

FACILITY AUDIT REPORT  
**DENNEY HALL**  
#030

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Prepared by:  
Richard Lighthiser, P.E.  
Division of Resource Management  
Department of Physical Facilities  
The Ohio State University

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GENERAL BUILDING INFORMATION

DENNEY HALL

BUILDING # 030

BUILDING ADDRESS: 164 West 17th Avenue

GROSS SQ. FT.: 106,632

NET ASSIGNABLE SQ. FT.: 62,054

MECHANICAL/CUSTODIAL AREA SQ. FT.: 13,353

YEAR OF CONSTRUCTION: 1960

YEAR OF LAST RENOVATION: None

NUMBER OF STORIES/BASEMENT: 5 Floors plus a full basement

AIR CONDITIONING (Percentage): 90 %

CURRENT USE: Offices for the College of Arts & Sciences and the English Department. Several general purpose classrooms.

TYPE OF CONSTRUCTION: Reinforced concrete frame, metal curtain wall

ESTIMATED REPLACEMENT COST: \$ 13,674,000

BUILDING APPEARANCE: The exterior is primarily metal wall panels with single hung windows and the interior is glazed block giving a very institutional appearance.

HANDICAPPED ACCESSIBILITY: Entrances at each end (east & west) of the building are at grade level. The elevators at each entrance are equipped with wheelchair accessible controls.

OVERALL BUILDING CONDITION: Satisfactory \*

NUMBER OF EXIT STAIRWAYS: Three (3)

\* Replacement Cost assigned September 1991 by The Office of Campus Planning and Space Utilization.

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

BUILDING SYSTEMS INFORMATION

DENNEY HALL # 030

**HEATING:**

Source Power Plant  
Type Heating System Hot Water  
Steam (Line size, valve location) None  
Building Htg Water (line size, valve location) 8" HWS, 8" HWR, Room 18

**VENTILATION SYSTEM:**

3 Multizone Systems, 1 Single Zone DX System

**COOLING:**

1 - 15 ton electric reciprocating (Dunham B.)  
Bldg % 90 % Chillers 1 - 218 ton electric centrifugal (York)  
Window Units None Thru-the-wall One Direct exp. units One

**HVAC CONTROL SYSTEM:**

Landis & Gyr Powers, Direct Digital Control

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

1. Circuit PGN9/PGS3 500 KVA 13,200 / 480Y/277 Located Rm 18  
2. Circuit PGN9/PGS3 500 KVA 13,200 / 208Y/120 Located Rm 18

**PLUMBING:**

Water (size, valve location) 6 inch water supply, Room 69  
Gas (size, valve location) None  
Domestic Hot Water (size, valve location) 3" DHWS, 1 1/2" DHWR, Rm 18  
Compressed Air (size, location) 1 1/2" line, Rm 18

**SEWERS:**

Storm None Sanitary None Combination 1 @ 10", 3 @ 4", 1 @ 6"

**METERS:**

Gas (size, location) None  
Water (size, location) None (except for cooling tower in penthouse)  
Electric (size, location) Two electric meters, Rm 18

**ALARM SYSTEMS:**

Fire Alarm Yes Panel Location Room 18  
Fire Pump None Pump Location None  
Sprinklers None Panel Location None  
Other Alarms None

**ELEVATORS:**

Number Two (2) Type (passenger, freight) Passenger  
Manufacturer Otis Size 2,000 lb., 200 fpm

**EMERGENCY GENERATOR:** Size None Location

**KEY BOX LOCATION:** Northwest Entrance (Left of Trash Room)

**ASBESTOS SURVEY (1986):**

PEI ASSOCIATES ASSESSMENT PROGRAM IDENTIFIED ASBESTOS CONTAINING MATERIALS IN THE DUCT INSULATION AND PIPE INSULATION OF THE MECHANICAL ROOMS.

## DENNEY HALL NARRATIVE

### GENERAL

This Building Audit was conducted by Physical Facilities for the purpose of evaluating the present condition of those aspects of the building for which Physical Facilities has a budgetary responsibility. This audit describes the current physical condition of those aspects of the facility and identifies existing corrective maintenance repairs and building component system replacement requirements. It has been assumed that the program needs of the tenant departments are being met by the facility.

Audit goals and methodology are described in greater detail in the "Building Audit Methodology" section of this report.

### HISTORY

Denney Hall was constructed in 1959 and completed for occupancy in February 1960. The building has been identified as the New Arts College Building and the College of Arts: Classroom/Office Building. The building has primarily been used for the College of Arts and Sciences and The Department of English. There are 20 classrooms in the building that are part of the campus classroom pool that are used by all departments.

Several of the classrooms have the same seats and decor that were initially installed 33 years ago. The current building use is as follows: Classrooms 22%; Laboratory 9.5%; Offices 51%; and Mechanical 17.5%.

