

FACILITY AUDIT REPORT

Aviation Building
164 West 19th Avenue

#036



AVIATION BUILDING

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
PROJECTS	6
BUILDING SYSTEMS INFORMATION	9
NARRATIVE	11
History	11
Foundation.....	11
Columns & Beams	11
Exterior Walls.....	11
Exterior Windows & Doors	12
Roofing & Flashing.....	12
Partitions & Wall Finishes	12
Interior Doors.....	12
Floor Finishes	13
Ceilings & Finishes.....	13
Conveying.....	13
Plumbing.....	13
Fire Protection.....	14
Cooling & Ventilation.....	14
Air Handling Units.....	14
Exhaust	15
Electrical Service & Distribution	15
Lighting & Power	15
Safety Standards	15
BUILDING EVALUATION SUMMARY	17
COMPONENT RATING	17
Foundation.....	18
Columns & Beams	19
Exterior Walls.....	20
Exterior Windows & Doors	21
Roofing & Flashing.....	22
Partitions & Doors	23
Wall Finishes	24
Floor Finishes	25
Ceilings & Finishes.....	26
Conveying.....	27
Plumbing.....	28
Heating.....	29
Cooling & Ventilation.....	30
Electrical Service & Distribution	31
Lighting & Power	32
Safety Standards	33
Perimeter.....	34
BUILDING AUDIT METHODOLOGY	35
ABBREVIATIONS	37
APPENDIX	39
FLOOR PLANS	40

EXECUTIVE SUMMARY

Construction for the 9,350 square foot Aviation Building began in 1951 and the building was occupied in June 1952. The two-story addition on the east side of Johnston Laboratory was constructed by the War Research Laboratory disciplines associated with Johnston Laboratory.

In the 1970s, the Graduate School and Department of Psychology used the two-story building.

The original building was designed so that additional floors could be added. In 1991, two new floors, a partial remodel of the original building and the remodel of several adjacent laboratories in Johnston Lab were completed as the Aviation Academic Facility. The building now has an area of 19,473 gross square feet. The first and second floors are used as pool classrooms while the upper floors were used by the Department of Aerospace Engineering that has recently split into the Departments of Aviation and Aerospace Engineering.

The halls on all floors share common doors with Johnston Laboratory and some utilities are shared between the two buildings.

The building appears to be functioning as designed and has held up well over the 52 years since built. However, some building components are approaching the end of their expected life cycle and will need to be replaced over the next five to ten years. Within the next ten years the original doors, the roof, VAV rooftop air-handling unit and exhaust fans will need to be replaced. These items when completed will protect and enhance the building performance and create a satisfying environment for students, faculty, staff and visitors.

In an interview with the building coordinator, it was learned that the occupants are satisfied with the overall condition and performance of the building systems. There is concern over whether the elevators operate properly.

PROJECTS

Proposed Maintenance Projects		
Corrective Maintenance Projects	Budget	Control #
1. Replace approximately 40' of insulation on rooftop duct.	\$ 5,000	08357
2. Repair and paint plaster walls on first and second floor.	\$ 11,000	08358
Subtotal	\$ 16,000	
Building Improvements/Addition Projects		
1. Install VFD's on supply and return air fan on RTU.	\$ 9,000	08359
2. Install air-handling unit on first and second floor.	\$124,000	08360
3. Clean first and second exterior walls.	\$ 9,000	08361
4. Replace exterior wood doors, 2-double, 1 single.	\$ 7,000	08362
Subtotal	\$149,000	
Building Component Replacements expected within next 5-10 years		
1. Replace RTU air conditioning unit on roof.	\$ 88,000	08363
2. Replace the BUR roof.	\$ 52,000	08364
3. Replace the first and second floor doors.	\$ 22,000	08365
4. Replace three exhaust fans and exterior duct.	\$ 16,000	08366
5. Replace elevator cylinder seals and masc. upgrades.	\$ 30,000	08367
6. Replace first and second floor ceilings.	\$ 20,000	08368
Subtotal	\$228,000	
Total Cost for all Projects	\$393,000	
Renovation Projects in Progress or Completed since last Audit		
Corrective Maintenance Projects	Budget	Project #
1. Third and fourth floor addition	\$229,157	315-1988-507
2. Install hot water pump	\$ 7,197	9986-07323
3. ADA Restroom Modifications Johnston and Aviation	\$ 50,403	9986-6691
4. Elevator door restrictors	\$ 23,140	9986-3346
Total	\$309,897	

Minor Maintenance Projects (<\$5,000)	
Project	Request #
1. Remove birds' nest from outside air grill to second floor air-handling unit.	419773
2. Install braces on ceiling grid to support ceiling can lights.	419772
3. Repair locks on access doors to pipe chase in room 115.	419775
4. Replace ceiling tiles that are stained from water leaks.	419772
5. Install new thermostat to unit heater at front door.	419777

GENERAL BUILDING INFORMATION

Building Name and Number: Aviation Building #036

Building Address: 164 West 19th Avenue

Year of Construction: 1952

Year of Last Renovation: 1991

Building Size: *(based on data from The Office of Facilities, Planning and Development, University Space Inventory System, 9/8/04):*

Gross Square Feet: 19,473		
Net Square Feet: 17,017		Structure 2,456 S/F
Assignable Square Feet: 12,749	Mechanical/Common S/F: 4,268	

Estimated Replacement Cost: \$3,441,000 *(assigned September, 2004, by The Office of Facilities Planning and Development, in the University Space Inventory System)*

Replacement Cost per Gross Square Feet: \$176.71

Current Use: *(based on data from The Office of Facilities Planning and Development, University Space Inventory System, 9/8/04)*

Department	Department Research	General Admin	Instruction & Support	Sponsored Research	Mechanical/Common	Total
College of Math & Physical Science	0.0%	0.0%	1.4%	0.0%	0.0%	1.4%
College of Engineering	0.0%	1.8%	25.9%	4.8%	0.0%	32.5%
Academic Affairs	0.0%	0.0%	34.0%	0.0%	0.0%	34.0%
Business & Finance	7.0%	0.0%	0.0%	0.0%	0.0%	7.0%
Common Areas	0.0%	0.0%	0.0%	0.0%	20.4%	20.4%
Mechanical	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%
Toilets/Custodial	0.0%	0.0%	0.0%	0.0%	4.2%	4.2%
Total	7.0%	1.8%	61.3%	4.8%	25.1%	100.0%

Type of Construction: Reinforced Concrete and Steel Structure with Masonry Skin

Number of stories/basement: Four (4) plus half basement

Air Conditioning (Percentage): 85% *(source: The Office of Facilities Planning and Development. Auditor noted approximately 10% of the building is not treated)*

Wheel Chair Accessibility: From East entrance to corridor and elevator to all floors of the building

Number of Exit Stairways: One (1)

Number of Other Exits: Five (5)

Area Shop Responsibility: Northeast Shop

Overall Building Condition: Satisfactory *(The Office of Facilities Planning and Development, in the University Space Inventory)*

ASBESTOS SURVEY: The Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report titled "Inventory of Friable Asbestos Containing Material in Buildings of the Ohio State University (Main and Branch Campuses) and Recommendations for Corrective Action," prepared by PEI Associates and dated Sept. 1986, did not include this building in the report. Since the original building was built in 1951, any renovations should include an asbestos survey. Generally, buildings constructed after 1986

are basically asbestos free, however, in some cases the use of asbestos containing materials in floor tiles, mastics, caulking, gaskets, lab hoods, etc., may have been used. Consideration should be given to a survey of products that may potentially contain asbestos materials within the limits of the building and, if identified, should be removed during any renovation or repairs.

BUILDING SYSTEMS INFORMATION

HEATING					
Source: McCracken Power Plant System: Steam from Johnston Lab Main Steam Feed: 1" HPS to room 01M Building Heating Water: 3" room 111t					
HVAC CONTROL SYSTEM					
Pneumatic and Electric with DDC upgrade					
VENTILATION SYSTEM					
Air-handling unit with powered exhaust					
COOLING					
Building: 85% Air Conditioned 18 Window DX Units 1 RTU 1 Split System					
ELECTRIC					
Primary Source: PGN5/PGS5 Size: 1200 AMP Primary/Secondary: 208/120 Switchgear: feed from Johnston Lab to room 01M					
PLUMBING					
Water: 3" to pipe chase at 111t, 6" to fire pump room 01M Gas: none Domestic Hot Water: 1.25" DHWS, .75" DHWR from tunnel to pipe chase at 111t Compressed Air: 1/2" in room 01M					
SEWERS					
Type	4 inches	6 inches	10 inches		
Storm		4	1		
Sanitary			1		
Combined Storm/Sanitary: Yes 1 @ 10"					
METERS					
Gas: n/a Water: 3" in pipe chase at 111t Electric: in room 01M					
FIRE ALARM SYSTEMS					
Fire Alarm: main panel room 01M at front door Remote panel location: Johnston Lab Rm-107M Fire Pump @ 500 GPM in room 01M Sprinkler Valve: room 01M Limited room 01M Horns/Strobes in Hall: No Bells in Hall: Yes					
BUILDING REPORTING SYSTEMS					
Remote reporting system: <input checked="" type="checkbox"/> MDI, <input type="checkbox"/> LENEL Panel location(s): Johnston Lab Systems Monitored: <input checked="" type="checkbox"/> Fire Alarm <input type="checkbox"/> Card Access, <input type="checkbox"/> Security Alarms, <input type="checkbox"/> Environmental Alarms, <input type="checkbox"/> Elevator, <input checked="" type="checkbox"/> HVAC Data Sent to: <input type="checkbox"/> Local, <input checked="" type="checkbox"/> Department of Public Safety, <input checked="" type="checkbox"/> Service Center, <input type="checkbox"/> Key Control Other Reporting Systems: Monitor HVAC equipment to Building Automation Shop					
ELEVATORS					
Use	Manufacturer	Weight	Size	Type	Equipment/Controls
Passenger	Abell	2,500#	40" x 78"	Hydraulic	Room 111M
EMERGENCY GENERATOR					
Type	LW	Size	Location	Monitor	

NARRATIVE

History

Construction of the Aviation Building began in 1951 and was completed in June of 1952 with 9,350 square feet. The two-story addition on the east side of Johnston Laboratory was constructed by the War Research Laboratory disciplines associated with Johnston Laboratory.

In the 1970s, the Graduate School and Department of Psychology used the two-story building.

The original building was designed so that additional floors could be added. In 1991, two new floors, a partial remodel of the original building and the remodel of several adjacent laboratories in Johnston Lab were completed as the Aviation Academic Facility. The building now has an area of 19,473 gross square feet. The first and second floors are used as pool classrooms while the upper floors were used by the Department of Aerospace Engineering that has recently split into the Departments of Aviation and Aerospace Engineering.

