittings on mag block insulation are throughout the basement mechanical area. Hard Pack on Fiberglass Insulation 3% Chrysotile 24 each TSI Friable TSI Good Physical Air Erosion Older (Nibration) 6 The hard pack on fiberglass insulation is throughout the basement mechanical area. Room 101 Room 103 Room 103 Room 103 Room 104 10% Chrysotile S74 ft² Friable Sufficing Pamaged Air Erosion Old Ai	=			TSI		Air Erosion		6	
Insulation TSI Air Erosion Ovibration Image block Pipe Insulation basement mechanical area. Mag Block Pipe Insulation 25% Amosite 64 ft. Friable TSI Good Physical Air Erosion Ovibration 6 The mag block pipe insulation is throughout the basement mechanical area. Hard Fittings on Mag Block Pipe Insulation 25% Amosite 21 fittings Friable TSI Good Physical Air Erosion Ovibration 6 The hard fittings on mag block insulation are throughout the basement mechanical area. Hard Pack on Fiberglass Insulation 3% Chrysotile 24 each TSI Friable TSI Good Physical Air Erosion Ovibration 6 The hard fittings on mag block insulation are throughout the basement mechanical area. Room 101 Accoustical Celling Texture 197 ft² Friable Surfacing Damaged Physical Air Erosion Ovibration 2 None. Room 103 Accoustical Celling Texture 10% Chrysotile 574 ft² Friable Sufficing Damaged Physical Air Erosion Ovibration 2 None.		25% Amosite	4 ft²		Good	Air Erosion		6	
TSI Air Erosion Vibration		8% Chrysotile	2 ft²		Damaged	Air Erosion		1	
Acoustical Ceiling Texture State		25% Amosite	64 ft.		Good	Air Erosion		6	
Room 101 Acoustical Ceiling Texture 10% Chrysotile 574 ft² Friable Sufficing Texture 10% Chrysotile Sufficing Texture 10% Chrysotile Sufficing Texture 10% Chrysotile Sufficing Texture 10% Chrysotile Sufficing Damaged Physical Air Erosion Sufficient Damaged Physical Sufficient Damaged Physical Sufficient Sufficient Damaged Physical Sufficient Sufficient Damaged Physical Sufficient Sufficient Sufficient Damaged Physical Sufficient Suffic		25% Amosite	21 fittings		Good	Air Erosion		6	
Acoustical Ceiling Texture 10% Chrysotile 197 ft² Friable Surfacing Damaged Physical Air Erosion Vibration Comparison Vibration 10% Chrysotile 10% Chrysotile 574 ft² Friable Surfacing Physical Physical Acoustical Ceiling Texture Physical Air Erosion Air Erosi		•	24 each		Good	Air Erosion		6	, •
Room 103 Acoustical Ceiling 10% Chrysotile 574 ft2 Friable Sufficing Damaged Physical Air Erosion 2 None. Surfacing Air Erosion 10	Room 101								
Acoustical Ceiling Texture 10% Chrysotile 574 ft ² Friable Damaged Physical Damaged Air Erosion Damaged Air Erosion Damaged Sufficing Damaged	•	10% Chrysotile	197 ft²		Damaged	Air Erosion		2	None.
Texture Sufficing Air Erosion □■□	Room 103								
	ŭ	10% Chrysotile	574 ft²		Damaged	Air Erosion		2	None.

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

June 2024 All Remaining ACM removed prior to building demo

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH HIGH	ASSESS. CAT. ¹	NOTES
Room 106 Abated	Feb 2013							
Acoustical Ceiling Texture	10% Chrysotile	587 ft ²	Friable Surfacing	Damaged	Physical Air Erosion Vibration		2	None.
Room 108								
Acoustical Ceiling Texture	10% Chrysotile	239 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	None.
Hallway 188		•			•		•	
Acoustical Ceiling Texture	10% Chrysotile	264 ft ²	Friable Surfacing	Damaged	Physical Air Erosion Vibration		2	None.
Hard Fittings on Fiberglass insulation	25% Amosite	63 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	The hard fittings on fiberglass insulation are above the ceiling and accessible through several panels (includes area above room 104).
Hard Pack on Fiberglass Insulation	3% Chrysotile 2% Amosite	10 each	Friable TSI	Good	Physical Air Erosion Vibration		6	The hard pack on fiberglass insulation is above the ceiling and accessible through several panels (includes area above room 104).
Hallway 188A	'	•					-	
Acoustical Ceiling Texture	10% Chrysotile	140 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	None.
Room 199M	•	•	•	<u> </u>	•		•	
Acoustical Ceiling Texture	10% Chrysotile	99 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	None.