### PRIMARY SYSTEMS

The foundation, basement floor slab, and columns & beams all appear to be in good condition. There are a few signs of settlement in the southeast corner of the building, but this appears to have happened several years ago and there are no signs of current movement. The exterior closure that consists of metal panels and brick veneer does not show any signs of foundation problems. The mortar used for the brick veneer is beginning to show some crumbling when rubbed. The exterior will need to be cleaned and sealed within the next 5 to 10 years. The joints in the metal panels have caulking that is deteriorating and will also need to be replaced.

The windows are aluminum single hung windows with spring balances. The operation of the windows appeared to be good. The problem with the windows is the large amount of exterior wall area that is glass. About 30 % of the exterior wall area on the north and south sides of the building is single glazed glass. This results in solar gain in the summer that overloads the air conditioning system and a heat loss in the winter that add to the heating requirements. We have proposed a project to install new insulated windows to improve occupant comfort.

Because of the number of windows to be replaced this is a very expensive project.

The entry doors at the west, south and east entrances are aluminum and in fair condition. The lobby entrance at the southwest corner can become very cold in the winter because the location of the single door entrances allows the outside air to blow through the lobby when the doors are opened. We are proposing that double doors be installed at each entrance to provide a protected entry and

reduce the air infiltration. The entrance to the trash room is an overhead steel door.

The roof on Denney Hall is the original built-up tar roof that is over 30 years old. There have been a few leaks experienced and there are a couple of areas that have been repaired, but considering its age, the roof is performing adequately. We have proposed a project to replace the roof cover before a major leak problem does occur.

The canopies over the south and east entrances are also built-up roofs with gravel that have deteriorated and will need to be replaced.

## **SECONDARY SYSTEMS**

The partitions, doors, walls, and ceilings are very consistent in their condition throughout the building. The original classroom partitions are constructed of concrete block and glazed block. The partitions constructed to sub-divide into offices were originally built with a wall board that appears to be a transite type material. The renovations and remodels have been built with metal studs and drywall. Some wood paneling has been used on the first floor for the College offices. These partitions are in good condition.

The ceilings in the corridors and classrooms are 12" x 12" acoustical tile. These tiles are over 30 years old and are dirty and discolored in a few areas. The acoustic ceiling tile has been painted sometime in the last 5 years. The light fixtures that suspend from the ceiling are discolored and need to be cleaned. We have proposed a project to clean the light fixtures and the registers in the corridors and the classrooms.

The stairwells and restrooms are glazed block with plaster board ceilings. The glazed block in these areas needs to be cleaned. The stairs are constructed of a metal frame with concrete treads. The metal frames for the stairwell doors and corridor doors have been scratched and marked.

## **SERVICE SYSTEMS**

The major service systems at Denney Hall are over 30 years old. The elevators that continue to perform adequately are in need of a complete modernization. Both elevators are accessible to wheelchairs and have accessible control panels.

The hot water heating system does a good job of heating Denney Hall. The work orders from the winter months primarily resulted from rooms being too hot. The perimeter convectors are controlled by manual valves to the convectors and temperature control of the water.

The plumbing for the domestic water system is operating adequately. A few of the faucets in the restrooms are old and difficult to turn, but the water pressure and supply was adequate at all locations checked. The decor in the restrooms is the original fixtures and finishes.

The building is cooled by three separate multi-zone air handlers. There are also twelve window air conditioners installed to supplement the cooling in several computer labs added since construction. The chilled water for the multi-zone systems is cooled by a new York 218 ton centrifugal chiller. The cooling tower is a Marley 350-611 model that has wood slats. The cooling tower was installed

in 1974 and appears to be performing very satisfactorily.

The building temperatures have been maintained satisfactorily except at the south and the west corner of the building where the double entry to the lobby is located. DDC controls are currently being installed in Denney Hall to provide for central monitoring of the temperatures in the building and to better manage the energy consumption.

#### **ELECTRICITY**

The building has two 500 KVA transformers. There is a 480Y/277 volt secondary and a 120/208 volt secondary. Several additional breaker panels and electric circuits have been run to supply computer labs and the listening center. This has utilized some of the extra capacity that the system originally had available.

The utilities department records show a peak load in April, 1987 at about 70% of the building electrical capacity.

The majority of the building has fluorescent lighting. The exception to this are the stairwells, restrooms, and mechanical rooms. The corridors measured as low as 2 footcandles in several areas which is below the 10 to 20 footcandles recommended. We are proposing a project to add additional fluorescent fixtures in the corridors to eliminate the dark areas.

#### **SAFETY STANDARDS**

Denney Hall is equipped with a manual fire alarm system. Portable fire extinguishers and hose cabinets are located in the corridors of each floor. There are lighted exit signs at each exit, but the battery back-up power is overloaded and will only operate for about 15 minutes.

