NARRATIVE REPORT

1.0 BUILDING INFORMATION

Putnam Hall was originally constructed in 1905; there appears to have been several renovations, notably, a 1982 renovation throughout the basement and a 1983 renovation throughout the 1st and 2nd floors.

Putnam Hall is a three-story, 10,015 ft^2 building which primarily serves as office and classroom areas.

The interior floor finishes included carpet, ceramic tile, concrete, wood, and floor tile; the interior wall finishes included plaster, gypsum wallboard, wood, and ceramic tile; and the interior ceiling finishes included ceiling tile, plaster, and gypsum wallboard. The roofing system is a peaked wood shingled roof and the exterior of the structure is brick.

The piping systems were insulated; fiberglass insulation (without hard fittings) and neoprene insulation are located in the building. Steam and domestic water enter the building via a tunnel into room 1. HVAC systems located in the building consisted of steam radiators and a forced air furnace with heating/cooling coils.

2.0 ASBESTOS SURVEY INFORMATION

Putnam Hall was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 2" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 2" for methodologies, definitions, and other pertinent supporting information.

A total of 62 samples were collected from suspect asbestos-containing materials (ACM) from Putnam Hall on June 22, 2007 and an additional 4 samples were collected on December 13, 2007. Laboratory analysis results indicate **17 of these samples tested positive for asbestos**.

2.1 Suspect Materials Identified and Sampled

Joint Compound
Floor Filler
Hard Plaster- Monocoat (2 types)
Hard Plaster- Basecoat
Carpet Mastic
Sink Undercoating
White Paper Layer (above 12" ceiling tile)
Glue Puck (for 12" ceiling tile)
Floor Tile Mastic
Exterior Window Caulk
Exterior Building Seam Caulk
Exterior Surfacing Cement
Roof Flashing
Roof Tarpaper
Gypsum Wallboard (2 types)
Felt Adhesive (residual)
Hard Plaster- Skimcoat
Baseboard Adhesive (2 types)
Window Glazing
Encapsulant on Fiberglass Insulation
Ceiling Tile (2 types)
Floor Tile
Flooring Felt
Exterior Penetration Putty
Exterior Foundation Caulk
Stair Tread Adhesive
Roof Tar (2 types)
Exterior Window Glazing (4 types)

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 Asbestos Containing Materials

9" Floor Tile and Mastic (assumed)
Hard Plaster- Monocoat (2 types)
Hard Plaster- Skimcoat
Hard Plaster- Basecoat
Gray Sink Undercoating
White Paper Layer (above 12" ceiling tile)
Roof Flashing
Roof Tar (1 type)
Exterior Window Glazing (2 types)

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 Putnam Hall as follows:

ACM	QUANTITY	UNIT COST	TOTAL COST
Asbestos Floor Tile and Mastic	1,516 ft^2	\$4.00/ ft^2	\$6,064.00
Asbestos Hard Plaster	3,965 ft^2	\$5.00/ ft^2	\$19,825.00
Asbestos Sink Undercoating	1 ea	\$150.00/ ea	\$150.00
Asbestos White Paper Layer	2,218 ft^2	\$5.00/ ft^2	\$11,090.00
Asbestos Window Glazing	7 ea	\$225.00/ ea	\$1,575.00
Asbestos Roof Flashing	16 ea	*	*
Asbestos Roof Tar	4,148 ft^2	*	*
Total Estimated Abatement Costs:			**\$38,704.00**

*The roof tar and roof flashing on Putnam Hall have been installed directly over the roof wood panels. The material may not be abatable; the roof tar and roof flashing may have to be abated by removing the roof wood panels (component removal). LEGEND cannot accurately estimate to costs associated with this type of roof abatement. If the roof is to be impacted by future renovations, an asbestos abatement contractor and a roofing contractor should be consulted at that time.