The halls on all floors share common doors with Johnston Laboratory and some utilities are shared between the two buildings. Some of the building components are approaching the end of their expected life cycle and will need to be replaced over the next five to ten years. Within the next ten years the original doors, the roof, VAV rooftop air-handling unit and exhaust fans will need to be replaced.

Foundation

The 1951 structural components of this building consist of reinforced concrete perimeter and interior spread footers with columns and grade beam type foundation walls to the first floor reinforced concrete slab on grade. The concrete slab straddles the utility tunnel except where the partial basement in the northeast corner abuts the tunnel wall. Reinforced concrete columns and foundation walls extend to the first floor reinforced concrete slab that is supported by beams and floor joists.

Columns & Beams

Reinforced concrete columns and beams support the one-way concrete floors to the third floor (original roof). The 1990 third and fourth floor addition consists of steel columns, beams and floor joists that support the metal deck with concrete fill and the roof deck. These form the basic skeletal components of this four-story building with half basement.

There are no major signs of settlement or movement in the building foundation or structural columns and supports.

Exterior Walls

The exterior walls on the original building are brick veneer installed on brick or concrete block. The new walls are metal studs with exterior sheathing, insulation and drywall with a brick veneer. Openings in the brick for windows and entrance doors are accented with limestone or brick that form the head, sill and jambs. Ceramic brick panels are used for wall trim under windows, while cast stone is used at the sills, coping and roof trim on the addition. The exterior masonry brick is in good condition. Expansion joints were originally

installed and appear to be in good condition. The lower level brick and limestone needs to be cleaned and sealed.

Exterior Windows & Doors

The aluminum double glazed windows, installed in 1990, are of the awning or fixed types that are installed in aluminum frames with serpentine panels replacing some windows. A window wall in the east stairwell extends from the second floor to the fourth floor.

The south main entry double door has the original wood doors with glass inserts and is in fair condition. The original east stair exit door is wood with a glass window and is in fair condition. The wood doors have exceeded their life expectancy and should be replaced with aluminum doors.

Roofing & Flashing

The roof area of the building has a metal deck with insulation board and a modified roll roof installed with hot modified tar. The stairwell roof consists of steel beams and purlins with a metal deck, insulation and a copper standing seam roof. The aluminum faced modified composite counterflashing around the perimeter and the stairwell wall is in good condition. The roofs and flashings are 14 years old and only need minor repairs. Some areas of the roof have separated at the base and have formed air pockets under the roofing. The roof is approaching its life expectancy and may need to be replaced within the next five to ten years.

The drainage for the roof over the stairwell consists of a copper gutter and downspout that discharges water to the roof. The roof drainage system consists of four scuppers with downspouts that discharge storm water to a cast iron underground storm pipe.

Partitions & Wall Finishes

The original building is enclosed with concrete block, clay block or brick with a plaster finish that form interior walls in halls, rooms and stairwells. The majority of the rooms in the original building have block up to the ceiling with a plaster finish. The addition is enclosed with concrete block or metal studs and drywall that form interior walls, halls, rooms and stairwells. The partitions and walls are all in good to fair condition depending on the area. Some fine line cracks in plaster walls have occurred at openings and at various locations in the walls. The walls on the first and second floor need to be patched and painted.

Interior Doors

Most of the doors in this building are wood doors in metal frames and are in good to fair condition. Steel fire doors in steel frames are used at mechanical rooms, halls to Johnston Lab and the stairwell. The metal fire doors in this building are in good to fair condition. There are wood vestibule double doors at the main entry. Some door and/or door hardware problems are showing up in maintenance calls. The wood doors on the first and second floor are in fair condition, all need to be refinished, adjusted to close properly and hardware repaired as necessary. These doors have exceeded their expected life and should be replaced in the near future.

Floor Finishes

The original floors in this building had asbestos asphalt tiles that were removed in 1991 and replaced with a vinyl tile throughout the original building. New ceramic tile was installed in the original restrooms. The 1991 addition has vinyl tile in the halls, carpet in offices and ceramic tile in the restrooms. The basement equipment room has an exposed concrete floor. The floors throughout the building are in good condition and have been well maintained. The stairs and landings are metal framed with concrete fill with rubber treads and vinyl tile landings and are in good condition.

Ceilings & Finishes

The original ceilings in the building consisted of a suspended grid with a plaster finish or 1x1 acoustical ceiling tiles that were removed in 1991. The ceilings in remodeled and new areas of this building consist of a suspended aluminum 2x4 grid system with mineral fiber tiles. The remaining plaster ceilings are in fair condition, but need to be patched and painted. Some ceiling tiles need to be replaced where roof, pipe and/or duct condensation leaks have occurred. The pool classroom ceiling tiles have all sagged from high moisture concentrations in the rooms. Ceiling tiles with can light fixtures have sagged and are ready to fall out in places because no supports were originally installed. Ceiling tiles with can light fixtures need to be fitted with angle braces spanning the ceiling grid to support the weight of the fixtures. All of the first and second floor ceilings should be replaced within the next five years.

The partitions, doors, walls, and ceilings vary in their condition rating depending on the location in the building and what remodeling has been completed.

Conveying

There is one passenger elevator in this building. The passenger elevator consists of a cab that is moved from floor to floor by a hydraulic cylinder powered by an AC motor, hydraulic pump and control valve. The elevator controls consist of electric controls that operate the motor/pump cylinder valve, brake, solenoids, floor levelers, doors and position lights. The elevator has a speakerphone for emergency communication. The elevator meets present ADA accessibility guidelines and fire codes. The elevator was operating and maintenance records did not indicate any problems with the elevator over the past year. There were reports that a loose wire on a key operated switch caused erratic operation in the past. The elevator hydraulic seals and some operators will need to be replaced within the next five to ten years.

Plumbing

The major service systems, domestic cold and hot water, standpipe system, compressed air, sanitary and storm drainage all appeared to be in good to fair condition and functioning at this time. The building above ground sanitary waste and vent piping has cast iron and galvanized pipe with waste and vent fittings, appears to be in good condition and should hold up well. The storm drainage piping has cast iron pipe on the exterior and ties into the interior underground plumbing drainage system that has vitrified clay tile piping. The domestic cold, hot water and hot water return piping appears to have copper pipe at the service end and is in good condition. The main water supply systems at the tunnel appear to be galvanized steel pipe that will need to be replaced if water flows diminish. The domestic hot water system is connected to the central campus loop and enters the building at the shaft

above the tunnel at 111t. The compressed air piping has copper tubing and did not appear to have any problems.

Fire Protection

A 6" ductile cast iron pipe feeds the fire protection systems through victaulic-coupled steel pipe to the backflow preventor. Piping after the backflow preventor consists of victaulic-coupled steel pipe that feeds the 500 GPM fire pump, stairwell standpipes with 2.5" fire department hose connections and a wet-pipe basement sprinkler system. The wet standpipes and sprinkler systems in the building are fed from the alarm valve in room 01M. There are portable fire extinguishers located throughout the building.

Heating

Originally, a 3" HHW line fed the two-story building off the McCracken heating hot water loop in the tunnel to the pipe chase at 111t. A new pumped 2" HHW line off of the McCracken heating hot water loop fed the new third and fourth of the building after the addition was completed. However, after heating complaints a new hot water converter was installed to provide heat for the upper floors. A 1" superheated high pressure steam line was installed from Johnston Lab to feed a 200/80 Psig pressure reducing station and then an 80/10 Psig pressure reducing station that feeds the heating hot water heat exchanger in room 01M. There was no desuperheater in the line after the pressure reducing station. Low-pressure steam feeds the hot water heat exchanger that supplies wall convectors located on the outside walls at windows, a fan coil unit and unit heaters. A steam operated condensate lift station installed in room 01M moves condensate to the condensate return line back to Johnston Lab. The heating system was not operating at the time of the site visits; however, the condensate pump prime mover line was piped to the 10 Psig steam line feeding the converter. The condensate pump prime mover line is to be moved to the 80 Psig line between the reducing stations by the shop.

Cooling & Ventilation

Air Handling Units

The cooling system for the third and fourth floor consists of packaged Trane rooftop variable-air-volume air-handling unit (RTU) with a R-22 DX condenser and evaporator coils with approximately 34 tons of cooling capacity. The VAV unit returns air through a return air fan, a 35% filter, a DX cooling coil and a constant speed supply air fan with a control-air vortex damper before re-entering the building. Supply air is moved through high-pressure ducts, a VAV box and a hot water reheat coil to the room diffusers. Air is removed from the room through grills to the ceiling plenum and then to the return air duct below the unit. Electronic controls are internal to the rooftop unit, while electronic thermostats control the position of the VAV dampers. Installing variable frequency drives on the supply and return air fans would save energy and increase the efficiency of the unit by operating at a lower static pressure.

One classroom has a single zone split-system air-handling unit conditioning room 201. The Trane 6-ton R-22 DX condenser located on the roof and the air-handling unit with hot water coil located in room 201B supplies conditioned air to the classroom.

There was no central cooling system installed in the original building when built. Individual classrooms in the building use window air conditioning units with 3/4 to 1.5 tons of cooling

each. The window units have 230-volt power supplies on separate circuits and are mounted in steel frames for a secure installation.

Exhaust

Three exhaust fans located on the roof remove air from restrooms and common areas.

Electrical Service & Distribution

The McCracken substation circuits number PGN5/PGS5 feed the transformer located at Johnston Lab on the northeast side of the building. A 208/120-volt power feed from the Johnston Lab electrical pit supplies the electrical service to the Aviation Building. Switchgear located in room 01M feeds the lighting and power distribution panels located throughout the building. Panel sizes vary throughout the building depending on the load. At about 8.1 watts per square foot, the building just has an adequate power supply in most circuits. Each floor has individual circuit breaker panels for lights, receptacles and equipment. The circuit breaker panels have blank spaces to add more circuit breakers.

Lighting & Power

The building has the newer 32-watt surface and recessed fluorescent tube light fixtures throughout the building. Classrooms are also illuminated with incandescent recessed can fixtures in the ceiling tile. There are an adequate number of convenience and lab outlets throughout the building.

Safety Standards

The Aviation Building is equipped with a manual fire alarm system consisting of pull stations at exits that provide local fire annunciation from the panel in room 010M to all floors. The fire annunciation panel is monitored by a MDI panel in Johnston Lab that reports system status to the Department of Public Safety in Blankenship Hall. A remote fire annunciation panel at the south entrance also displays the system's status. A fire pump located in room 010M feeds the standpipe in this building.