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 the duct insulation and pipe insulation in the mechanical rooms. Some transite board partitioning material was removed in August 1985. The office partitions on the 4th and 5th floors appear to contain transite type material.

#### **BUILDING PERIMETER**

The sidewalks on the west and east sides of the building are in good condition. The sidewalk on the south side has been damaged by trucks parking on it and has sections that need to be replaced.

The handicapped access to Denney Hall is located at the east and west entrances to the building. The plantings around the building are overgrown and need to be trimmed. This area to the east has a patio with benches on the perimeter. The benches are constructed of wood that has deteriorated and needs to be replaced before the benches become unsafe.

The sewer separation project has the lawn area to the north torn-up and will have to be replaced when the construction work is completed.

## CONCLUSION

The roof cover has exceeded its expected useful life. A new centrifugal chiller was recently installed to improve the reliability of the HVAC system. The electric system has been expanded several times and has little spare capacity for expansion. The restrooms and elevators are in need of a modernization. The windows are operating satisfactorily, but are outdated and do not provide for good occupant comfort. The exterior of the building will need to be cleaned and sealed to provide adequate protection against moisture penetrating the building.

PROPOSED MAINTENANCE PROJECTS

DENNEY HALL #030

**A. Corrective Maintenance Projects:**

- 1. Modernize and upgrade elevators installed in 1960, 2 elevators involved (Control # 1544).....\$145,000
  - 2. Replace invertor and batteries for the emergency lighting system (Control #1838).....\$ 6,000 \*
  - 3. Replace built-up roof on all sections of the building (16,700 SF) (Control #0427).....\$150,000
  - 4. Replace aluminum entrance doors (12 doors) and add a second set of doors to the west entrance to reduce air infiltration.....\$ 25,000
  - 5. Clean air handler units and duct systems in the building (Control #0806).....\$ 8,500
  - 6. Install additional lights in the corridors (28 fixtures).....\$ 11,400
- Sub-total \$345,900

**B. Building Improvements/Addition Projects:**

- 1. Replace windows (620 windows).....\$352,000
- Sub-total \$352,000

**C. Projected (over the next 5 years) Component Replacement Projects:**

- 1. Replace wood slates in the cooling tower with plastic honey comb insert.....\$ 8,000

**Total cost for all estimated projects = \$ 705,900**

\* These projects are currently on our departmental R&R project list as funded projects.

**MAINTENANCE PROJECTS**  
(Less than \$5,000)

**DENNEY HALL                    #030**

1. Install electric panel cover in room 18A.  
Work order # 01-5064-050410-66
2. Remove plywood that is located on the roof next to the cooling tower.  
Work order # 01-5064-050414-66
3. Paint the cooling tower base and structural steel.  
Work order # 01-5064-050415-71
4. Repair concrete treads on the second floor of the west stairwell that are pitted from ice melt being tracked in.  
Work order # 01-5063-003558-51
5. Replace benches located at the east end of the building.  
Work order # 01-5063-003559-52
6. Clean glazed block walls through-out the building.  
Work order # 01-5063-003560-40
7. Clean mechanical room floors and apply sealer.  
Work order # 01-5063-003561-40
8. Clean light fixtures in hallways.  
Work order # 01-5063-003563-40

**BUILDING EVALUATION SUMMARY**

**I. BUILDING INFORMATION**

FAC # 030 FACILITY NAME: Denney Hall  
 DATE: 2-11-93 INSPECTOR: RDL  
 YEAR CONSTRUCTED: 1960  
 GROSS SQ FT: 106,632 NET SQ FT: 62,054  
 REPLACEMENT COST \$ 13,674,000 X 90% = 12,306,600

**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	5.03	619,022	0.89	550,930
Columns and Beams	13.58	1,671,236	0.89	1,487,400
Exterior Walls	2.87	353,199	0.72	254,303
Windows & Doors	3.93	483,649	0.62	299,862
Roofing	2.59	318,741	0.40	127,496
Partitions & Drs.	8.41	1,034,985	0.75	776,239
Wall Finishes	2.57	316,280	0.87	275,164
Floor Finishes	4.87	599,331	0.68	407,545
Ceilings & Finish	6.93	852,847	0.56	477,594
Conveying	3.60	443,038	0.63	279,114
Plumbing	8.01	985,759	0.82	808,322
Heating	8.47	1,042,369	0.71	740,082
Cooling & Vent.	9.72	1,196,202	0.75	897,152
Elec. Ser. & Dist	1.68	206,751	0.98	202,616
Lighting & Power	11.27	1,386,954	0.63	873,781
Safety Standards	6.47	796,237	0.60	477,742
TOTALS	100.00	12,306,600	0.73	8,935,342

**III. BUILDING RATING SUMMARY**

Overall Building Rating = 73.0 %

\* 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.