2.4 Survey Notes

The wall hard plaster in Putnam Hall was quantified using a combination of visual verification and a review of architectural drawings. Several areas were identified on the architectural drawings as having residual wall hard plaster that was not removed during previous renovation projects and that could not be visually verified due to new wall systems (potentially concealing the wall hard plaster). In these areas, LEGEND quantified the wall hard plaster based off of the architectural drawings. These areas are identified on the ACM Locations/ Friable Materials Assessments Table in the notes column by way of referencing the architectural drawings. Also of note, the architectural drawings indicated that wall hard plaster had been left on all exterior walls in the basement. LEGEND's visually verification of these areas indicated the wall hard plaster had been removed, studs were added against the exterior walls, gypsum wallboard was installed, and the new wall cavities were filled with expandable insulation. However, the potential exists that the exterior walls may still have wall hard plaster under the expandable insulation. LEGEND recommends assuming the wall hard plaster is present until a destructive

survey can be conducted for final visual verification. The exterior wall surface area is approximately 2,580 ft^2.

The 9" floor tile and mastic identified under the carpet on the 1st floor was quantified by pulling the carpet back in several corners in each room and visually inspecting for its presence. However, during previous renovation projects a floor filler material was used extensively throughout the 1st floor; this material interfered with LEGEND's inspection. In addition, the 9" floor tile and mastic appears to follow a previous floor plan for the building prior to the 1983 renovations adding to the difficulties of visual verification. LEGEND recommends assuming all of 1st floor to have 9" floor tile and mastic below the current flooring systems until a destructive survey can be conducted for final visual verification. The remaining surface area of 1st floor is approximately 2,000 ft^2.

The white paper layer (above 12" ceiling tile) identified above the 2'x4' ceiling tile on 1st floor appears to follow a previous floor plan for the building prior to the 1983 renovations. This is indicated on the architectural drawings available for Putnam Hall and by visual verification of the material crossing part way through a few of the current rooms, following the lines where previous walls would have been. Using this information LEGEND recommends assuming that the north end of hallway 188 has this white paper layer (above 12" ceiling tile) above its current gypsum wallboard ceiling until a destructive survey can be conducted for final visual verification. The surface area the north end hallway 188 is approximately 270 ft^2.

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU)
PUTNAM HALL (BUILDING A011)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL LOW MOD HIGH	ASSESS. CAT.[1]	NOTES
Room 5							
Hard Plaster (wall)	2-10% Chrysotile	125 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on the west wall, it has a layer of gypsum wallboard over it.
Room 9							
Hard Plaster (wall)	2-10% Chrysotile	55 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on a small section of the north wall, it has a layer of gypsum wallboard over it.
Room 12							
Hard Plaster (wall)	2-10% Chrysotile	30 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on the west wall, it has a layer of gypsum wallboard over it.
Hard Plaster (ceiling)	2% Chrysotile	17 ft^2	Friable Surfacing	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	2	The ceiling hard plaster was visually verified, it is above the ceiling tile.
Room 13							
Hard Plaster (wall)	2-10% Chrysotile	55 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on a small section of the north wall, it has a layer of gypsum wallboard over it.
Room 19							
Hard Plaster (wall)	2-10% Chrysotile	125 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on the east wall, it has a layer of gypsum wallboard over it.
Hallway 88							
Hard Plaster (wall)	2-10% Chrysotile	320 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified by rooms 5, 19, and 88A, it has a layer of gypsum wallboard over it.

* = Non-Friable materials were not assessed

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL LOW MOD HIGH	ASSESS. CAT.[1]	NOTES
Hard Plaster (ceiling)	2% Chrysotile	188 ft^2	Friable Surfacing	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	2	The ceiling hard plaster was visually verified, it is above the ceiling tile by rooms 99M and 99W.
Stairway 88A							
Hard Plaster (wall)	2-10% Chrysotile	416 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	Architectural drawings from the last major renovation indicated the wall plaster was left in this area.
Hard Plaster (ceiling)	2% Chrysotile	130 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	Architectural drawings from the last major renovation indicated the ceiling plaster was left in this area.
Room 99M							
Hard Plaster (wall)	2-10% Chrysotile	160 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	Architectural drawings from the last major renovation indicated the wall plaster was left on the east wall.
Hard Plaster (ceiling)	2% Chrysotile	108 ft^2	Friable Surfacing	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	2	The ceiling hard plaster was visually verified, it is above the ceiling tile.
Room 99W							
Hard Plaster (wall)	2-10% Chrysotile	160 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	Architectural drawings from the last major renovation indicated the wall plaster was left on the west wall.
Hard Plaster (ceiling)	2% Chrysotile	108 ft^2	Friable Surfacing	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	2	The ceiling hard plaster was visually verified, it is above the ceiling tile.
Room 101 Now Room 102 Suite (102, 102A-D)							
Hard Plaster (wall)	2-10% Chrysotile	330 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on the west wall, it has a layer of gypsum wallboard over it. This is in 102 & 102A