There are lighted exit signs at each exit that have an emergency backup battery in each unit. Emergency lights with battery backup are located throughout the building in the corridors and in the stairwells.

Perimeter

About 95 percent of the sidewalks around the building are in good condition. Some sidewalks on the south and east side have sections with minor cracks or settlement.

Entrances to the building are well lighted, and area flood and street lighting appear to be distributed properly. The building signs are in good condition. The lighting over the walkway needs to be checked for proper operation.

BUILDING EVALUATION SUMMARY

Building Number: **#036**

Facility Name: **Aviation Building**

Year Constructed: **1952**

Building Size: **Gross Square Feet: 19,473**

Replacement Cost: **\$3,441,000***

COMPONENT RATING				
Building Component	Building Component Percentage of Total Cost**	Building Component Replacement Cost	Building Component Condition Value Multiplier	Building Component Current Value
Foundation	5.28	\$ 181,671	81%	\$ 147,154
Columns & Beams	10.38	\$ 357,135	88%	\$ 314,278
Exterior Walls	7.48	\$ 257,270	88%	\$ 226,397
Ext. Windows & Doors	3.74	\$ 128,635	87%	\$ 111,912
Roofing & Flashing	5.57	\$ 191,825	81%	\$ 155,379
Partitions & Doors	9.62	\$ 331,179	71%	\$ 235,137
Wall Finishes	4.20	\$ 144,433	75%	\$ 108,324
Floor Finishes	5.43	\$ 186,747	71%	\$ 132,590
Ceilings & Finishes	7.21	\$ 248,244	75%	\$ 186,183
Conveying	2.54	\$ 87,450	80%	\$ 69,960
Plumbing	5.74	\$ 197,465	71%	\$ 140,200
Heating	8.77	\$ 301,841	87%	\$ 262,602
Cooling & Vent.	9.03	\$ 310,870	68%	\$ 211,392
Elect. Service. & Dist.	1.56	\$ 53,597	89%	\$ 47,701
Lighting & Power	10.49	\$ 361,081	89%	\$ 321,362
Safety Standards	2.95	\$ 101,554	83%	\$ 84,290
	100.00	\$3,441,000	79%	\$2,718,884

Overall Building Condition Rating = 79%

Overall FCI (Facility Condition Index) = 11.4%***

FCI = Deferred Maintenance (\$393,000)/Replacement Cost (\$3,441,000) = 11.4%

* Replacement Cost assigned September 2004 by the Office of Facilities Planning and Development in the University Space Inventory System. Replacement cost does include the furnishings and fixed equipment allocation.

** Percent allocation of each building component was calculated from the Means Standard Construction Cost data for College Classroom Buildings.

*** Facility Condition Index is equal to [deferred maintenance]/[total replacement cost]. An excellent building is 5%. As the building reaches 16%, the building needs major attention. The goal at The Ohio State University is to have an FCI of 11% or lower.

BUILDING EVALUATION SUMMARY

Foundation		
Refer to p. 11 for Narrative		
Foundations Component Rating	<u>\$181,671</u> Component Replacement Cost	X <u>81%</u> Condition Value Multiplier
		= <u>\$147,154</u> Component Value
Footings		
Satisfactory	Interior Footings	Concrete Spread
n/a	Interior Footings/Bearing Walls	
Satisfactory	Perimeter Footings	Concrete Spread
Satisfactory	Grade Beams	foundation walls
n/a	Piles	
n/a	Caissons	
Foundation Wall Materials		
Satisfactory	Concrete cast-in-place	from basement to first floor
n/a	Concrete Block	
n/a	Stone	
n/a	Brick	
n/a	Other	
Waterproofing and Under-drain		
n/a	Coating	
n/a	Membrane	
n/a	Board	
n/a	Footer Drain Pipe	
Slab on Grade		
n/a	Plain	
Satisfactory	Reinforced	slab on grade south & west sides
Ground/Basement Floor Slab		
n/a	Plain	
Satisfactory	Reinforced	northeast corner
Special Substructures		
Satisfactory		
Satisfactory	tunnel to Johnston Lab	

Comments:

- None

BUILDING EVALUATION SUMMARY

Columns & Beams	
Refer to p. 11 for Narrative	
Columns and Beams Component Rating	$\frac{\$ 357,135}{\text{Component Replacement Cost}} \times \frac{88\%}{\text{Condition Value Multiplier}} = \frac{\$ 314,278}{\text{Component Value}}$
Columns and Beams	
Satisfactory	Reinforced concrete original building
n/a	Pre-cast concrete
Satisfactory	Steel columns and beams
n/a	Fireproofing
n/a	Wood
n/a	Other
Floor Joists	
Satisfactory	Concrete one way floor joists
Satisfactory	Steel open web
n/a	Wood
n/a	Other
Floor Decks	
Satisfactory	Concrete Slab
n/a	Pre-cast Slab
Satisfactory	Metal Deck
n/a	Wood
Roof Joists	
n/a	Concrete
Satisfactory	Steel
n/a	Wood
Pitched Roof System	
n/a	Pitch
n/a	Dormers
n/a	Steel Purlins
n/a	Wood Rafters
n/a	Fireproofing
n/a	Underlayment
n/a	Insulation
n/a	Ventilation
Flat Roof System	
Satisfactory	Slope 0.25" per foot to perimeter
n/a	Concrete Deck
n/a	Pre-cast Slab with concrete fill
	Metal Deck w/concrete fill
Satisfactory	Metal Deck w/insulation
n/a	Wood Deck
Satisfactory	Insulation

Comments:

- None

BUILDING EVALUATION SUMMARY

Exterior Walls			
Refer to p. 11 for Narrative			
Exterior Walls	\$ 257,270	88%	\$ 226,397
Component Rating	Component Replacement Cost	X Condition Value Multiplier	= Component Value
Walls			
n/a	Concrete cast-in-place		
n/a	Concrete pre-cast		
n/a	Concrete Block		
Satisfactory	Brick	[X] masonry [X] veneer	fired & glazed
Satisfactory	Veneer		limestone & cast stone trim
Satisfactory	Window/Curtain wall		at stairwell
n/a	Metal Siding		
Wall Lintels Over Openings			
n/a	Concrete pre-cast		
n/a	Concrete cast-in-place		
n/a	Limestone		
n/a	Brick Masonry		
Satisfactory	Steel		
n/a	Wood		
n/a	Other		
Wall Trim			
Satisfactory	Limestone		limestone
Satisfactory	Brick		varied colors
n/a	Granite		
n/a	Wood		
n/a	Fascia/Rake		
Satisfactory	Soffits		stucco
Finishes			
Satisfactory	Plain		
Satisfactory	Stucco		
n/a	Paint		
n/a	Parging		
n/a	Exposed Aggregate		
n/a	Drivit		
n/a	Other		
Exterior Wall Backing System			
n/a	Concrete		
Satisfactory	Concrete Block		at various walls
Satisfactory	Brick Masonry		
n/a	Ceramic Glazed Clay Tiles		
Satisfactory	Metal Studs		metal studs, insulation and sheathing
n/a	Wood Studs		

Comments:

- The 1st & 2nd floor walls behind the brick are masonry construction.
- The 3rd & 4th floor walls behind the brick are constructed of gypsum board on metal studs, 6" batt insulation and 3/4" board.

BUILDING EVALUATION SUMMARY

Exterior Windows & Doors			
Refer to p. 12 for Narrative			
Exterior Windows & Doors Component Rating	<u>\$128,635</u> Component Replacement Cost	X <u>87%</u> Condition Value Multiplier	= <u>\$111,912</u> Component Value
Window materials			
n/a	Wood		
n/a	Steel		
Satisfactory	Aluminum		window frames
n/a	PVC		
Windows type & number			
n/a	Double Hung		
Satisfactory	Awning		78 ea
n/a	Casement		
n/a	Pivoted		
n/a	Sliding		
Satisfactory	Fixed		glass windows 591 ea
Satisfactory	Other		spandrel panels 159 ea
Window glazing			
n/a	Single pane		
Satisfactory	Double pane		on all windows
Window Wall and/or Store Front			
n/a	Store Front		
Satisfactory	Vestibule		at south entrance
Satisfactory	Single pane		
n/a	Double pane		
Louvers			
n/a	Louver wall		
Satisfactory	Single louver		on north wall
Door Materials			
Attention	Wood		exit & entrance doors
Attention	Steel		at door to roof
n/a	Stainless Steel		
n/a	Aluminum		
Doors type & number			
Satisfactory	Vestibule Double		(1) wood at south entrance
n/a	Double		
Satisfactory	Single Exit		(1) steel to roof
Satisfactory	Stair Exit		(1) wood at east stair exit
n/a	Garage		
n/a	Special		
Hardware			
Satisfactory	Automatic opener		
Satisfactory	Push bar openers with closures		
n/a	Key Cards		

Comments:

- The exterior double doors need to be adjusted for proper closing clearances, have the damaged seals repaired or replaced, and install sill sweeps on all exterior doors. The exterior doors are more than 50 years old and should be replaced at this time.

BUILDING EVALUATION SUMMARY

Roofing & Flashing			
Refer to p. 12 for Narrative			
Roofing & Flashing Component Rating	<u>\$191,825</u> Component Replacement Cost	X	<u>81%</u> Condition Value Multiplier =
			<u>\$155,379</u> Component Value
Roof Covering			
n/a	Built-up	[] asphalt [] coal tar [] modified	
n/a	Built-up w/gravel	[] asphalt [] coal tar [] modified	
Attention	Modified Asphalt Roll	Styrene-Butadiene-Styrene	4,240 s/f
n/a	Asphalt Shingle		
Satisfactory	Other	copper standing seam roof over stairwell	187 s/f
Satisfactory	Other	copper canopy roof	24 s/f
n/a	Elastomeric Membrane		
Flashing			
	Copper (Satisfactory)	Galvanized (n/a)	Aluminum (Satisfactory)
	EPDM (n/a)	SS (n/a)	PVC (n/a)
n/a	Cap		
Satisfactory	Counter		copper 86 LF
Satisfactory	Counter SBS		aluminum faced 204 LF
Satisfactory	Base		Styrene-Butadiene-Styrene 225 LF
n/a	Base		
Satisfactory	Reglet in walls		34 LF
n/a	Through the wall		
n/a	Valley & Ridge		
Gravel Stop & Edge Strips			
	Stainless Steel (n/a)	Galvanized (n/a)	
	Copper (n/a)	PVC (n/a)	Aluminum (n/a)
Drainage			
Satisfactory	Gutters w/ Exterior Downspouts		copper 12 LF
Satisfactory	Exterior Downspouts		220 LF
Satisfactory	Scuppers w/o Exterior Downspouts		4 ea
n/a	Drains w/ Interior Storm Drains		
n/a	Emergency Overflow		
Parapets			
n/a	Concrete		
Satisfactory	Brick		to cap
n/a	Cast Stone		
Parapet Caps			
	Metal	SS (n/a)	Galvanized (n/a)
	Copper (n/a)	PVC (n/a)	Aluminum (n/a)
n/a	Tile		
Satisfactory	Limestone		255 LF
Roof Accessories			
n/a	Lightning Protection		
Satisfactory	Roof Curbs		
Satisfactory	Equipment Frames		
Satisfactory	Pitch Pockets		
n/a	Fall Protection		

Comments:

- Roof is 14 years old and is in good to fair condition.
- Some leaks were noted in the work orders that have been repaired.
- Some areas of the roof have separated at the base and have formed air pockets under the roofing.
- The flashings are 14 years old and need only minor repairs.