**FOUNDATIONS**

FAC # 030 DATE: 1-29-93 INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
<b>a. Footings:</b>			
Individual Footings & Piers <u>CAST-IN-PLACE FOR COLUMNS</u>	[ ]	[X]	[ ]
Continuous Footings <u>CAST-IN-PLACE FOR EXTERIOR WALLS</u>	[ ]	[X]	[ ]
Grade Beams _____	[X]	[ ]	[ ]
Piles _____	[X]	[ ]	[ ]
Caissons _____	[X]	[ ]	[ ]
<b>b. Foundation Wall Materials:</b>			
Steel _____	[X]	[ ]	[ ]
Concrete Cast-in-place <u>WITH REINFORCING RODS</u>	[ ]	[X]	[ ]
Concrete Block _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Waterproofing and Underdrain:</b>			
Coating _____	[X]	[ ]	[ ]
Membrane <u>WATERPROOFING ON OUTSIDE OF BASEMENT WALLS</u>	[ ]	[X]	[ ]
Board <u>ASPHALTIC HARD BOARD UNDER BASEMENT FLOOR SLAB</u>	[ ]	[X]	[ ]
Drain Tile _____	[X]	[ ]	[ ]
<b>d. Slab on Grade (floor):</b>			
Plain _____	[X]	[ ]	[ ]
Reinforced <u>BASEMENT FLOOR SLAB WITH WIRE MESH</u>	[ ]	[X]	[ ]
<b>e. Special Substructures:</b>			
<u>CONCRETE JOISTS WITH TRUSS BARS FOR EACH FLOOR</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

1. THERE WERE NO SIGNS OF SETTLEMENT OR MOVEMENT IN THE FOUNDATION.

**C. COMPONENT RATING:**     $\frac{(\$619,022)}{\text{Possible Value}} \times \left( \frac{0.89}{\text{Condition Value Multiplier}} \right) = \frac{\$550,930}{\text{Component Value}}$

**COLUMNS AND BEAMS**

FAC # 030    DATE: 1-29-93    INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

**a. Columns and Beams:**

	N/A	Sat	Att
Concrete-in-place <u>WITH TEMPERATURE STEEL REINFORCEMENT</u>	[ ]	[X]	[ ]
Precast Concrete _____	[X]	[ ]	[ ]
Steel _____	[X]	[ ]	[ ]
Steel Fireproofing _____	[X]	[ ]	[ ]
Wood _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**b. Floors:**

Concrete Slab <u>WITH CONCRETE JOISTS</u>	[ ]	[X]	[ ]
Precast Slab _____	[X]	[ ]	[ ]
Metal Deck _____	[X]	[ ]	[ ]
Metal Deck w/concrete fill _____	[X]	[ ]	[ ]
Wood _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**c. Roof System:**

Flat <u>WITH LIGHTWEIGHT CONCRETE FILL &amp; 1 1/2 " INSULATION</u>	[ ]	[X]	[ ]
Pitched _____	[X]	[ ]	[ ]
Concrete <u>DECK FOR THE 5TH FLOOR</u>	[ ]	[X]	[ ]
Steel <u>DECK WITH LIGHT WEIGHT CONCRETE FOR THE PENTHOUSE</u>	[ ]	[X]	[ ]
Wood _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

1. THE STRUCTURAL COLUMNS & BEAMS DO NOT SHOW ANY SIGNS OF DETERIORATION OR MOVEMENT.

<b>C. COMPONENT RATING:</b>	( <u>\$1,671,236</u> )	X	( <u>0.89</u> )	=	<u>\$1,487,400</u>
	Possible		Condition		Component
	Value		Value Multiplier		Value

**EXTERIOR WALLS**

FAC # 030    DATE: 1-29-93    INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
<b>a. Walls:</b>			
Concrete _____	[X]	[ ]	[ ]
Masonry <u>BRICK VENEER USED ON THE EAST &amp; WEST ENDS</u>	[ ]	[ ]	[X]
Metal Siding <u>WITH INSULATED PANELS USED FOR PENTHOUSE</u>	[ ]	[X]	[ ]
Wood Siding _____	[X]	[ ]	[ ]
Other <u>ALUMINUM PANEL WALL WITH EXTRUDED STOP &amp; WINDOWS</u>	[ ]	[X]	[ ]
 <b>b. Finishes:</b>			
Stucco _____	[X]	[ ]	[ ]
Paint <u>PENTHOUSE ON ROOF HAS BEEN PAINTED</u>	[ ]	[ ]	[X]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

1. THE BRICK VENEER AT THE EAST END HAS VERTICAL CRACKS AT THE CORNERS.
2. THE PENTHOUSE EXTERIOR PAINT IS CRACKING/BLISTERING.

