

FACILITY AUDIT REPORT  
BRICKER HALL, Bldg 001  
JANUARY 31, 1994

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**EXECUTIVE SUMMARY AND PROJECT LIST FOR BRICKER HALL**

While Bricker Hall has never had a complete renovation in its 70-year life, there have been several large-scale remodeling projects performed in the building. Virtually every space in the building has been renovated within the last 35 years. As a result, finishes are generally in good condition but, as is typical with this type of piecemeal renovation, the mechanical systems require attention. The roof is approaching the end of its life expectancy and should be replaced in the next five to ten years. The windows are original and should be replaced. The hot water heating and domestic plumbing systems require updating/replacement. The electrical system should be upgraded and all remaining original wiring should be replaced. The HVAC system consists of a series of independent systems of varying ages and reliability. Two projects have already been proposed to provide the building with a centralized system. A funded project is underway to replace one of the two elevators.

**PROPOSED MAINTENANCE PROJECTS:**

<b>A. Corrective Maintenance Projects:</b>	<b>Control #</b>	
1. Renovate restrooms/replace domestic plumbing system.....	\$241,300	2174
2. Install central chilled water system.....	500,000	1083 *
3. Mechanical renovation phase II.....	660,000	1688 *
4. Clean and seal exterior masonry.....	30,000	2175
5. Upgrade restroom fixtures.....	4,800	1471 **
<b>Sub Total</b>	<b>\$1,436,100</b>	
<b>B. Building Improvement/Addition Project:</b>		
1. Replace and improve building electrical distribution system.....	\$108,200	2176
2. Replace windows.....	140,800	2177
3. Modernize exit, emergency lighting and fire alarm system.....	153,300	2178
<b>Sub Total</b>	<b>\$402,300</b>	
<b>C. Projected (over the next 5 yrs) Projects:</b>		
1. Replace perimeter copper batten roof, gutters, composition roofing.....	\$364,800	2179
<b>Sub Total</b>	<b>\$364,800</b>	
<b>Total cost for estimated projects =</b>	<b>\$2,203,200</b>	

\* These projects are currently on our departmental project list as proposed.  
 \*\*Current project - scope is also included in the proposed general renovation of the building plumbing system.

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GENERAL BUILDING INFORMATION

BRICKER HALL #001

BUILDING ADDRESS: 190 N. OVAL DRIVE

GROSS SQ. FT.: 73,652

NET ASSIGNABLE SQ. FT.: 40,739

MECHANICAL/CUSTODIAL AREA SQ. FT.: 7,332

YEAR OF CONSTRUCTION: 1924

YEAR OF LAST RENOVATION: THERE HAVE BEEN SEVERAL PARTIAL BUT NO COMPLETE RENOVATIONS-THE LAST RENOVATION OCCURRED IN 1976-7

NUMBER OF STORIES/BASEMENT: 3 STORIES AND A BASEMENT

AIR CONDITIONING (Percentage): 85%

CURRENT USE: ADMINISTRATIVE OFFICES AND FACULTY OFFICES

TYPE OF CONSTRUCTION: REINFORCED CONCRETE FRAME WITH MASONRY VENEER

ESTIMATED REPLACEMENT COST: \$9,696,000 \*

WHEELCHAIR ACCESSIBILITY: THERE IS A RAMP AT THE NORTHWEST ENTRANCE TO THE BUILDING. ONE ELEVATOR ACCESSES THE BASEMENT AND THE FIRST FLOOR AND THE OTHER ACCESSES THE UPPER THREE FLOORS. THE ELEVATOR THAT ACCESSES THE BASEMENT WILL NOT LEVEL AT THE LANDINGS AND IS TOO SMALL FOR WHEELCHAIRS

OVERALL BUILDING CONDITION: SATISFACTORY\*\*

NUMBER OF EXIT STAIRWAYS: 2

\* Replacement Cost assigned June 1993 by The Office of Campus Planning and Space Utilization.

\*\* Office of Campus Planning and Space Utilization C-1 Report Condition Code.

**BUILDING SYSTEMS INFORMATION**

BRICKER HALL #001

**HEATING:**

Source POWER PLANT

Type Heating System HOT WATER AND ELECTRIC

Steam (Line size, valve location) N/A

Building Htg Water (line size, valve location) 6", RM 40M

**VENTILATION SYSTEM:**

VARIED - VAV, TERMINAL REHEATS, THRU-WALLS, FAN COILS AND WINDOW A/C

**COOLING:**

Bldg % 85 Chillers 4 RECIPROCATING CHILLERS

Window Units 12 Thru-the-wall 7 Direct exp. units 16

**HVAC CONTROL SYSTEM:**

JC-80 START/STOP OF SYSTEMS WITH TEMPERATURE MONITORING

**ELECTRIC:** Source Size(KVA) Primary/Secondary Switchgear & Main Disc. (Rm)

1. BUCKEYE PGN9/PNS3 500 13,200/(208/120) DERBY HALL RM 160M

**PLUMBING:**

Water (size, valve location) 4", RM 40M

Gas (size, valve location) N/A

Domestic Hot Water (size, valve location) 2" SUPPLY, 1" RETURN RM 40M

Compressed Air (size, location) 1", RM 40M

**SEWERS:**

Storm        Sanitary        Combination 12 @ 4", 2 @ 6", 1 @ 10"

**METERS:**

Gas (size, location) N/A

Water (size, location) N/A

Electric (size, location) N/A, DERBY HALL TRANSFORMER ROOM - 160M

**ALARM SYSTEMS:**

Fire Alarm YES Panel Location RM 59

Fire Pump NO Pump Location N/A

Sprinklers NO Panel Location N/A

Other Alarms SEVERAL SECURITY SYSTEMS IN THE BUILDING

**ELEVATORS:**

Number 2 Type (passenger, freight) PASSENGER

Manufacturer OTIS Size 39" X 51", 54" X 78"