BUILDING EVALUATION SUMMARY

Partitions & Doors	
Refer to p. 12 for Narrative	
Partitions & Doors Component Rating	\$ 331,179 Component Replacement Cost
X	
71% Condition Value Multiplier	
=	
\$ 235,137 Component Value	
Partition Framing	
Satisfactory	Concrete Block/Brick
Satisfactory	Clay Tile Block
n/a	Glazed Clay Tile Block
Satisfactory	Masonry
n/a	Wood Stud
Satisfactory	Metal Stud with insulation
Special partitions and Walls	
n/a	Demountable
Satisfactory	Toilet
Satisfactory	Screen Walls
	Glass
	Gate
Wall Material	
Satisfactory	Concrete Block in stairwell
Satisfactory	Plaster
Satisfactory	Drywall on metal studs
	Glass
	Brick
	Wood Trim
	Composite Paneling
	Acoustic Panels
Satisfactory	Tile/Glazed in restrooms
Interior Doors & Frames	
Satisfactory	Met Door/Met Frame equipment room door
n/a	Wood Door/Wood Frame
Satisfactory	Wood Door/Metal Frame predominate throughout
Satisfactory	Glazing
n/a	Roll-up
	Sliding
Hardware	
	Door Knobs
Satisfactory	Door Levers
Satisfactory	Door Closures
Satisfactory	Kick/Push Plates
	Security & Detection
Satisfactory	Automatic Openers
	Fire Door Magnets

Comments:

- Maintenance records indicate that door and/or door hardware are being adjusted and/or repaired on a continuing basis.
- Many wood doors on the 1st and 2nd floor bind and do not close properly and should be replaced.

BUILDING EVALUATION SUMMARY

Wall Finishes	
Refer to p. 12 for Narrative	
Wall Finishes Component Rating	$\frac{\$144,433}{\text{Component Replacement Cost}} \times \frac{75\%}{\text{Condition Value Multiplier}} = \frac{\$108,324}{\text{Component Value}}$
Wall Finishes	
Satisfactory	Paint
n/a	Vinyl Wall Coverings
n/a	Paneling Pre-finished
n/a	Cork
n/a	Wallpaper
Satisfactory	Glazed Ceramic Tile
n/a	Granite
n/a	Brick
n/a	Wood Trim & Wainscot
n/a	Decoration
n/a	Glass
n/a	Other

Comments:

- The first and second floor walls need to be patched and painted.

BUILDING EVALUATION SUMMARY

Floor Finishes					
Refer to p. 13 for Narrative					
Floor Finishes Component Rating	<u>\$186,747</u> Component Replacement Cost	X	<u>71%</u> Condition Value Multiplier	=	<u>\$132,590</u> Component Value
Carpet					
Satisfactory	Rolled				predominate throughout offices
n/a	Tile				
Concrete Topping					
n/a	Clear Sealant				
n/a	Anti-slip				
n/a	Epoxy				
n/a	Resinous				
Resilient					
Satisfactory	Vinyl Composition Tile				
n/a	Vinyl/Plastic Tile				
n/a	Asphalt Asbestos Tile				
n/a	Linoleum Tile				
n/a	Vinyl Roll				
n/a	Slate				
Ceramic Tile					
n/a	Mosaic				
n/a	Quarry				
Satisfactory	Pavers				
Masonry					
n/a	Marble				
n/a	Granite				
n/a	Fritz				
Terrazzo					
n/a	Marble				
n/a	Granite				
Wood					
n/a	Tiles				
n/a	T&G Hardwood				
n/a	Planking				
Pedestal					
n/a	Vinyl Tiles (n/a)	Grills (n/a)	Supply Air (n/a)	Vent (n/a)	
Base Molding					
Satisfactory	Vinyl				
n/a	Wood				
n/a	Terrazzo				
Satisfactory	Ceramic Tile				restrooms

Comments:

- None

BUILDING EVALUATION SUMMARY

Ceilings & Finishes	
Refer to p. 13 for Narrative	
Ceilings & Finishes Component Rating	<u>\$248,244</u> Component Replacement Cost X <u>758%</u> Condition Value Multiplier = <u>\$186,183</u> Component Value
System Type	
Satisfactory	Exposed in equipment rooms
n/a	Applied to Structure
n/a	Suspended Stud
Satisfactory	Suspended Steel Grid supporting plaster
Satisfactory	Suspended Aluminum Grid 2x4
n/a	Suspended Sealed Grid
n/a	Suspended Concealed Spline
Materials	
Satisfactory	Drywall in several locations
Satisfactory	Plaster 1st & 2nd floor
Attention	Mineral Fiber Board predominate throughout building
n/a	Fiberglas Board
n/a	Cementitious Fiber Board
n/a	Metal Pan Tile
Finishes	
Satisfactory	Paint
Satisfactory	Pre-finished Paint
n/a	Pre-finished Vinyl
n/a	Pre-finished Fabric
Openings & Inserts	
Satisfactory	Air Distribution
Attention	Lighting Fixtures
Satisfactory	Access Panels
n/a	Sprinklers
Satisfactory	Smoke Detectors
n/a	Speakers
n/a	Skylights
Satisfactory	Other motion and light detectors

Comments:

- Some tiles are stained and damaged from water leaks and need to be replaced and repaired.
- Many of the can lighting fixtures were not supported in the lay-in ceiling and are beginning to cause the ceiling to sag. Many ceiling tiles on the 1st and 2nd floors are bowed from high moisture in the rooms and need to be replaced.

BUILDING EVALUATION SUMMARY

Conveying Refer to p. 13 for Narrative					
Conveying Component Rating	<u>\$87,450</u> Component Replacement Cost	X	<u>80%</u> Condition Value Multiplier	=	<u>\$69,960</u> Component Value
Elevator					
Satisfactory	Number				one Abell hydraulic
Satisfactory	Type				Passenger
Satisfactory	Speed				125 FPM
Satisfactory	Capacity (lbs.)				2,500 lbs.
Satisfactory	Dimensions				48"x78"
Satisfactory	Door Operation	<input checked="" type="checkbox"/> Side	<input type="checkbox"/> Center		
Satisfactory	Accessibility Standards				
Satisfactory	Fire Codes				
Lifts and Hoists					
n/a	Number				
n/a	Type				
Moving Stairs and Walks					
n/a	Number				
n/a	Type				
Conveyors					
n/a	Number				
n/a	Type				

Comments:

- The elevator is ADA compliant and meets fire codes.
- The cylinder seals and some operators will need to be replaced within the next ten years.

BUILDING EVALUATION SUMMARY

Plumbing			
Refer to p. 13 for Narrative			
Mechanical & Plumbing Component Rating	\$ 197,465 Component Replacement Cost	X	71% Condition Value Multiplier
			=
			\$ 140,200 Component Value
Services Available			
Satisfactory	Cold Water		3" domestic and 6" fire in room 01M
Satisfactory	Backflow Valve		6" fire in room 01M
Satisfactory	Hot Water		3" in room 111T
n/a	Natural Gas		
Satisfactory	Compressed Air		3/8" in room 01M
n/a	Other		
Piping & Fittings			
Satisfactory	Cast Iron		water supply, sanitary, and storm waste
n/a	Ductile Iron		
Satisfactory	Copper Pipe		domestic water piping
Satisfactory	Copper Tubing		on control air
Satisfactory	Steel		on standpipe on sprinklers
Satisfactory	Galvanized Steel		domestic water piping 1951 building
Satisfactory	Other		Vitrified Clay Tile to west
Water Heaters			
n/a	Gas		
n/a	Steam Converter/Tank		
n/a	Steam Instantaneous		
Satisfactory	Central Hot Water		1½" DHWS & ¾" HWR
Drainage			
Satisfactory	Storm Drains		4@6" CI to 10" VCT
Satisfactory	Sanitary Drainage		1@10" VCT
Satisfactory	Floor Drains		
n/a	Sewage Pumps		
n/a	Neutralization Tank		
n/a	Grease Interceptor		
Satisfactory	Sump Pump		elevator
Fixtures (Number)			
Satisfactory	Water Closets		9
Satisfactory	Urinals		3
Satisfactory	Lavatory Sinks		8
Satisfactory	Kitchen Sinks		1
Satisfactory	Service Sinks		4
n/a	Showers		
Satisfactory	Electric Water Coolers		4
Sprinkler Systems			
Satisfactory	Wet		in room 01M
n/a	Dry		in penthouse
Satisfactory	Fire Pump		in room 01M
n/a	Carbon Dioxide		
n/a	Halon		
Standpipe Systems			
Satisfactory	[X] Wet	[] Dry	
Satisfactory	Fire Hose Valve	[X] 2.5"	[] 1.25" in stairwell
n/a	Valve Cabinets		

Comments:

- The main water valve for the standpipe water piping is in room 01M.
- The main water valve for the domestic water piping is in the pipe chase at 111t.