**C. COMPONENT RATING:**    ( \$353,199 ) x ( 0.72 ) = \$254,303

Possible	Condition	Component
Value	Value Multiplier	Value

**EXTERIOR WINDOWS & DOORS**

FAC # 030    DATE: 1-29-93    INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. Windows type &amp; number:</b>			
Wood _____	[X]	[ ]	[ ]
Steel _____	[X]	[ ]	[ ]
Alum <u>ALUMINUM SINGLE HUNG WINDOWS ARE DIFFICULT TO OPEN</u>	[ ]	[ ]	[X]
Other _____	[X]	[ ]	[ ]
 <b>b. Window glazing</b>			
Single pane <u>SINGLE PANE NON-INSULATED ALUMINUM FRAMES</u>	[ ]	[ ]	[X]
Double pane _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
 <b>c. Doors type &amp; number:</b>			
Wood _____	[X]	[ ]	[ ]
Steel _____	[X]	[ ]	[ ]
Alum <u>ENTRANCE DOORS ARE WORN FROM FREQUENT USAGE.</u>	[ ]	[ ]	[X]
Other _____	[X]	[ ]	[ ]
 <b>d. Shading Devices:</b>			
Types _____	[X]	[ ]	[ ]

**B. COMMENTS:**

1. SINGLE GLAZED WINDOWS SHOULD BE REPLACED WITH DOUBLE GLAZED INSULATED WINDOWS.
2. REPLACEMENT OF THE ENTRANCE DOORS WOULD IMPROVE THE APPEARANCE AND ELIMINATE SOME HARDWARE MAINTENANCE CALLS AT DENNEY HALL. THE INSTALLATION OF DOUBLE ENTRY DOORS WOULD HELP REDUCE THE COLD TEMPERATURES THAT ARE EXPERIENCED IN THE LOBBY AND WEST STAIRWELL.

**C. COMPONENT RATING:**    ( \$483,649 ) X ( 0.62 ) = \$299,862

Possible	Condition	Component
Value	Value Multiplier	Value





**WALL FINISHES**

FAC # 030    DATE: 2-1-93    INSPECTOR: RDL

<b>A. SYSTEM DESCRIPTION</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint <u>USED OFFICE PARTITIONS, CORRIDORS, &amp; CLASSROOMS</u>	[ ]	[X]	[ ]
b. Wall Coating _____	[X]	[ ]	[ ]
c. Wall Coverings <u>USED IN UPPER CORRIDORS</u>	[ ]	[X]	[ ]
d. Paneling			
Prefinished <u>USED FOR 1ST FLOOR OFFICES 7 CORRIDORS</u>	[ ]	[X]	[ ]
Plank _____	[X]	[ ]	[ ]
e. Cork _____	[X]	[ ]	[ ]
f. Wallpaper _____	[X]	[ ]	[ ]
g. Ceramic Tile <u>USED IN RESTROOMS</u>	[ ]	[X]	[ ]
h. Trim & Wainscot _____	[X]	[ ]	[ ]
i. Decoration _____	[X]	[ ]	[ ]
j. Glass _____	[X]	[ ]	[ ]
k. Other <u>GLAZED BLOCK FINISH IN STAIRWELLS &amp; CORRIDORS</u>	[ ]	[ ]	[X]

**B. COMMENTS**

1. GLAZED BLOCK IS DIRTY. ATTEMPTS AT CLEANING HAVE LEFT PARTIALLY CLEANED WALLS THAT LOOK WORSE THAN BEFORE.

**C. COMPONENT RATING:**     $\frac{(\$316,280)}{\text{Value}} \times \frac{(0.87)}{\text{Value Multiplier}} = \frac{\$275,164}{\text{Value}}$

**FLOOR FINISHES**

FAC # 030    DATE: 2-1-93    INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. Carpet:</b>			
Rolled <u>HAS BEEN INSTALLED IN DEPARTMENTAL AREAS</u>	[ ]	[ ]	[X]
Tile _____	[X]	[ ]	[ ]
<b>b. Composition:</b>			
Epoxy _____	[X]	[ ]	[ ]
Synthetic _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Concrete Topping:</b>			
Clear Sealant <u>USED IN THE JANITORS, CLOSETS &amp; MECH. RMS.</u>	[ ]	[ ]	[X]
Abrasive _____	[X]	[ ]	[ ]
Epoxy _____	[X]	[ ]	[ ]
Aggregate _____	[X]	[ ]	[ ]
<b>d. Resilient:</b>			
Vinyl Tile <u>USED IN THE CORRIDORS, CLASSROOMS, &amp; OFFICES</u>	[ ]	[ ]	[X]
Linoleum _____	[X]	[ ]	[ ]
Vinyl _____	[X]	[ ]	[ ]
Rubber _____	[X]	[ ]	[ ]
Cork _____	[X]	[ ]	[ ]
<b>e. Ceramic Tile</b> <u>USED IN THE RESTROOMS</u>	[ ]	[X]	[ ]
<b>f. Masonry</b> _____	[X]	[ ]	[ ]
<b>g. Terrazzo</b> _____	[X]	[ ]	[ ]
<b>h. Wood</b> _____	[X]	[ ]	[ ]
<b>i. Metal</b> _____	[X]	[ ]	[ ]