**EMERGENCY GENERATOR:** Size N/A Location N/A

**KEY BOX LOCATION:** NORTHEAST CORNER OF THE BASEMENT BY THE EAST STAIRWAY

**ASBESTOS SURVEY (1986):** PIPE INSULATION THROUGHOUT THE BUILDING.

## BRICKER HALL NARRATIVE

### HISTORY

Bricker Hall was completed in 1924. It originally housed the administrative offices of the University President, as it still does, the Registrar's Office and the Faculty Club. In 1940, the third floor space housing the Faculty Club was remodeled for office use. The center of the third floor was open to the second floor until 1960, when a floor was constructed in this area. The skylights above this area were replaced with a copper roof in 1949. The building has had several partial renovations over its history and the finishes and electrical systems have been updated in virtually every space within the last 25 years. The building now houses University administrative and faculty offices. Facility use by room category is 78% office, 15% mechanical, custodial and toilet, and 7% miscellaneous uses.

### PRIMARY SYSTEMS

Bricker Hall is a three-story building with a structure composed of steel I-beam columns supporting reinforced concrete floors. The I-beams are encased in concrete. The exterior walls are brick and limestone.

The roof consists of steel trusses, wood rafters, and a wood tongue and groove deck. The roof is covered with copper batten and standing seam roofing. The structure of the building appears to be sound and no problems were noted. The copper roofing around the perimeter of the building is original. A standing seam copper roof was installed in 1949 in place of the skylights. The perimeter roofing has a nearly vertical roof surface facing the interior roof sections. These walls are covered with composition roofing that is in poor condition. The gutters surrounding the roof are composed of built-up roofing. There were a few signs of past leaks. There was no evidence of major roofing problems at this time although the roof is at the end of its life expectancy. A roof replacement project should be scheduled for the perimeter roof, gutters and composition roofing within the next five to ten years.

The exterior brick and limestone should be cleaned and sealed. The original windows are still in place. They are not energy efficient, have exceeded their life expectancy and are maintenance-intensive. They should be replaced. The exterior doors are in good condition.

### SECONDARY SYSTEMS

The original interior partitions are plastered structural tile or concrete. Over the years, concrete block and wooden or metal stud walls with drywall have been added. Floor finishes consist of vinyl tile, carpeting, terrazzo and ceramic tile. Most of the ceilings consist of suspended acoustical tiles. Plaster ceilings remain in the lobbies on the first and second floors. Interior finishes are generally in good condition.

### SERVICE SYSTEMS

The building has two elevators. A small elevator with a gate at the east end of the building is used to provide access to the basement. The elevator will not level at the first floor landing and can not accommodate wheelchairs. A larger elevator at the west side of the building does not access the basement. The Department of Physical Facilities has completed design work for a funded project to replace the west elevator with a new elevator capable of accessing all floors in the

building. The old elevator to the east will be removed from service when the new elevator is completed.

The building is served by 20 separate HVAC systems, thru-wall units and window air conditioners. There are four water chillers in the building that are among the oldest systems. Distribution systems include fan coil systems, single zone systems and terminal reheat systems featuring hot water or electric reheat coils. There are also several split systems in the building. Most systems are over 20 years old although some are as new as six months old. The large number of systems complicates control and maintenance of the building HVAC environment. Building occupants and maintenance personnel all commented that the HVAC systems in the building were the greatest source of maintenance problems in the facility.

The Department of Physical Facilities has proposed a project to provide a single central air conditioning system in two phases. An additional chiller is currently being installed in Dulles Hall to provide more chilled water to a loop that will be capable of delivering chilled water to Bricker Hall and several other buildings along 17th Avenue. The proposed projects would phase installation of centralized air handling units and a new air distribution system to the building. A terminal reheat system is proposed for the building. The projects will also replace the existing hot water heating system.

Building heat is supplied by a heating hot water radiation system, thru-wall units, and the terminal reheat systems. Most of the system is original and poorly controlled. The original hot water heating system has exceeded its life expectancy and requires replacement.

The plumbing distribution system is original, as are most fixtures in the original restrooms, and has reached the end of its useful life. Occupants complained that brown water often comes out of fixtures. The restrooms require new fixtures and the remaining supply system should be replaced along with the complete renovation of the original restroom finishes on the first and third floors. The Department of Physical Facilities has proposed a small project to replace the domestic tank-type water closets in the women's third floor restroom with institutional fixtures. The tank-type water closets are not as reliable as flush-valve fixtures.

#### ELECTRICITY

Electrical power is provided by a 500 KVA transformer located at Derby Hall. Maximum utilization was calculated to be approximately 64%. Bricker Hall is supplied with 1600 amps, 208/120 volt secondary current.

Much of the building has been rewired with installation of fluorescent lights and additional circuits that have been provided in the various renovations. Some of the original cloth-covered wiring still remains in the building. Most of the electrical panels are filled leaving no room for additional circuits. The remaining original wiring should be removed and additional distribution capacity should be installed concurrent with any major HVAC projects.

#### SAFETY STANDARDS

The building is equipped with lighted exit signs, portable fire extinguishers, and a standpipe system with firehose cabinets. The building exit lighting, fire alarm and emergency lighting systems should be upgraded when the electrical system is upgraded. An annunciator is located in the basement. A concrete ramp has been constructed at the northwest entrance to accommodate wheelchairs.