BUILDING EVALUATION SUMMARY

Heating					
Refer to p. 14 for Narrative					
Mechanical & Heating Component Rating	\$ 301,841	X	87%	=	\$ 262,602
	Component Replacement Cost		Condition Value Multiplier		Component Value
Heat Source					
Satisfactory	McCracken Plant Steam		1" HPS & 1" CR to tunnel from Johnston Lab		
Satisfactory	McCracken Plant Hot Water		3" HWS&R 1st & 2nd		
Pressure Reducing Station					
Satisfactory	<input type="checkbox"/> 1/3-2/3	<input checked="" type="checkbox"/> Single			200/80 PSI @ 585 #/hr
Satisfactory	<input type="checkbox"/> 1/3-2/3	<input checked="" type="checkbox"/> Single			80/10 PSI @ 585 #/hr
Desuperheater					
n/a	<input type="checkbox"/> Condensate	<input type="checkbox"/> Valve	<input type="checkbox"/> Direct		<input checked="" type="checkbox"/> None
n/a	<input type="checkbox"/> Condensate Pump	<input type="checkbox"/> Other			
Condensate Return					
Satisfactory	<input type="checkbox"/> Condensate Tank	<input checked="" type="checkbox"/> Flash Tank			<input type="checkbox"/> None
Satisfactory	<input type="checkbox"/> Condensate Pump	<input checked="" type="checkbox"/> Steam Pressure Pump			
Heating System Type					
n/a	Steam				
Satisfactory	Hot Water		2.5" heating hot water 3rd & 4th		
Satisfactory	Warm Air				
System Delivery					
Satisfactory	Hot Water Hex		1991 addition 1 @ 552.2 MBH		
Satisfactory	Primary HW pumps	<input type="checkbox"/> VFD	2 @ 45-55 GPM		
Air Handling Units					
n/a	Multi-zone	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating		<input type="checkbox"/> Reheat
n/a	Dual Duct	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating		<input type="checkbox"/> Reheat
n/a	Make-up Air VAV	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating		<input type="checkbox"/> Reheat
Satisfactory	Variable Volume Air	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating		<input checked="" type="checkbox"/> Reheat
Satisfactory	Split System	<input type="checkbox"/> Preheat	<input checked="" type="checkbox"/> Heating		<input type="checkbox"/> Reheat
Air Filters					
Satisfactory	Pre-filter 35%	<input type="checkbox"/> DDAHU	<input type="checkbox"/> MUAHU	<input checked="" type="checkbox"/> VAVAHU	<input checked="" type="checkbox"/> SS
n/a	Filter 65%	<input type="checkbox"/> DDAHU	<input type="checkbox"/> MUAHU	<input type="checkbox"/> VAVAHU	<input type="checkbox"/> CAV
n/a	Filter 95%	<input type="checkbox"/> DDAHU	<input type="checkbox"/> MUAHU	<input type="checkbox"/> VAVAHU	<input type="checkbox"/> CAV
Space Equipment					
n/a	Radiators				
Satisfactory	Convectors				
Satisfactory	Unit Heaters	in equipment rooms & entrances			
Satisfactory	Reheat Coils	on VAV boxes			
n/a	Fan Coil Units				
Satisfactory	VAV Boxes				
n/a	CAV Boxes				
Satisfactory	2-Pipe Fan Coil	at entrances			
Control Type					
Satisfactory	Compressed Air				in room 01M
n/a	Variable Frequency Drive	<input type="checkbox"/> DDAHU	<input type="checkbox"/> VAV		<input type="checkbox"/> CAV
Attention	<input checked="" type="checkbox"/> Pneumatic	<input checked="" type="checkbox"/> Electric	<input checked="" type="checkbox"/> Electronic	<input checked="" type="checkbox"/> DDAHU	<input checked="" type="checkbox"/> DDC Upgrade

Comments:

- None

BUILDING EVALUATION SUMMARY

Cooling & Ventilation	
Refer to p. 14 for Narrative	
Cooling & Ventilation Component Rating	\$ 310,870 Component Replacement Cost X Condition Value Multiplier = \$ 211,392 Component Value
System/Capacity	
n/a	Central Chilled Water
n/a	Water
n/a	Glycol
Chillers Capacity/Year/Refrigerant/Manufacturer	
n/a	Centrifugal
n/a	Reciprocating
n/a	Reciprocating
n/a	Screw
Condenser Side	
Satisfactory	Type/Capacity [] CW [X] DX 33 ton & 6 ton Trane DX
Chilled Water Pumps	
n/a	Primary [] VFD Secondary [X] VFD
Chilled Water Controls	
n/a	[] Pneumatic [] Electronic [] Electric [] DDC [] DDC Monitor
Air Handling Units	
n/a	Multi-zone [] CW [] DX [] HUMID
n/a	Dual Duct [] CW [] DX [] HUMID
n/a	Make-up Air VAV [] CW [] DX [] HUMID
Satisfactory	RTU Variable Air Volume [] CW [X] DX [] HUMID
Satisfactory	Split System Constant Volume [] CW [X] DX [] HUMID
Air Handling Unit Controls	
Satisfactory	[X] Electric [X] Pneumatic [X] Electronic [] DDC [X] DDC Monitor
Additional Air Filters	
n/a	Postfilter [] Multi [] DDAHU [] MUAHU [] VAVAHU [] CAV
n/a	Type [] HEPA 95% [] Bag [] Cartridge [] Charcoal
Direct Expansion (Number)	
Satisfactory	Window units 18 ea. on 1st & 2nd floor
n/a	Thru-the-wall
n/a	Single zone
n/a	Multi zone
Distribution Boxes	
Satisfactory	VAV [] FC [X] REHEAT
n/a	CAV [] FC [] REHEAT
n/a	DUAL DUCT [] FC [] REHEAT
Room Thermostats/Box Control	
Satisfactory	[X] Electric [] Pneumatic [X] Electronic [] DDC
Control Systems	
Attention	[X] Pneumatic [X] Electric [] Electronic [] DDC [X] DDC Upgrade
Satisfactory	Compressed Air in room 01M
n/a	Variable Frequency Drive [] DDAHU [] VAV [] CAV
Fans	
Satisfactory	Exhaust equipment 1 toilet, 2 ventilation
Satisfactory	Recirculating 1 RA fan

Comments:

- The VAV RTU is 14 years old and will need to be replaced in the next five to ten years.

BUILDING EVALUATION SUMMARY

Electrical Service & Distribution					
Refer to p. 15 for Narrative					
Electrical Service & Distribution Component Rating	<u>\$ 53,597</u> Component Replacement Cost	X	<u>89%</u> Condition Value Multiplier	=	<u>\$ 47,701</u> Component Value
Service					
Substation	<input type="checkbox"/> Buckeye		<input checked="" type="checkbox"/> McCracken Power Plant		<input type="checkbox"/> AEP
Primary Voltage	<input checked="" type="checkbox"/> 13,200 Volts		<input type="checkbox"/> _____ Volts		
Switch Gear Circuit No.	PGN5/PGS5		to Johnston Lab		
Transformer					
Manufacturer	Type	KVA	Secondary/Voltages	Room	
CH	DRY	1 ea 1,000	208/120	Johnston Lab	
Distribution System					
Motor Control Center (MCC)					
Panel board	<input type="checkbox"/> Fused	<input type="checkbox"/> Circuit Breakers			
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input type="checkbox"/> 208/3	<input type="checkbox"/> 240/1	
Amperage	<input type="checkbox"/> 1600A	<input type="checkbox"/> 800A	<input type="checkbox"/> 600A	<input type="checkbox"/> 400A	<input type="checkbox"/> 200A
Lighting & Power Room 010M					
Panel board	<input checked="" type="checkbox"/> Fused	<input checked="" type="checkbox"/> Circuit Breakers			
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input checked="" type="checkbox"/> 208/3	<input type="checkbox"/> 240/1	
Amperage	<input checked="" type="checkbox"/> 1000A	<input type="checkbox"/> 400A	<input type="checkbox"/> 250A	<input checked="" type="checkbox"/> 200A	<input checked="" type="checkbox"/> 150A <input checked="" type="checkbox"/> 100A
Building Power Room 010M					
Panel board	<input checked="" type="checkbox"/> Fused	<input checked="" type="checkbox"/> Circuit Breakers			
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input checked="" type="checkbox"/> 208/3	<input type="checkbox"/> 240/1	
Amperage	<input type="checkbox"/> 1000A	<input type="checkbox"/> 400A	<input type="checkbox"/> 250A	<input checked="" type="checkbox"/> 200A	<input checked="" type="checkbox"/> 150A <input checked="" type="checkbox"/> 100A
Isolated Ground Power Room					
Panel board	<input type="checkbox"/> Fused	<input type="checkbox"/> Circuit Breakers			
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input type="checkbox"/> 208/3	<input type="checkbox"/> 240/1	
Amperage	<input type="checkbox"/> 400A	<input type="checkbox"/> 250A	<input type="checkbox"/> 200A	<input type="checkbox"/> 150A	<input type="checkbox"/> 100A
Conduit and wire					
Conduit	<input checked="" type="checkbox"/> Steel	<input type="checkbox"/> Aluminum	<input type="checkbox"/> PVC	<input checked="" type="checkbox"/> Flexible	
Conductor	<input checked="" type="checkbox"/> Copper	<input type="checkbox"/> Aluminum	<input type="checkbox"/> MIT		
Wire	<input checked="" type="checkbox"/> PVC Cover	<input type="checkbox"/> Romex	<input type="checkbox"/> Armored Cable(BX)		
Emergency System					
<input type="checkbox"/> Emergency Panel Room					
<input type="checkbox"/> UPS Room					
Emergency Generator					

Comments:

- None

BUILDING EVALUATION SUMMARY

Lighting & Power					
Refer to p. 15 for Narrative					
Electrical Lighting & Power Component Rating	$\$ 361,081$ <small>Component Replacement Cost</small>	X	89% <small>Condition Value Multiplier</small>	=	$\$ 321,362$ <small>Component Value</small>
Lighting (lamp type)					
n/a	Fluorescent 40 watt				
Satisfactory	Fluorescent 32 watt				
n/a	Fluorescent Can				
Satisfactory	Incandescent				
n/a	HID <input type="checkbox"/> Mercury <input type="checkbox"/> HPS <input type="checkbox"/> Metal Halide				
n/a	Low Voltage (12V)				
Lighting Levels					
Satisfactory	Halls				
Satisfactory	Rooms				
Satisfactory	Mechanical Rooms				
Fixture Condition					
Satisfactory	Fixtures				
Satisfactory	Bulbs				
Satisfactory	Fixture Lens				
Receptacles & Switches					
Satisfactory	Wall Outlet 20A				
Satisfactory	GFIC Breakers				
Satisfactory	Switches				
Satisfactory	Cover Plates				
Special					
n/a	Lightning Protection				
Satisfactory	Communication <input checked="" type="checkbox"/> Clock <input type="checkbox"/> Public Address <input checked="" type="checkbox"/> Bells				
Satisfactory	Alarm <input checked="" type="checkbox"/> Fire <input type="checkbox"/> Security				
Satisfactory	Telecommunication <input checked="" type="checkbox"/> Phones <input checked="" type="checkbox"/> Data <input type="checkbox"/> Cable TV				
Satisfactory	Communication Panel: <input checked="" type="checkbox"/> MDI <input type="checkbox"/> LENEL <input checked="" type="checkbox"/> DDC				
Satisfactory	To: <input type="checkbox"/> Local <input checked="" type="checkbox"/> Building Automation Shop				
Satisfactory	Data Systems				
Satisfactory	Fiber Optics				
n/a	Security				
n/a	UPS circuit back-up				