**B. COMMENTS**

1. TILE FLOORS HAVE BEEN PATCHED AND MARKED WHERE FIXED SEATING HAS BEEN REMOVED. REPLACEMENT OF THE TILE FLOORS WOULD IMPROVE THE APPEARANCE OF THE CLASSROOMS AND CORRIDORS.

**C. COMPONENT RATING:**     $( \underline{\$599,331} ) \times ( \underline{0.68} ) = \underline{\$407,545}$

Possible	Condition	Component
Value	Value Multiplier	Value

**CEILING AND FINISHES**

FAC # 030 DATE: 2-1-93 INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

**a. System Type:**

	N/A	Sat	Att
Exposed <u>CONCRETE EXPOSED IN MECHANICAL &amp; STORAGE ROOMS</u>	[ ]	[X]	[ ]
Applied to Structure _____	[X]	[ ]	[ ]
Suspended <u>2' X 2' ACOUSTIC TILE PANELS</u>	[ ]	[ ]	[X]

**b. Materials:**

Drywall <u>LIMITED USE IN SOME OFFICE AREAS</u>	[ ]	[X]	[ ]
Plaster _____	[X]	[ ]	[ ]
Mineral Fiber Board <u>ACOUSTIC TILES</u>	[ ]	[X]	[ ]
Metal Pan _____	[X]	[ ]	[ ]
Luminous Panels _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**c. Finishes:**

Paint _____	[X]	[ ]	[ ]
Mineral Fiber <u>CEILING TILES HAVE BEEN PAINTED</u>	[ ]	[X]	[ ]
Fabric _____	[X]	[ ]	[ ]
Prefinished _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**d. Openings & Inserts:**

Air Distribution <u>REGISTERS ARE LOCATED IN DROPPED CEILING</u>	[ ]	[ ]	[X]
Lighting Fixtures <u>SUSPEND FROM FINISHED CEILING</u>	[ ]	[ ]	[X]
Access Panels _____	[X]	[ ]	[ ]
Skylights _____	[X]	[ ]	[ ]
Fire Protection _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

1. THE LIGHT FIXTURES AND CEILING REGISTERS ARE DIRTY AND NEED TO BE CLEANED.
2. THE CEILING TILES HAVE BEEN DAMAGED IN SOME AREAS WHERE REPAIR WORK HAS BEEN PERFORMED.
3. THE CEILING TILES HAVE BEEN PAINTED WITH FLAT WHITE PAINT IN THE LAST FEW YEARS.

**C. COMPONENT RATING:**     $( \underline{\$852,847} ) \times ( \underline{0.56} ) = \underline{\$477,594}$

Possible
Condition
Component  
Value
Value Multiplier
Value

**CONVEYING**

FAC # 030 DATE: 3-1-93 INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

**a. Elevators:**

	N/A	Sat	Att
Number <u>TWO (2)</u>	[ ]	[X]	[ ]
Type <u>OTIS, PASSENGER, 6 LANDINGS</u>	[ ]	[X]	[ ]
Speed <u>200 FEET PER MINUTE</u>	[ ]	[X]	[ ]
Capacity (lbs) <u>2,000 POUND CAPACITY</u>	[ ]	[X]	[ ]
Dimensions <u>EAST (57D X 80W) WEST (51D X 80W)</u>	[ ]	[X]	[ ]
Door Operation:			
Center <u>CENTER OPENING DOORS</u>	[ ]	[X]	[ ]
To Side <u>(WEST ELEVATOR HAS FRONT &amp; REAR DOORS)</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:**

1. WHEELCHAIR ACCESSIBLE CONTROLS ARE A MECHANICAL LINKAGE SYSTEM THAT IS WORN & DIFFICULT TO MAINTAIN (WEST ELEVATOR).
2. BOTH ELEVATORS HAVE EMERGENCY PHONES.
3. THE EAST ELEVATOR HAS WHEELCHAIR ACCESSIBLE CONTROLS.
4. BOTH ELEVATORS ARE IN NEED OF A MODERNIZATION.