## ASBESTOS

The Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report: Inventory of Friable Asbestos-Containing Materials in Buildings of the Ohio State University (Main and Branch Campuses) and Recommendations for Corrective Action by PEI Associates, September 1986, identifies asbestos containing materials in pipe insulation throughout the building. The brown coat below the finish white plaster coat throughout the building contains asbestos.

## BUILDING PERIMETER

There is no loading dock or driveway to this building. The sidewalks at the south side of the building are in poor condition and require replacement. The sidewalks and curbs along the north side of the building also require attention. There are mature trees on the north and south sides of the building. The security lights on the building exterior are all working and building entrances and approaches are well lit and unobscured.

**MAINTENANCE PROJECTS (LESS THAN \$5000)**

1. Replace sidewalks at north and south sides of the building  
Repair curb on north side of building.  
Work order # 01-5063-006927-51
2. Repair plaster and paint northeast stairway.  
Work order # 01-5064-094081-71
3. Install exhaust fan in women's first floor restroom.  
Work order # 01-5064-101412-65

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**BUILDING EVALUATION SUMMARY**

**I. BUILDING INFORMATION**

FAC # 001 FACILITY NAME: BRICKER HALL  
 DATE: 1/20/94 INSPECTOR: JAMES P. HERTENSTEIN  
 YEAR CONSTRUCTED: 1924  
 GROSS SQ FT: 73,652 NET SQ FT: 48,071  
 REPLACEMENT COST \$ 9,696,000 \*

**II. COMPONENT RATING**

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST **	BUILDING COMPONENT REPLACEMENT COST	CONDITION VALUE MULTIPLIER FOR BLDG. COMPONENT	BUILDING COMPONENT CURRENT VALUE
Foundation	4.3	416,928	.77	321,035
Columns and Beams	15.5	1,502,880	.77	1,157,218
Exterior Walls	9.2	892,032	.77	686,865
Windows & Doors	4.5	436,320	.53	231,250
Roofing	3.0	290,880	.74	215,251
Partitions & Drs.	7.6	736,896	.89	655,837
Wall Finishes	2.9	281,184	.82	230,571
Floor Finishes	5.6	542,976	.85	461,530
Ceilings & Finish	7.9	765,984	.77	589,808
Conveying	1.8	174,528	.69	120,424
Plumbing	9.1	882,336	.53	467,638
Heating	9.7	940,512	.53	498,471
Cooling & Vent.	5.4	523,584	.68	356,037
Elec. Ser. & Dist	1.1	106,656	.90	95,990
Lighting & Power	11.8	1,144,128	.64	732,242
Safety Standards	.6	58,176	.70	40,723
TOTALS	100.00	9,696,000		6,860,890

**Overall Building Rating = 70%**

\* Replacement Cost assigned September 1991 by The Office of Campus Planning and Space Utilization without the furnishings and fixed equipment allocation.

\*\* Percent allocation of each building component is calculated from The Means Standard Construction Cost data for College Classroom Buildings.



**COLUMNS AND BEAMS**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

**a. Columns and Beams:**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Concrete-in-place _____	[ ]	[X]	[ ]
Precast Concrete _____	[X]	[ ]	[ ]
Steel <u>STEEL I-BEAMS ARE ENCASED IN CONCRETE</u>	[ ]	[X]	[ ]
Steel Fireproofing <u>CONCRETE ACTS A FIREPROOFING FOR STEEL</u>	[ ]	[X]	[ ]
Wood <u>JACKPOSTS UNDER THE VALLEY RAFTERS</u>	[ ]	[X]	[ ]
Other _____	[X]	[ ]	[ ]

**b. Floors:**

Concrete Slab <u>PREDOMINANT</u>	[ ]	[X]	[ ]
Precast Slab <u>6" SLABS WERE USED TO FILL THE ATRIUM AREA</u>	[ ]	[X]	[ ]
Metal Deck _____	[X]	[ ]	[ ]
Metal Deck w/concrete fill _____	[X]	[ ]	[ ]
Wood _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**c. Roof System:**

Flat _____	[X]	[ ]	[ ]
Pitched _____	[ ]	[X]	[ ]
Concrete _____	[X]	[ ]	[ ]
Steel <u>TRUSSES AND BEAMS</u>	[ ]	[X]	[ ]
Wood <u>RAFTERS AND DECKING</u>	[ ]	[X]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THE STRUCTURE APPEARS SOUND. THERE HAS BEEN SOME MINOR DETERIORATION FROM SCATTERED LEAKS TO THE WOODEN SUPERSTRUCTURE OF THE ROOF OVER THE YEARS. NO SERIOUS STRUCTURAL PROBLEMS ARE INDICATED AT THIS TIME. THE DECKING AND RAFTERS OVERALL ARE IN GOOD CONDITION.

**C. COMPONENT RATING:**    (\$1,503,000)    (77 %) = \$1,157,000  
    Possible    Condition    Component  
    Value        Value Multiplier    Value

**EXTERIOR WALLS**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

<b>a. Walls:</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Concrete _____	[X]	[ ]	[ ]
Masonry <u>BRICK AND STONE SHOULD BE CLEANED AND SEALED</u>	[ ]	[ ]	[X]
Metal Siding _____	[X]	[ ]	[ ]
Wood Siding _____	[X]	[ ]	[ ]
Other <u>SEE BELOW</u>	[ ]	[ ]	[X]
<b>b. Finishes:</b>			
Stucco _____	[X]	[ ]	[ ]
Paint _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THE ROOF IS COMPOSED OF A SLOPING ROOF AT THE PERIMETER BACKED BY VERTICAL WALLS AND A LOWER SLOPING ROOF THAT HAD FORMERLY HELD SKYLIGHTS. THE VERTICAL WALL BEHIND THE PERIMETER ROOF IS COMPOSED OF WOOD AND IS COVERED WITH ROOFING MATERIAL. THE MATERIAL IS DETERIORATING AND SHOULD BE REPLACED WITHIN THE NEXT FIVE TO TEN YEARS. THE EXTERIOR MASONRY IS DIRTY AND SHOULD BE CLEANED AND SEALED.