Comments:

- None

BUILDING EVALUATION SUMMARY

Safety Standards	
Refer to p. 15 for Narrative	
Safety Standards Component Rating	$\frac{\$101,554}{\text{Component Replacement Cost}} \times \frac{83\%}{\text{Condition Value Multiplier}} = \frac{\$84,290}{\text{Component Value}}$
Exits – Stair Construction	
n/a	Concrete
Satisfactory	Steel with concrete fill
Satisfactory	Number of Exit Stairs 1
Satisfactory	Number of Other Exits 5
Fire Rating	
	Construction Type <input type="checkbox"/> I <input type="checkbox"/> II <input checked="" type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> V <input type="checkbox"/> VI
	Building Height 62 ft., 4 stories with half basement
Extinguishing Systems	
Satisfactory	Portable
Satisfactory	Standpipe in stairwell
n/a	Valve Cabinets
Satisfactory	Sprinklers limited to basement
n/a	Gas Suppression
Detection & Alarm Systems	
Satisfactory	Pull Stations
Satisfactory	Bells
n/a	Horns
n/a	Strobes
Satisfactory	Annunciator Panel room 010M with remote panel at entrance
Satisfactory	Smoke Detectors
n/a	Halls
Satisfactory	Elevators
n/a	Rooms
n/a	Equip Rooms
Satisfactory	Ducts
Building Reporting Systems	
Satisfactory	Remote Panel: <input checked="" type="checkbox"/> MDI <input type="checkbox"/> LENEL
Satisfactory	To: <input checked="" type="checkbox"/> Service Center <input checked="" type="checkbox"/> Department of Public Safety
Satisfactory	To: <input type="checkbox"/> Local <input type="checkbox"/> Key Control
Lighting Systems	
Satisfactory	Exit Signs <input checked="" type="checkbox"/> BATTERY <input type="checkbox"/> EMC
Satisfactory	Exit Lighting <input checked="" type="checkbox"/> BATTERY <input type="checkbox"/> EMC
Satisfactory	Emergency Lighting <input checked="" type="checkbox"/> BATTERY <input type="checkbox"/> EMC
n/a	Emergency Generator
n/a	Lightning Protection

Comments:

- None

BUILDING EVALUATION SUMMARY

Perimeter	
Refer to p. 15 for Narrative	
Building Access	
Satisfactory	Driveway
n/a	Parking Lot
n/a	Loading Dock
Sidewalks east and north side has brick inlays	
Satisfactory	Front south side
Satisfactory	Side east side
n/a	Rear
Patio east side with brick inlays	
n/a	Front
n/a	Sides
n/a	Rear
Steps	
Satisfactory	Front
n/a	Side
n/a	Rear
n/a	Ramp
Lawn and Landscaping	
Satisfactory	Lawn
Satisfactory	Shrubs
Satisfactory	Trees
n/a	Undesirable Insect
Satisfactory	Bedding Material
n/a	Watering System
General Site Information	
Satisfactory	Signage
Satisfactory	Address Identification
n/a	Security Lights
Satisfactory	Street Lights
Satisfactory	Drainage
Satisfactory	Storm Drains
n/a	Snow Melt System

Comments:

- None

BUILDING AUDIT METHODOLOGY

To provide a building inventory, including maintenance deficiencies that currently exist, for the 136 OSU buildings audited that the Department of Physical Facilities has fiscal responsibility for. These audits will be used to establish repair and renovation projects, to prepare budget cost estimates for these projects for determining overall levels of required maintenance funding.

- 1) **BUILDING AUDIT APPROACH.** A five-step procedure is used to meet the program objectives:
 - a) Collect historic workorder and drawing data on each building.
 - b) Interview building coordinator and shop personal.
 - c) Perform an exterior and interior building inspection.
 - d) Complete building evaluation forms.
 - e) Prepare budget cost estimates for deferred maintenance and building improvement projects.
 - f) Issue written report for hard copy and web page distribution.
- 2) **DATA ORGANIZATION**

The data collected is stored by hard copy with field notes in a building file established for each building. The audit report costs data is stored in a projects database that allows retrieval of specific data as needed. The "Building Evaluation" forms contain ratings for the condition of each building component and a description of any deficiencies for those components. The "Building Information" sheets provide data on the utilities to the buildings and the type of building systems found in each building.
- 3) **COST ESTIMATES**

Costs are for budgeting purposes only and are based on the Means Standard Construction Cost data, auditor experience, industry sources and OSU project cost data. Costs are reported current to the year of the audit. The building component values assigned in the "Building Evaluation" forms are not cost estimates. These values are calculated from the replacement cost provided by Facilities Planning and Development for each OSU building. The building replacement cost is allocated to each building component to provide an estimated value for each component. Project cost estimates will vary from the building component values in most situations because of scope of work, demolition and removal, material handling and site limitations that occur in building component replacement projects.
- 4) **DATA USAGE**

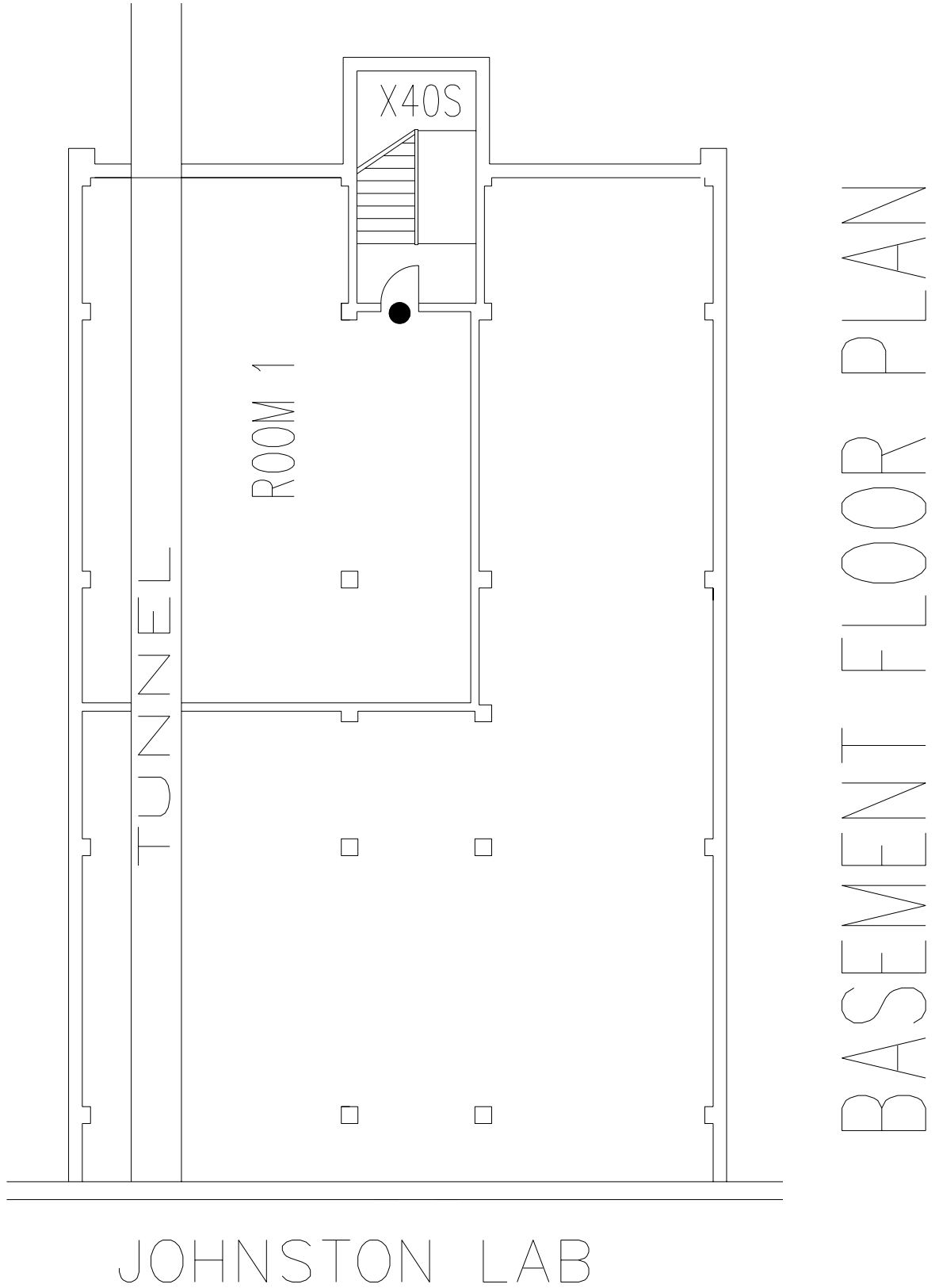
Repair and Renovation Projects provided to assist in the budgeting process for the Department of Physical Facilities. Building Evaluations provided to give a numeric rating for each building on campus quantifying its percentage of deficiency.
- 5) **LIMITATIONS**
 - a) All inspections are visual and do not include physical tests, instrument measurements, sampling, or monitoring.
 - b) Only random typical offices or laboratories are entered. Typical spaces are deemed to be representative of average conditions throughout each building.
 - c) The scope of the analysis does not include complete OSHA, energy, or physically impaired ADA access study. Buildings and components are inspected for condition and general safety requirements rather than specialized code conformance.
 - d) It is assumed that the State of Ohio Division of Factory and Building Inspection at the time of construction approved the buildings inspected. The recommendations listed in the reports are not an attempt to bring these existing buildings up to present-day code standards. Rather, the intent is to restore components to original conditions and to upgrade the buildings in a reasonable manner in regard to occupant safety.
 - e) Cost estimates are in current year dollars and include contractor mark-ups, construction administration costs, and architectural/engineering costs where applicable. Escalation factors must be applied for future work. Combining of projects should serve to decrease costs. These estimates are strictly for purposes of budgeting, and final pricing will be required when the specific scope of work for the project is defined.
 - f) The building inspections are defined as follows:
 - i) Includes:
 - (1) General repainting and redecorating.
 - (2) Replacement of building system components.
 - (3) Ongoing maintenance, replacement and renovation projects.
 - (4) Exterior building walls and attached items.
 - (5) Sidewalks and driveways to all entries and ramps outside the buildings.
 - (6) The program needs of the using department are assumed satisfied, unless specified.
 - ii) Excludes:
 - (1) Blinds, drapes, light bulbs, and movable furniture.
 - (2) Fixed equipment inside the buildings that is installed and maintained by a specific academic department or using agency.
 - (3) Utility lines supplying the buildings.
 - iii) No consideration has been given to anticipate any changes in current occupant use or space needs.