* = Non-Friable materials were not assessed

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL LOW MOD HIGH	ASSESS. CAT.[1]	NOTES
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	740 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
~~9" Floor Tile and Mastic~~ Abated March 2014	Assumed	100 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) was identified around the entry door on the west wall. (see note in narrative report section 2.4)
Room 102 Now Room 104							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	96 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
Room 102A Abated March 2014							
~~9" Floor Tile and Mastic~~	Assumed	108 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)
Room 102B Now Room 104							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	80 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
~~9" Floor Tile and Mastic~~ Abated March 2014	Assumed	80 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)
Room 102C Now Room 104B							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	100 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
~~9" Floor Tile and Mastic~~ Abated March 2014	Assumed	100 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)

* = Non-Friable materials were not assessed

LEGEND TECHNICAL SERVICES, INC.

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LEGEND No. 0700048 (NDSU)
PUTNAM HALL (BUILDING A011)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL LOW MOD HIGH	ASSESS. CAT.[1]	NOTES
Room 102D Now Room 104C							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	105 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
~~9" Floor Tile and Mastic~~ Abated March 2014	Assumed	105 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)
Room 104 Now Room 106							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	55 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
Gray Sink Undercoating	5% Chrysotile	1 sink	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	There is only sink in the room, it is along the east wall that borders room 103.
Room 105 Now Room 106							
Hard Plaster (wall)	2-10% Chrysotile	120 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on the east wall bordering hallway 188, it has a layer of gypsum wallboard over it.
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	725 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
~~9" Floor Tile and Mastic~~ Abated December 2013	Assumed	725 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)
Room 105A Now Room 106B							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	168 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)

* = Non-Friable materials were not assessed

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PUTNAM HALL (BUILDING A011)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL LOW MOD HIGH	ASSESS. CAT.[1]	NOTES
Room 105B Now Room 106A							
Hard Plaster (wall)	2-10% Chrysotile	180 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified on the east wall, it has a layer of gypsum wallboard over it.
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	144 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
Room 105C Now Room 106D							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	45 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
Room 105D Now Room 106C							
White Paper Layer (above 12" ceiling tile)	50% Chrysotile	128 ft^2	Friable Miscellaneous	Damaged	Physical ■□□ Air Erosion ■□□ Vibration ■□□	4	The white paper layer is above the 12" ceiling tile; the 12" ceiling tile is above the 2'x4' ceiling tile. (see note in narrative report section 2.4)
~~9" Floor Tile and Mastic~~ Abated December 2013	Assumed	128 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)
Hallway 188							
Hard Plaster (wall)	2-10% Chrysotile	315 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	Architectural drawings from the last major renovation indicated the wall plaster was left on the northeast and northwest walls.
~~9" Floor Tile and Mastic~~ Abated May 2015	Assumed	270 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 9" floor tile and mastic (under carpet) were assumed to be ACM. (see note in narrative report section 2.4)

* = Non-Friable materials were not assessed

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Stairway 188A							
Hard Plaster (wall)	2-10% Chrysotile	900 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	Architectural drawings from the last major renovation indicated the wall plaster was left in this area.
Stairway to 2nd Floor (by room 105) now by 106							
Hard Plaster (wall)	2-10% Chrysotile	270 ft^2	Non-Friable Surfacing	N/A*	N/A*	N/A*	The wall hard plaster was visually verified in this area.
Exterior							
Window Glazing	3-5% Chrysotile	7 windows	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos window glazing is on the 5 windows around the south entry door and the 2 windows to the sides of the north entry doors.
Roof							
Flashing	15% Chrysotile	16 ea	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The flashing was observed around the base of 16 air vents on the roof.
Tar Layer	15% Chrysotile	4,148 ft^2	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The roof construction is wood shakes over tar paper with a tar layer below that. This bottom tar layer contains asbestos.

[1]Assessment 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

* = Non-Friable materials were not assessed