**C. COMPONENT RATING:**    (\$892,000 )    ( 77 %) = \$686,900  
                                  Possible            Condition            Component  
                                  Value            Value Multiplier    Value



**ROOFING**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

<b>a. Roof Covering:</b>	N/A	Sat	Att
Built-up <u>GUTTERS AT PERIMETER APPROXIMATELY - 1650 SF</u>	[ ]	[X]	[ ]
Built-up w/gravel _____	[X]	[ ]	[ ]
Asphalt Shingle _____	[X]	[ ]	[ ]
Copper <u>12,700 INSTALLED - 1924, 5,310 INSTALLED 1949</u>	[ ]	[X]	[ ]
Glass (Skylight) _____	[X]	[ ]	[ ]
Slate _____	[X]	[ ]	[ ]
Spanish Tile _____	[X]	[ ]	[ ]
Metal _____	[X]	[ ]	[ ]
Other <u>COMPOSITION ROOFING - 2552 SF</u>	[ ]	[ ]	[X]

**c. Flashing:**

Base & Counter <u>COPPER AND FELT</u>	[ ]	[X]	[ ]
Cap <u>COPPER</u>	[ ]	[X]	[ ]
Through Wall _____	[X]	[ ]	[ ]
Valley & Ridge <u>COPPER</u>	[ ]	[X]	[ ]

**d. Gravel Stop & Edge Strips:**

Type _____	[X]	[ ]	[ ]
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**e. Drainage:**

Gutters w/ Exterior Downspouts _____	[X]	[ ]	[ ]
Scuppers w/ Exterior Downspouts _____	[X]	[ ]	[ ]
Drains w/ Interior Storm Drains _____	[ ]	[X]	[ ]

**f. Parapets:**

Concrete _____	[X]	[ ]	[ ]
Brick _____	[ ]	[X]	[ ]
Block _____	[X]	[ ]	[ ]
Precast _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**g. Insulation:**

Type <u>FIBERGLASS BATT INSULATION IN ATTIC ABOVE CENTER</u>	[ ]	[X]	[ ]
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**B. COMMENTS**

THE ORIGINAL BUILDING HAD SKYLIGHTS IN THE INTERIOR ROOF. THEY WERE REPLACED WITH COPPER IN 1949. THERE IS EVIDENCE OF SOME PAST LEAKS BUT THE COPPER APPEARS TO BE WATERTIGHT AT THIS POINT IN TIME. THE COMPOSITION ROOFING MATERIAL LINING THE TWO WALLS AT THE INTERIOR PERIMETER OF THE ROOF IS IN POOR CONDITION BUT DOES NOT APPEAR TO BE LEAKING. THE MAJORITY OF THE COPPER ROOF IS PAST REPLACEMENT AGE.

**C. COMPONENT RATING:**    (\$290,900 )    ( 74 %) = \$215,300  
                                  Possible      Condition      Component  
                                  Value      Value Multiplier      Value



**WALL FINISHES**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

<b>A. SYSTEM DESCRIPTION</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint <u>GENERALLY IN GOOD CONDITION WITH EXCEPTIONS NOTED</u>	[ ]	[ ]	[X]
b. Wall Coating _____	[ ]	[ ]	[ ]
c. Wall Coverings <u>STAIRWAYS</u>	[ ]	[X]	[ ]
d. Paneling			
Prefinished <u>CUSTOM PANELING - 2ND FLOOR AREAS</u>	[ ]	[X]	[ ]
Plank _____	[ ]	[X]	[ ]
e. Cork _____	[X]	[ ]	[ ]
f. Wallpaper _____	[ ]	[X]	[ ]
g. Ceramic Tile _____	[ ]	[X]	[ ]
h. Trim & Wainscot _____	[ ]	[X]	[ ]
i. Decoration <u>SECOND FLOOR HALL</u>	[ ]	[X]	[ ]
j. Glass _____	[X]	[ ]	[ ]
k. Other _____	[X]	[ ]	[ ]

**B. COMMENTS**

THE NORTHEAST STAIRWAY REQUIRES MINOR PLASTER REPAIR AND REPAINTING.

**C. COMPONENT RATING:**    (\$281,200 )    ( 82 %) = \$ 230,600  
                                     Possible            Condition            Component  
                                     Value            Value Multiplier    Value

**FLOOR FINISHES**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
<b>a. Carpet:</b>			
Rolled <u>OFFICE SPACE</u>	[ ]	[X]	[ ]
Tile _____	[X]	[ ]	[ ]
<b>b. Composition:</b>			
Epoxy _____	[X]	[ ]	[ ]
Synthetic _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Concrete Topping:</b>			
Clear Sealant <u>BASEMENT MECHANICAL ROOMS</u>	[ ]	[X]	[ ]
Abrasive _____	[X]	[ ]	[ ]
Epoxy _____	[X]	[ ]	[ ]
Aggregate _____	[X]	[ ]	[ ]
<b>d. Resilient:</b>			
Vinyl Tile <u>THROUGHOUT THE BUILDING</u>	[ ]	[X]	[ ]
Linoleum _____	[X]	[ ]	[ ]
Vinyl _____	[X]	[ ]	[ ]
Rubber _____	[X]	[ ]	[ ]
Cork _____	[X]	[ ]	[ ]
<b>e. Ceramic Tile</b> <u>USED AT BUILDING ENTRANCES</u>	[ ]	[X]	[ ]
<b>f. Masonry</b> _____	[X]	[ ]	[ ]
<b>g. Terrazzo</b> <u>USED IN ORIGINAL RESTROOMS</u>	[ ]	[X]	[ ]
<b>h. Wood</b> _____	[X]	[ ]	[ ]
<b>i. Metal</b> _____	[X]	[ ]	[ ]

**B. COMMENTS**

FLOORS ARE GENERALLY IN SERVICEABLE TO GOOD CONDITION.