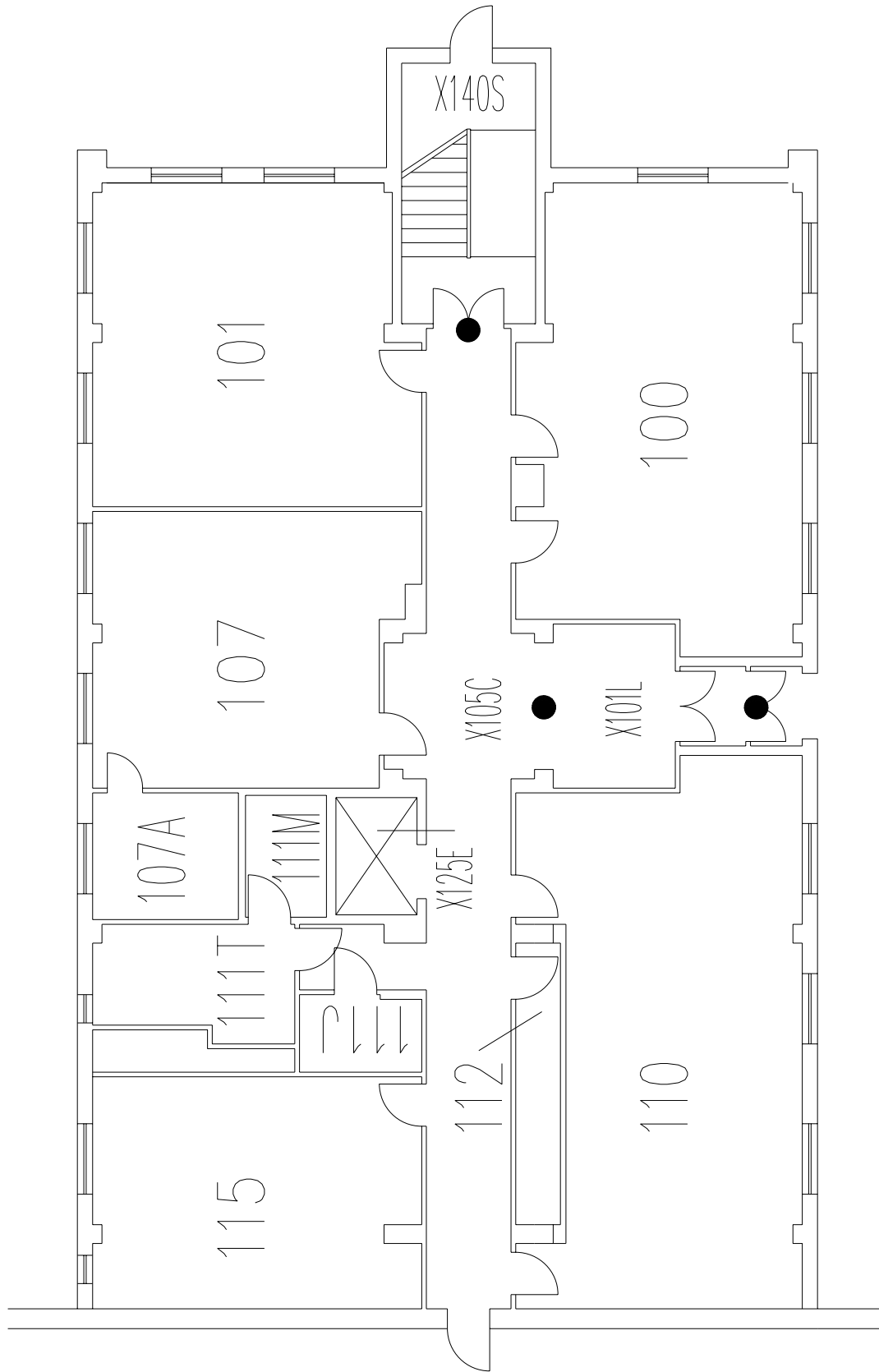
ABBREVIATIONS

A/C	Air Conditioning
AHU	Air Handling Unit
ATT	Attention
BLDG	Building
BUR	Built Up Roof
CAV	Constant Air Volume
COND	Condensate Water
DDAHU	Dual Duct Air Handling Unit
DDHV	Dual Duct High Velocity
DHWH	Domestic Hot Water Heater
DHWR	Domestic Hot Water Return
DHWS	Domestic Hot Water Supply
DHWT	Domestic Hot Water Tank
DX	Direct Expansion Air Conditioner
EWC	Electric Water Cooler
FPM	Feet Per Minute
GPM	Gallons Per Minute
HID	High Intensity Discharge Light
HPS	High Pressure Steam (125 Psi)
HVAC	Heating, Ventilating and Air Conditioning
KV	Kilovolts
KVA	Kilovolt Amps
KW	Kilowatts
LC	Liquid Cooled
LF	Lineal Feet
LPS	Low Pressure Steam (15 Psi)
MCC	Motor Control Center
MPS	Medium Pressure Steam (50 Psi)
MZ	Multi-Zone
MZCV	Multi-Zone Constant Volume Air Handling
N/A	Not Applicable
PSI	Pounds per Square Inch
RM	Room
RTU	Roof Top Unit (Heating or A/C)
S/P	Stand Pipe
SAT	Satisfactory
SF	Square Feet
SR	Steam Return Line
SS	Steam Supply Line
SY	Square Yards
TR	Terminal Reheat
V	Volts
VAV	Variable Air Volume