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

June 2024 All Remaining ACM removed prior to building demo

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD	ASSESS. CAT. ¹	NOTES
Room 199W								
Acoustical Ceiling Texture	10% Chrysotile	99 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		2	None.
Room 201								
Acoustical Ceiling Texture	10% Chrysotile	332 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	None.
Room 202								
Acoustical Ceiling Texture	10% Chrysotile	33 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	None.
Gray Sink Undercoating	15% Chrysotile	1 each	Non-Friable Miscellaneous	N/A*	N/A*	•	N/A*	The gray sink undercoating is on the west wall.
Room 203	<u> </u>		. L	.I.				
Acoustical Ceiling Texture	10% Chrysotile	274 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	None.
Popcorn Wall Texture	3% Chrysotile	217 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	The wall texture is on the middle partition wall and along the wall in the south west corner.
Rough Ceiling Texture	3% Chrysotile	44 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		5	The ceiling texture is in the south west corner of the room.

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

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 € 5 € POTENTIAL	ASSESS.	NOTES
Room 204							
Acoustical Ceiling Texture	10% Chrysotile	96 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Gray Sink Undercoating	15% Chrysotile	1 each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The gray sink undercoating is located along the north wall.
Room 207		·			·		
Acoustical Ceiling Texture	10% Chrysotile	205 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Room 208							
Acoustical Ceiling Texture	10% Chrysotile	245 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Room 209 (entry ar	ea)						
Acoustical Ceiling Texture	10% Chrysotile	42 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Room 210	-					•	
Acoustical Ceiling Texture	10% Chrysotile	258 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Room 211			1		1		
Acoustical Ceiling Texture	10% Chrysotile	32 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.

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

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S H S S S S S S S S S S S S S S S S S	ASSESS. CAT. ¹	NOTES
Room 213							
Acoustical Ceiling Texture	10% Chrysotile	63 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Hallway 288							
Acoustical Ceiling Texture	10% Chrysotile	1,424 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Hallway 288A							
Acoustical Ceiling Texture	10% Chrysotile	139 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	5	None.
Room 399							
Gray HVAC Duct Caulk	20% Chrysotile	1 ea.	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The gray HVAC duct caulk is on the topside of a duct along the west end of the room, where the duct turns.
White HVAC Duct Caulk	20% Chrysotile	1 ea.	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The white HVAC duct caulk is located on the south end of the large AHU where the clean air intake duct meets the AHU. (very thin layer)
Tan HVAC Duct Caulk	3% Chrysotile 2% Amosite	1 ea.	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The tan HVAC duct caulk is around the heating coils on the duct along the west end of the room.
Mag Block Insulation	15% Amosite	36 ft.	Friable TSI	Good	Physical □□■ Air Erosion □□■ Vibration □□■	6	The mag block insulation is located throughout room 399.
Hard Fittings on Mag Block Insulation.	3% Chrysotile 10% Amosite	8 fittings	Friable TSI	Good	Physical □□■ Air Erosion □□■ Vibration □□■	6	The hard fittings are on mag block insulation are located throughout room 399.

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

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD	ASSESS. CAT. ¹	NOTES
Hard Fittings on Fiberglass Insulation	3% Chrysotile 10% Amosite	17 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	The hard fittings on fiberglass insulation are located throughout room 399.
Hard Pack on Fiberglass Insulation	3% Chrysotile 2% Amosite	3 ea.	Friable TSI	Good	Physical Air Erosion Vibration		6	The hard pack on fiberglass insulation is on steam pipes leading to heating coils in duct work on the west end of room 399.
Rainleader Bowl Insulation	5% Chrysotile 3% Amosite	1 each	Friable TSI	Significantly Damaged	Physical Air Erosion Vibration		1	The rainleader bowl insulation is located in the center of room 399.
Exterior								
Window Glazing	2% Chrysotile	31 windows	Non-Friable Miscellaneous	N/A*	N/A*	:	N/A*	The asbestos window glazing is on the exterior windows. Refer to the ACM locations diagrams for exact locations.

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