**C. COMPONENT RATING:**    (\$543,000)    (85 %) = \$461,500  
                                  Possible    Condition    Component  
                                  Value        Value Multiplier    Value



**CONVEYING**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

**a. Elevators:**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Number <u>2</u>	[X]	[ ]	[ ]
Type <u>PASSENGER - OTIS (BOTH)</u>	[ ]	[X]	[ ]
Speed <u>75 FPM AND 100 FPM (NEWER ELEVATOR)</u>	[ ]	[X]	[ ]
Capacity (lbs) <u>1000, 2500 (NEWER ELEVATOR)</u>	[ ]	[X]	[ ]
Dimensions <u>35" X 51", 54" X 78"</u>	[ ]	[ ]	[X]
Door Operation:			
Center	[ ]	[ ]	[ ]
To Side <u>NEWER ELEVATOR - ORIGINAL ELEVATOR HAS GATE</u>	[ ]	[X]	[ ]

**b. Lifts and Hoists:**

Number _____	[X]	[ ]	[ ]
Type _____	[X]	[ ]	[ ]

**c. Moving Stairs and Walks:**

Number _____	[X]	[ ]	[ ]
Type _____	[X]	[ ]	[ ]

**d. Conveyors:**

Number _____	[X]	[ ]	[ ]
Type _____	[X]	[ ]	[ ]

**e. Pneumatic Tubes:**

Number _____	[X]	[ ]	[ ]
Type _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THE ORIGINAL ELEVATOR WILL NOT LEVEL AT THE FLOORS AND IS ONLY USED TO ACCESS THE BASEMENT. IT IS TOO SMALL FOR EASY USE WITH A WHEELCHAIR. THE NEWER ELEVATOR DOES NOT ACCESS THE BASEMENT. A PROJECT HAS BEEN FUNDED AND DESIGN IS COMPLETE TO REPLACE THE ELEVATOR LOCATED IN THE MAIN LOBBY WITH A NEW ELEVATOR THAT WILL ACCESS ALL FOUR FLOORS.

**C. COMPONENT RATING:**    (\$174,500 )    ( 69 %) = \$120,400  
                                     Possible      Condition      Component  
                                     Value          Value Multiplier      Value

**MECHANICAL/PLUMBING**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

<b>a. Services Available:</b>	N/A	Sat	Att
Cold Water <u>4" SUPPLY IN ROOM 40M</u>	[ ]	[X]	[ ]
Hot Water <u>2" SUPPLY, 1" RETURN IN ROOM 40M</u>	[ ]	[X]	[ ]
Acid Waste _____	[X]	[ ]	[ ]
Oxygen _____	[X]	[ ]	[ ]
Natural Gas _____	[X]	[ ]	[ ]
Vacuum _____	[X]	[ ]	[ ]
Distilled Water _____	[X]	[ ]	[ ]
Compressed Air <u>SUPPLIED BY THE POWER PLANT FOR CONTROLS</u>	[ ]	[X]	[ ]
Other _____	[X]	[ ]	[ ]
<b>b. Piping &amp; Fittings:</b>			
Cast Iron <u>ORIGINAL SYSTEM HAS REACHED REPLACEMENT AGE</u>	[ ]	[ ]	[X]
Copper Tubing _____	[ ]	[X]	[ ]
Plastic _____	[X]	[ ]	[ ]
Steel <u>ORIGINAL SYSTEM HAS REACHED REPLACEMENT AGE</u>	[ ]	[ ]	[X]
Glass _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Water Heaters:</b>			
Electric _____	[X]	[ ]	[ ]
Gas _____	[X]	[ ]	[ ]
Oil _____	[X]	[ ]	[ ]
Steam Converter _____	[X]	[ ]	[ ]
Other <u>DOMESTIC HOT WATER IS SUPPLIED BY POWER PLANT</u>	[ ]	[X]	[ ]
<b>d. Drainage:</b>			
Storm Drains _____	[X]	[ ]	[ ]
Sanitary Drainage _____	[X]	[ ]	[ ]
Combined Storm/San. <u>12 @ 4", 2 @ 6", 1 @ 10"</u>	[ ]	[X]	[ ]
Floor Drains _____	[ ]	[X]	[ ]
<b>e. Fixtures:</b>			
Water Closets <u>20</u>	[ ]	[ ]	[X]
Urinals <u>7</u>	[ ]	[X]	[ ]
Lavatories <u>18</u>	[ ]	[ ]	[X]
Showers _____	[X]	[ ]	[ ]
Kitchen Sinks _____	[ ]	[X]	[ ]
Service Sinks _____	[ ]	[ ]	[X]
Drinking Fountains _____	[X]	[ ]	[ ]
Electric Water Coolers _____	[ ]	[X]	[ ]
<b>f. Sprinkler Systems:</b>			
Wet _____	[X]	[ ]	[ ]
Dry _____	[X]	[ ]	[ ]
<b>g. Standpipe Systems:</b>			
Wet <u>SERVES HOSE CABINETS</u>	[ ]	[X]	[ ]
Dry _____	[X]	[ ]	[ ]
Valves _____	[ ]	[X]	[ ]
Hose Cabinets <u>2 PER FLOOR</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

MOST OF THE PLUMBING SYSTEM IS ORIGINAL AND WHILE STILL FUNCTIONAL HAS REACHED AN AGE WHERE REPLACEMENT WILL BE WARRANTED IN THE NEXT FIVE TO TEN YEARS. THE RESTROOMS REQUIRE MODERNIZATION/REMODELING. THE TANK TYPE WATER CLOSETS ON THE THIRD FLOOR ARE PRONE TO PROBLEMS.