**C. COMPONENT RATING:**     $\frac{(\$443,038)}{\text{Possible Value}} \times \frac{(0.63)}{\text{Condition Value Multiplier}} = \frac{\$279,114}{\text{Component Value}}$

**MECHANICAL/PLUMBING**

FAC # 030 DATE: 2-1-93 INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

**a. Services Available:**

	N/A	Sat	Att
Cold Water 6" SUPPLY LINE, ROOM 69	[ ]	[X]	[ ]
Hot Water 3" DHWS, ROOM 18	[ ]	[X]	[ ]
Acid Waste	[X]	[ ]	[ ]
Oxygen	[X]	[ ]	[ ]
Natural Gas	[X]	[ ]	[ ]
Vacuum	[X]	[ ]	[ ]
Distilled Water	[X]	[ ]	[ ]
Compressed Air	[X]	[ ]	[ ]

**b. Piping & Fittings:**

Cast Iron USED FOR WASTE WATER STACKS	[ ]	[X]	[ ]
Copper Tubing USED FOR SMALLER WATER LINES	[ ]	[X]	[ ]
Plastic	[X]	[ ]	[ ]
Steel USED FOR LARGER WATER LINES & WASTE LINES	[ ]	[X]	[ ]
Glass	[X]	[ ]	[ ]

**c. Water Heaters:**

Electric	[X]	[ ]	[ ]
Gas	[X]	[ ]	[ ]
Oil	[X]	[ ]	[ ]
Steam Converter	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

**d. Drainage:**

Storm Drains	[X]	[ ]	[ ]
Sanitary Drainage	[X]	[ ]	[ ]
Combined Storm/San. 1 @ 10", 3 @ 4", 1 @ 6"	[ ]	[X]	[ ]
Floor Drains	[X]	[ ]	[ ]

**e. Fixtures:**

Water Closets	[ ]	[X]	[ ]
Urinals	[ ]	[X]	[ ]
Lavatories	[ ]	[X]	[ ]
Showers	[X]	[ ]	[ ]
Kitchen Sinks PULLMAN KITCHENS INSTALLED IN OFFICE AREA	[ ]	[X]	[ ]
Service Sinks	[X]	[ ]	[ ]
Drinking Fountains	[X]	[ ]	[ ]
Electric Water Coolers LOCATED ON EACH FLOOR	[ ]	[X]	[ ]

**f. Sprinkler Systems:**

Wet	[X]	[ ]	[ ]
Dry	[X]	[ ]	[ ]
Water Storage/Supply	[X]	[ ]	[ ]

**g. Standpipe Systems:**

Wet	[X]	[ ]	[ ]
Dry	[X]	[ ]	[ ]
Valves	[X]	[ ]	[ ]
Hose Cabinets	[X]	[ ]	[ ]

**B. COMMENTS:**

1. THE PLUMBING SYSTEM IS AGING, BUT SERVICEABLE. A FEW OF THE FIXTURES HAVE BEEN CHIPPED AND CRACKED.

**C. COMPONENT RATING:** ( \$985,759 ) x ( 0.82 ) = \$808,322  
                                     Possible                                    Condition                                    Component  
                                     Value                                    Value Multiplier                                    Value

**MECHANICAL/HEATING**

FAC # 030 DATE: 2-5-93 INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

<b>a. Heat Source:</b>	N/A	Sat	Att
Central Plant Steam _____	[X]	[ ]	[ ]
Central Plant Hot Water <u>8 INCH HWS, RM 18</u>	[ ]	[X]	[ ]
Boilers: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Furnace: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Heat Pump: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Burners: gas _____	[X]	[ ]	[ ]
oil _____	[X]	[ ]	[ ]
<b>b. System Type:</b>			
Steam _____	[X]	[ ]	[ ]
Hot Water <u>USED FOR PERIMETER CONVECTORS &amp; AIR HANDLERS</u>	[ ]	[X]	[ ]
Air _____	[X]	[ ]	[ ]
Electric _____	[X]	[ ]	[ ]
Solar _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Space Equipment:</b>			
Radiators _____	[X]	[ ]	[ ]
Convectors <u>USED FOR THE PERIMETER HEAT</u>	[ ]	[X]	[ ]
Finned Tube _____	[X]	[ ]	[ ]
Baseboard _____	[X]	[ ]	[ ]
2-Pipe Fan Coil _____	[X]	[ ]	[ ]
Unit Ventilators _____	[X]	[ ]	[ ]
Multizone <u>VENTILATION SYSTEM WITH HOT WATER COILS</u>	[ ]	[X]	[ ]
Double Duct _____	[X]	[ ]	[ ]
Terminal Reheat _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>d. Control Type:</b>			
Pneu HONEYWELL PNEUMATIC CONTROLS _____	[ ]	[X]	[ ]
Electric _____	[X]	[ ]	[ ]
Electronic _____	[X]	[ ]	[ ]
DDC <u>LANDIS AND GYRS SYSTEM WILL BE OPERATIONAL 1/94</u>	[X]	[ ]	[ ]
Manual Valves <u>LOCATED ON PERIMETER CONVECTORS</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