Reduced Scale Building Floor Plans

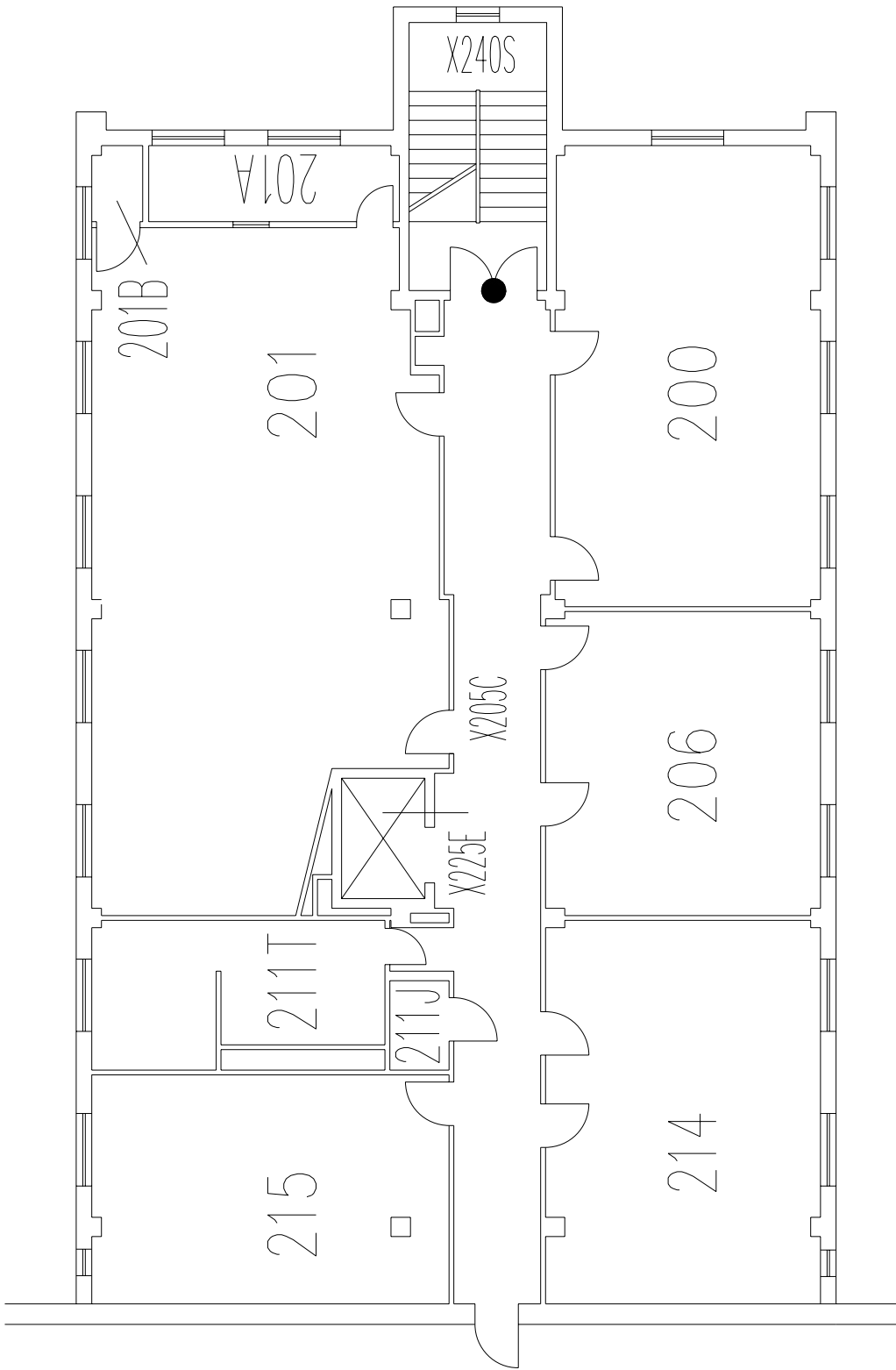
FLOOR PLANS





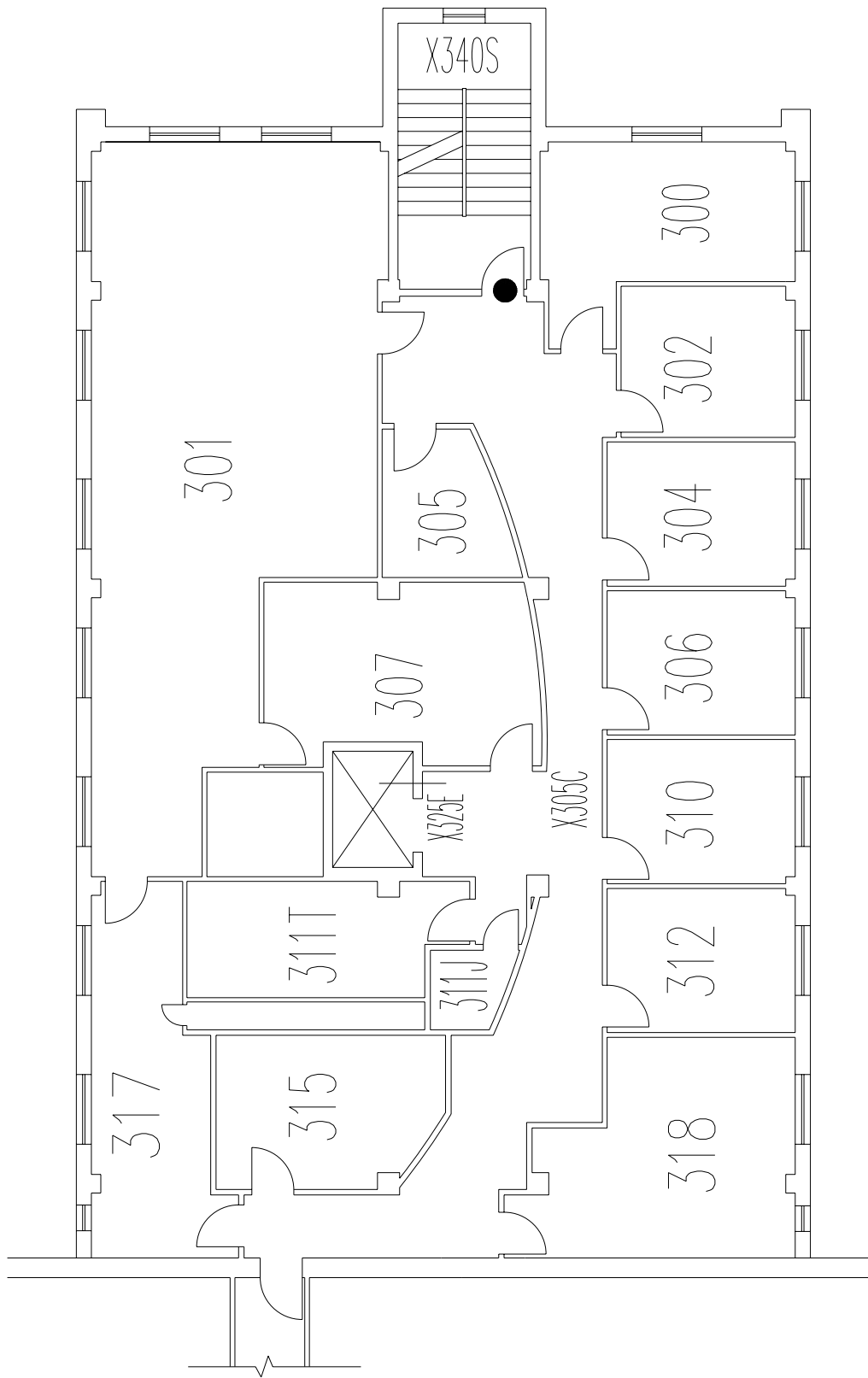
JOHNSTON LAB

FIRST FLOOR PLAN



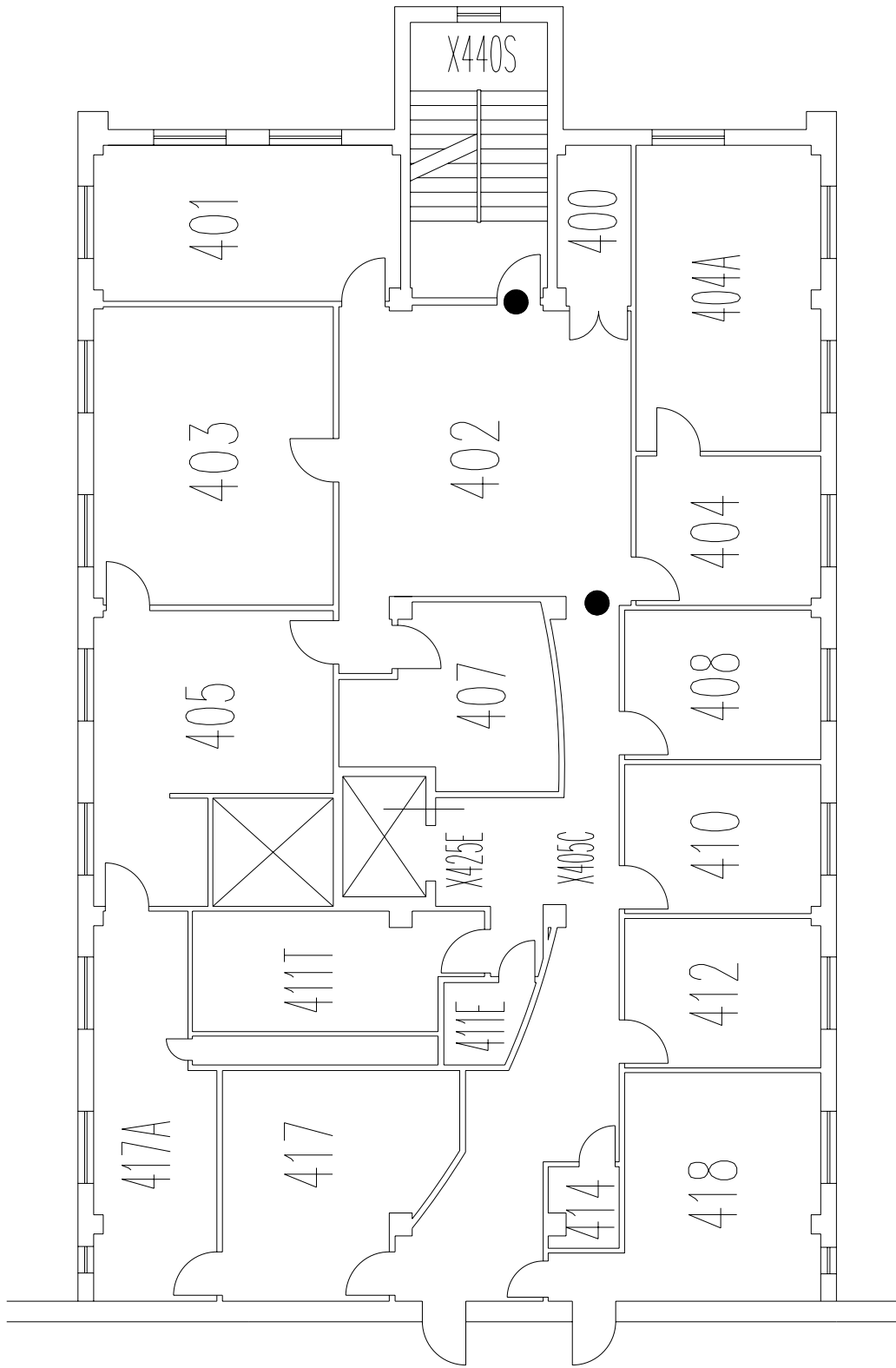
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SECOND FLOOR PLAN



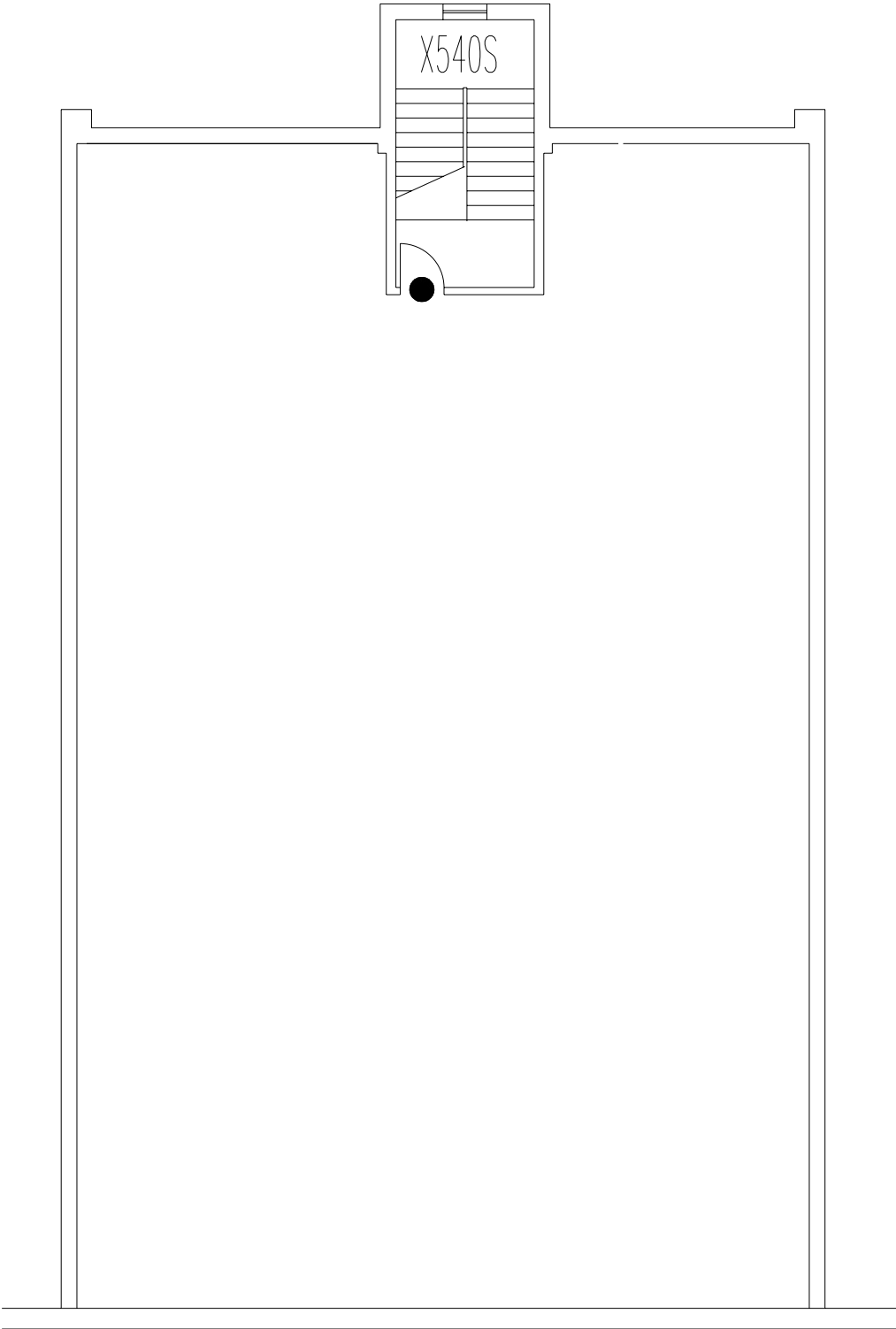
THIRD FLOOR PLAN

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FOURTH FLOOR PLAN



FIFTH FLOOR PLAN

JOHNSTON LAB