**C. COMPONENT RATING:**    (\$882,300 )    ( 53 %) = \$467,600  
                                  Possible            Condition            Component  
                                  Value            Value Multiplier    Value

**MECHANICAL/HEATING**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Central Plant Steam _____	[X]	[ ]	[ ]
Central Plant Hot Water <u>6" SUPPLY AND RETURN - RM 40M</u>	[ ]	[X]	[ ]
Boilers: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Furnace: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Heat Pump: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]

**b. System Type:**

Steam _____	[X]	[ ]	[ ]
Hot Water <u>ORIGINAL SYSTEM HAS PASSED REPLACEMENT AGE</u>	[ ]	[ ]	[X]
Air _____	[ ]	[X]	[ ]
Multizone _____	[ ]	[X]	[ ]
Dual Duct _____	[ ]	[X]	[ ]
Terminal Reheat <u>HOT WATER COILS AND ELECTRIC REHEATS</u>	[ ]	[X]	[ ]
Variable Volume _____	[ ]	[X]	[ ]
Other _____	[X]	[ ]	[ ]

**c. Space Equipment:**

Radiators _____	[ ]	[X]	[ ]
Convectors _____	[X]	[ ]	[ ]
2-Pipe Fan Coil <u>THRU-WALL UNITS ARE OLD AND UNRELIABLE</u>	[ ]	[ ]	[X]
Unit Heaters <u>LOCATED IN SOME OF THE ENTRANCES</u>	[ ]	[X]	[ ]
Other _____	[X]	[ ]	[ ]

**d. Control Type:**

Pneu _____	[ ]	[X]	[ ]
Electric _____	[ ]	[X]	[ ]
DDC _____	[X]	[ ]	[ ]
Manual Valves _____	[ ]	[X]	[ ]

**B. COMMENTS:**

A BOOSTER PUMP WAS RECENTLY ADDED TO AUGMENT THE SUPPLY OF HEATING HOT WATER TO THE BUILDING. MOST OF THE BUILDING DISTRIBUTION SYSTEM IS ORIGINAL AND IS BEGINNING TO PLUG UP, RESTRICTING HOT WATER FLOW. THE SYSTEM SHOULD BE REPLACED.

**C. COMPONENT RATING:**    (\$940,500 )    ( 53 %) = \$498,500  
                                  Possible      Condition      Component  
                                  Value      Value Multiplier      Value

**COOLING & VENTILATING**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. System:</b>			
Type <u>NO CENTRAL SYSTEM - VARIOUS SMALL SYSTEMS</u>	[ ]	[ ]	[X]
Capacity <u>TOTAL TONNAGE IS ESTIMATED TO BE 150 TONS</u>	[ ]	[X]	[ ]
<b>b. Chillers:</b>			
Centrifugal _____	[X]	[ ]	[ ]
Reciprocating <u>4 CHILLERS WITH AIR-COOLED CONDENSERS</u>	[ ]	[X]	[ ]
Absorption _____	[X]	[ ]	[ ]
<b>c. Cooling Towers:</b>			
Type _____	[X]	[ ]	[ ]
Capacity _____	[X]	[ ]	[ ]
<b>d. Condensers:</b> <u>AIR-COOLED CONDENSERS LOCATED ON ROOF</u>	[ ]	[X]	[ ]
<b>e. Space Equipment:</b>			
Direct Expansion -			
Window units <u>9</u>	[ ]	[X]	[ ]
Thru-the-wall <u>7</u>	[ ]	[X]	[ ]
Single zone <u>MOST OF THE BUILDING COOLED WITH SMALL SYS</u>	[ ]	[X]	[ ]
Single zone con. vol. _____	[X]	[ ]	[ ]
Other _____	[ ]	[X]	[ ]
Air/Water -			
2-pipe fan coil _____	[X]	[ ]	[ ]
Terminal reheat <u>HOT WATER OR ELECTRIC REHEATS USED</u>	[ ]	[X]	[ ]
Variable volume _____	[ ]	[X]	[ ]
Dual Duct _____	[X]	[ ]	[ ]
Multizone <u>BASEMENT</u>	[ ]	[X]	[ ]
<b>f. Special Systems:</b>			
Type _____	[X]	[ ]	[ ]
Capacity _____	[X]	[ ]	[ ]
<b>g. Control Systems:</b>			
Pneu _____	[ ]	[X]	[ ]
Electric _____	[ ]	[X]	[ ]
Electronic _____	[ ]	[ ]	[ ]
<b>h. Fans:</b>			
Exhaust <u>13 - NO EXHAUST FAN FOR WOMEN'S RR ON 1ST FLOOR</u>	[ ]	[ ]	[X]
Recirculating <u>11</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

THE BUILDING IS COOLED BY A FOREST OF 20 DIRECT EXPANSION SYSTEMS AS WELL AS SEVERAL AIR CONDITIONERS. THE SYSTEMS VARY IN AGE FROM 6 MONTHS TO 25 YEARS OLD. PHYSICAL FACILITIES HAS PROPOSED A SERIES OF THREE PROJECTS, STAGED TO COMPLETELY RENOVATE THE HVAC SYSTEM IN THE BUILDING. AN ADDITIONAL CHILLER IS BEING INSTALLED IN DULLES HALL TO PROVIDE CHILLED WATER TO A PIPE LOOP WHICH WILL INCLUDE BRICKER HALL. THE TWO UNFUNDED PROJECTS WILL PROVIDE A CENTRAL SYSTEM TO THE BUILDING.