1. BUILDING IS ADEQUATELY HEATED. WINDOWS ARE OCCASIONALLY OPENED DURING THE WINTER MONTHS TO COOL CLASSROOMS.

**C. COMPONENT RATING:**    ( \$1,042,369 ) x ( 0.71 ) = \$740,082  
                                  Possible                    Condition                    Component  
                                  Value                    Value Multiplier            Value



ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 030 DATE: 2-1-93 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

(a) Service:

Substation CIRCUITS PGN9/PGS3

Primary Voltage 13,200 VOLTS

Transformer:

Manufacture	Type	KVA	Secondary Voltages
<u>GE M163096</u>	<u>SILICONE</u>	<u>500</u>	<u>480Y/277</u>
<u>GE M1630998</u>	<u>SILICONE</u>	<u>500</u>	<u>208Y/120</u>

(b) Distribution System:

Panelboard (type) CIRCUIT BREAKERS

Voltage 480Y/277 AND 208Y/120

Amperage 1600 AMPS

Conduit ALUMINUM & STEEL

Conductor COPPER

Wire (type) VARIES

Armored Cable NONE

Other N/A

(c) Emergency System:

General or (type & capacity) 7.5 KVA BATTERY INVERTOR

B. COMMENTS:

1. THE DUALLITE 7.5 KVA INVERTOR HAS 15 BATTERIES THAT ARE OVERLOADED AND WILL ONLY OPERATE FOR 15 MINUTES INSTEAD OF THE 90 MINUTES THEY WERE DESIGNED TO OPERATE.

C. COMPONENT RATING:  $( \underline{\$206,751} ) \times ( \underline{0.98} ) = \underline{\$202,616}$

Possible	Condition	Component
Value	Value Multiplier	Value





**BUILDING PERIMETER EVALUATION**

FAC # 030 DATE: 2-1-93 INSPECTOR: RDL

**A. SYSTEM DESCRIPTION**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
1. Structural Access:			
Driveway <u>W. SEVENTH AVENUE</u>	[ ]	[X]	[ ]
Loading Dock <u>NONE, DOUBLE DOOR ACCESS TO TRASH ROOM</u>	[ ]	[X]	[ ]
Sidewalks			
Front <u>SOUTH SIDE ALONG 17TH AVENUE</u>	[ ]	[ ]	[ ]
Side <u>WEST SIDE, BRICK PAVERS</u>	[ ]	[ ]	[ ]
Rear <u>EAST SIDE, CONCRETE WALK</u>	[ ]	[ ]	[ ]
Steps			
Front <u>NONE</u>	[X]	[ ]	[ ]
Side _____	[X]	[ ]	[ ]
Rear _____	[X]	[ ]	[ ]
Handicap Ramp <u>NONE</u>	[X]	[ ]	[ ]
2. Lawn and Landscaping:			
Lawn <u>THE NORTH SIDE OF THE BUILDING IS UNDER CONSTRUCTION</u>	[ ]	[ ]	[X]
Shrubs <u>EAST SIDE HAS SHRUBS OVERGROWN</u>	[ ]	[ ]	[X]
Trees <u>ARE BEING PROTECTED FROM CONSTRUCTION TRAFFIC</u>	[ ]	[X]	[ ]
Undesirable Insect <u>COULD NOT EVALUATE</u>	[X]	[ ]	[ ]
Bedding Material <u>COULD NOT EVALUATE</u>	[X]	[ ]	[ ]
Watering System <u>NONE</u>	[X]	[ ]	[ ]
3. General Site Information:			
Signage <u>LOCATED ON 17TH AVENUE</u>	[ ]	[X]	[ ]
Address Identification <u>LOCATED ON SITE SIGN</u>	[ ]	[X]	[ ]
Security Lights <u>LOCATED ON THE SIDE OF THE BUILDING</u>	[ ]	[X]	[ ]
Street Lights <u>ALONG 17TH AVENUE</u>	[ ]	[X]	[ ]
Drainage <u>DIFFICULT TO EVALUATE WITH CONSTRUCTION MESS</u>	[ ]	[ ]	[X]
Storm Drains <u>LOCATED IN 17TH AVENUE</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

1. THE SEWER SEPARATION PROJECT HAS EQUIPMENT & CONCRETE PIPE STORED IN THE LAWN & SIDEWALK AREAS.
2. THE SIDEWALK ALONG 17TH AVENUE HAS BEEN DAMAGED BY TRUCKS PARKING ON THE SIDEWALK FROM THE DERBY HALL CONSTRUCTION.

**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. 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, engineer's 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 and redecorating, wholesale replacement of building and system components. Ongoing maintenance, replacement and renovation projects are not included.

(b) Includes exterior building walls and attached items.

(c) Includes the entrance steps up 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