**C. COMPONENT RATING:**    (\$523,600 )    ( 68 %) = \$356,000  
                                  Possible      Condition      Component  
                                  Value      Value Multiplier      Value

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

**(a) Service:**

Substation BUCKEYE PGN9/PNS3  
 Primary Voltage 13,200 VOLTS  
 Transformer:  
 Manufacture                      Type                      KVA                      Secondary Voltages  
GENERAL ELECTRIC    SILICONE                      500                      208/120

**(b) Distribution System:**

Panelboard (type) CIRCUIT BREAKER  
 Voltage 208/120  
 Amperage 1600 AMPS  
 Conduit ALUMINUM/STEEL  
 Conductor COPPER  
 Wire (type) VARIES  
 Armored Cable YES  
 Other

**(c) Emergency System:**

General or (type & capacity) N/A

**B. COMMENTS:**

THE BUILDING TRANSFORMER WAS REPLACED IN 1989 DURING THE PCB TRANSFORMER REPLACEMENT PROJECT. IT IS LOCATED IN DERBY HALL. THE DEMAND METER APPEARS TO HAVE BEEN RESET. NO MAXIMUM DEMAND READING IS AVAILABLE FOR THE BUILDING.

**C. COMPONENT RATING:**    (\$106,700 )    ( 90 %) = \$96,000  
    Possible                      Condition                      Component  
    Value                      Value Multiplier                      Value

**ELECTRICAL/LIGHTING & POWER**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

**a. Lighting (lamp type):**

	N/A	Sat	Att
Fluor <u>HAVE BEEN INSTALLED THROUGHOUT MOST OF THE BUILDING</u>	[ ]	[X]	[ ]
Incand _____	[ ]	[X]	[ ]
HID _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**b. Receptacles & Switches:**

Type & Capacity _____	[ ]	[X]	[ ]
-----------------------	-----	-----	-----

**c. Special:**

Baseboard Heat _____	[X]	[ ]	[ ]
Lightning Protection _____	[X]	[ ]	[ ]
Communication & Alarm _____	[ ]	[X]	[ ]
Data Systems _____	[ ]	[X]	[ ]

**B. COMMENTS:**

LARGE PORTIONS OF THE BUILDING HAVE BEEN REWIRED OVER THE YEARS DURING VARIOUS LIMITED RENOVATION PROJECTS. THE ORIGINAL CLOTH WIRE IS STILL PRESENT IN AREAS OF THE BUILDING HOWEVER AND MOST POWER DISTRIBUTION PANELS ARE FULLY UTILIZED. THE ORIGINAL WIRING SHOULD BE REPLACED AS NECESSARY AND ADDITIONAL CIRCUITS SHOULD BE ADDED WHEN THE HVAC SYSTEM IS RENOVATED.

**C. COMPONENT RATING:    (\$1,144,000 )    (64 % ) = \$732,200**

Possible	Condition	Component
Value	Value Multiplier	Value

**SAFETY STANDARDS**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
<b>(a) Exits:</b>			
Stair Construction:			
concrete _____	[X]	[ ]	[ ]
steel _____	[ ]	[X]	[ ]
wood _____	[X]	[ ]	[ ]
Number of exits <u>5</u>	[ ]	[X]	[ ]
<b>(b) Fire Rating:</b>			
Construction Type: <u>I X</u> II ___    III ___    IV ___    V ___    VI ___			
Building Height: <u>63</u> ft., <u>3</u> stories			
<b>(c) Extinguishing Systems:</b>			
Portable <u>WATER, ABC AND CO2</u>	[ ]	[X]	[ ]
Standpipe <u>FOR FIRE HOSE CABINETS</u>	[ ]	[X]	[ ]
Hose Cabinets <u>2 PER FLOOR</u>	[ ]	[X]	[ ]
Sprinklers _____	[X]	[ ]	[ ]
Suppression _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>(d) Detection &amp; Alarm Systems:</b>			
Manual Alarm _____	[ ]	[X]	[ ]
Annunciator <u>LOCATED IN RM 059</u>	[ ]	[X]	[ ]
Smoke Detectors _____	[X]	[ ]	[ ]
<b>(e) Lighting Systems:</b>			
Exit Signs _____	[ ]	[X]	[ ]
Exit Lighting _____	[ ]	[X]	[ ]
Emergency Lighting <u>LOCATED IN HALLWAYS</u>	[ ]	[X]	[ ]
Emergency Generator _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THE SYSTEMS ARE FUNCTIONAL BUT SHOULD BE UPDATED ALONG WITH ANY MAJOR MECHANICAL/ELECTRICAL PROJECTS. THE BUILDING DOES NOT HAVE A TRASH ROOM OR LOADING DOCK. TRASH IS CURRENTLY STORED UNDER THE NORTH EAST STAIRWAY IF THE BUILDING IS RENOVATED A SEPARATE ROOM SHOULD BE DEDICATED TO THIS FUNCTION.

**C. COMPONENT RATING:**    (\$58,180)    (70 %) = \$40,700  
                                  Possible            Condition            Component  
                                  Value            Value Multiplier    Value

**BUILDING PERIMETER EVALUATION**

FAC # 001      DATE 1/13/94      INSPECTOR: JPH

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
1. Building Access:			
Driveway _____	[X]	[ ]	[ ]
Loading Dock _____	[X]	[ ]	[ ]
Sidewalks			
Front <u>SOUTH - CRACKED AND SPALLING</u>	[ ]	[ ]	[X]
Side <u>SOME CRACKING ON THE EAST SIDE</u>	[ ]	[ ]	[X]
Rear <u>SUNKEN SLAB ON THE NORTH SIDE</u>	[ ]	[ ]	[X]
Steps			
Front _____	[ ]	[X]	[ ]
Side _____	[ ]	[X]	[ ]
Rear _____	[ ]	[X]	[ ]
Handicap Ramp _____	[ ]	[X]	[ ]
2. Lawn and Landscaping:			
Lawn _____	[ ]	[X]	[ ]
Shrubs _____	[ ]	[X]	[ ]
Trees _____	[ ]	[X]	[ ]
Undesirable Insect _____	[X]	[ ]	[ ]
Bedding Material _____	[ ]	[X]	[ ]
Watering System _____	[ ]	[X]	[ ]
3. General Site Information:			
Signage <u>LOCATED ON THE NORTH SIDE OF THE BUILDING</u>	[ ]	[X]	[ ]
Address Identification <u>ON SIGN</u>	[ ]	[X]	[ ]
Security Lights <u>INCANDESCENT FIXTURES AT EXITS</u>	[ ]	[X]	[ ]
Street Lights <u>TWO ON SOUTH SIDE OF THE BUILDING</u>	[ ]	[X]	[ ]
Drainage _____	[ ]	[X]	[ ]
Storm Drains _____	[ ]	[X]	[ ]

**B. COMMENTS:**

THE SIDEWALKS ON THE SOUTH AND EAST SIDES OF THE BUILDING ARE IN POOR CONDITION.  
THE CURB ALONG 17TH AVENUE SHOULD BE REPLACED.

**The Ohio State University  
Department of Physical Facilities**

**BUILDING AUDIT METHODOLOGY**

1. BUILDING AUDIT PROGRAM OBJECTIVE

To provide a building-by-building inventory, including maintenance deficiencies that currently exist, for the OSU buildings that the Department of Physical Facilities has budgetary responsibility for. These audits will be used to establish corrective maintenance projects and budget cost estimates.

2. BUILDING AUDIT APPROACH

A five-step procedure is used to meet the program objectives:

1. Collect Historical and Inventory Data on each building.
2. Interview Building Occupants.
3. Perform a Building Inspection.
4. Complete Building Evaluation Forms.
5. Issue Written Report.

3. DATA ORGANIZATION

The data collected is stored by hard copy with field notes in a building file established for each building. The report data is being stored in a database program that allows retrieval of specific data as it is 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 systems in each building.

4. 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 The Office of Campus Planning and Space Utilization for each OSU building.

5. LIMITATIONS

(1) All inspections are visual and do not include physical tests, instrumentation or metering measurements, sampling, or monitoring.

(2) Only random typical offices or laboratories are entered. Typical spaces are deemed to be representative of average conditions throughout each building.

(3) The scope of the analysis does not include complete OSHA, energy, or physical impaired access study. Buildings and components are inspected for condition and general safety requirements rather than specialized code conformance.

(4) It is assumed that the buildings inspected were approved by the State of Ohio Division of Factory and Building Inspection at the time of construction.

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 eliminate obvious problems and to upgrade the buildings in a reasonable manner in regard to occupant safety.

(5) 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.

(6) The building inspections are defined to include the following:

- (a) Includes general repainting, redecorating and wholesale replacement of building and system components. Ongoing maintenance, replacement and renovation projects are included.
- (b) Includes exterior building walls and attached items.
- (c) Includes the entrance steps at all entries. Ramps outside the buildings are included. Plantings around the building exterior are included.
- (d) Movable furniture is not included.
- (e) Fixed equipment inside the buildings that is installed and maintained by a specific academic department or using agency is not included.
- (f) Utility lines supplying the buildings are not included.
- (g) The program needs of the using department are assumed to be satisfied. No consideration has been given to anticipate any changes in current occupant space needs.

## ABBREVIATIONS

ATT.....	ATTENTION
BLDG.....	BUILDING
BUR.....	BUILT UP ROOF
COND.....	CONDENSATE WATER
DD.....	DUAL DUCT AIR HANDLING SYSTEM
DDHV.....	DUAL DUCT HIGH VELOCITY
DHWR.....	DOMESTIC HOT WATER RETURN
DHWS.....	DOMESTIC HOT WATER SUPPLY
DX.....	DIRECT EXPANSION AIR CONDITIONER
FPM.....	FEET PER MINUTE
HID.....	HIGH INTENSITY DISCHARGE LIGHT
HPS.....	HIGH PRESSURE STEAM (125 PSI)
HVAC.....	HEATING, VENTILATING AND AIR CONDITIONING SYSTEM
KV.....	KILOVOLTS
KVA.....	KILOVOLTS AMPS
KW.....	KILOWATTS
LC.....	LIQUID COOLED
LPS.....	LOW PRESSURE STEAM (15 PSI)
MPS.....	MEDIUM PRESSURE STEAM (50 PSI)
MZ.....	MULTIZONE AIR HANDLING SYSTEM
N/A.....	NOT APPLICABLE
PSI.....	POUNDS PER SQUARE INCH
RM.....	ROOM
SAT.....	SATISFACTORY
SR.....	STEAM RETURN LINE
SS.....	STEAM SUPPLY LINE
TR.....	TERMINAL REHEAT AIR HANDLING SYSTEM
V.....	VOLTS
VAV.....	VARIABLE AIR VOLUME SYSTEM

**APPENDIX**  
Reduced Scale Building Floor Plans  
C-1 Building Space Assignments