

FACILITY AUDIT REPORT
DREESE LABORATORIES, Bldg 279
JUNE 1995

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**EXECUTIVE SUMMARY AND PROJECT LIST FOR
DREESE LABORATORIES BUILDING**

Dreese Laboratories is comprised of a two building system. The first building was built in 1969 consisting of eight floors and the second building attached to the first was completed in 1994 and consists of nine floors for a combined gross square footage of 184,352. The original section is in relatively good condition except for the roof, which should be replaced within the next five to ten years and some cracks in the masonry, which should be sealed. Five windows in the new and the old sections have cracked and need to be replaced. The flashing in the new roof as well as the old shows signs of leaking and should be repaired.

The interiors of both sections are in good condition. Three air handlers supply most of the buildings with cooling while the old section is heated by fin-tubed radiators and the new section is heated with radiant panels. There is a clean lab in the new section that is supplied by separate air handlers. The elevators were up-graded during the new construction and a new passenger and a new freight elevator were added at that time. All other services are functioning adequately.

PROPOSED MAINTENANCE PROJECTS:

A. Corrective Maintenance Projects: **Control #**

Clean and seal bricks on old Dreese
and repair all flashing as needed. \$ 75,000

Replace roof on old Dreese. 110,000

Sub Total \$ 185,000

B. Building Improvement/Addition Project:

No projects identified

Sub Total \$

C. Projected Component Replacement Projects:

No projects identified

Total cost for estimated projects = \$ 185,000

JUNE 95

GENERAL BUILDING INFORMATION

DREESE LABORATORIES #279

BUILDING ADDRESS: 2015 NEIL AVENUE

GROSS SQ. FT.: 184,352

NET ASSIGNABLE SQ. FT.: 92,026

MECHANICAL/CUSTODIAL AREA SQ. FT.: 23,093

YEAR OF CONSTRUCTION: 1969, 1994

YEAR OF LAST RENOVATION: N/A

NUMBER OF STORIES/BASEMENT: 8 FLOORS AND A GROUND FLOOR

AIR CONDITIONING (Percentage): 95%

CURRENT USE: OFFICES, LABS AND CLASSROOMS

TYPE OF CONSTRUCTION: REINFORCED CONCRETE FRAME WITH MASONRY, CONCRETE, AND GLASS EXTERIOR

ESTIMATED REPLACEMENT COST: \$ 30,048,000 *

WHEELCHAIR ACCESSIBILITY: MAIN ENTRANCE AT THE SOUTH AND NORTH SIDE GRADE LEVEL. THREE ELEVATORS ALLOW ACCESS TO ALL FLOORS.

OVERALL BUILDING CONDITION: SATISFACTORY**

NUMBER OF EXIT STAIRWAYS: 5

AREA SHOP RESPONSIBILITY: NORTH SHOP

* Replacement Cost assigned September 1994 by The Office of Resource Planning and Institutional Analysis.

** Office of Resource Planning and Institutional Analysis C-1 Report Condition Code.

BUILDING SYSTEMS INFORMATION

DREESE LABORATORIES # 279

HEATING:

Source STEAM FROM THE UNIVERSITY POWER PLANT TO LOCAL CONVERTER
Type Heating System HOT WATER
Steam (Line size, valve location) 6" SUPPLY & 3" COND RETURN, 029M & 075M
Building Htg Water (line size, valve location) LOCAL CONV. IN 075 & 029M

VENTILATION SYSTEM:

VAV THROUGHOUT WITH ONE DX UNIT FOR ROOM 531 AND ONE DX UNIT FOR EL. MECH.

COOLING:

Bldg % 95 Chillers 289 TON ABSORPTION, 350 TON SCREW
Window Units 0 Thru-the-wall 0 Direct exp. units 2

HVAC CONTROL SYSTEM:

DIRECT DIGITAL CONTROL - JOHNSON IN THE OLD AND POWERS IN THE NEW

ELECTRIC:	Source	Size(KVA)	Primary/Secondary	Switchgear & Main Disc. (Rm)
1.	<u>BUCKEYE PGN5/PGS5</u>	<u>500</u>	<u>13,200/(208/120)</u>	<u>036M</u>
2.	<u>BUCKEYE PGN5/PGS5</u>	<u>500</u>	<u>13,200/(480/277)</u>	<u>050M</u>
3.	<u>BUCKEYE PGN5/PGS5</u>	<u>1500</u>	<u>13,200/(208/120)</u>	<u>050M</u>

PLUMBING:

Water (size, valve location) 4", AT TUNNEL, 8" FIRE LINE
Gas (size, valve location) NONE
Domestic Hot Water (size, valve location) 3" SUPPLY, 3" TO 3/4" RETURN, 064M
Compressed Air (size, location) 1-1/2", 074M

SEWERS: Storm 8" AND 6" Sanitary 6" AND 4"

METERS:

Gas (size, location) N/A
Water (size, location) 4", AT TUNNEL IN ROOM 064M
Electric (location) 050M

ALARM SYSTEMS:

Fire Alarm YES Panel Location AT RM 113
Fire Pump YES Pump Location 064M
Sprinklers YES Panel Location 074A
Other Alarms SECURITY SYSTEM FOR CLEAN ROOM

ELEVATORS:

Number 5 Type (passenger, freight) 3 PASSENGER, 1 FREIGHT, 1 SERVICE
Manufacturer 2-HAUGHT, 3-MONT. Size 4 @ 55" X 85", 1 @ 50" X 68"

EMERGENCY GENERATOR: Size 594 KVA Location RM AO77M

ASBESTOS SURVEY (1986):

ASBESTOS IDENTIFIED IN 1986 WAS PARTIALLY REMOVED IN 1992.
ASBESTOS REMAINS IN ROOMS O36T, 064M AND 074 AS WELL AS THE OLD PENTHOUSE.

DREESE LABORATORIES BUILDING NARRATIVE

HISTORY

The current Dreese Laboratories building was built in two stages. The first building was built in 1969, while the second building attached to the first, was completed in 1994. The building is now occupied by the Electrical Engineering Department and the Computer and Information Science Department. The original square footage was expanded from 79,478 square feet to 184,352 square feet. Facility use by category is: 45% office and office-related use, 26% laboratories space, 20% mechanical/custodial/toilet, and 9% classroom or miscellaneous uses.

PRIMARY SYSTEMS

The nine-story structure is supported by concrete piers. Concrete footers support load-bearing concrete walls. Cast-in-place concrete columns support concrete floors throughout. The exterior consists of a brick and precast concrete panel veneer. The roof deck is structural concrete with built-up roof and concrete pads on the old section and on the new section a single-ply membrane with an aluminum gravel stop. There is a layer of tapered light-weight insulating concrete.

The roof cover on the original building has a large number of blisters. While there have not been many reported roof leaks, the age and condition of this roof warrants a roof replacement project. The project should be accomplished within the next five to ten years.

The exterior of the building is in good condition except for some cracks observed on the original building and at the penthouse wall of the old section of the mechanical room.

Most of the building glazing is fixed-pane with curtain walls on the east and south side of the first floor. There are 320 small awning style windows on all sides of the building. Although the windows are all new, several windows on the south and the east side have cracked.

SECONDARY SYSTEMS

Interior partition walls are composed of concrete block, demountable partition wall system, prefabricated panel system and metal stud and drywall walls. Surface finishes are generally in good condition and consist primarily of paint on the concrete block and drywall. The only area needing attention is the ground floor corridors of the original building. In this area the walls need to be repainted.

The primary floor covering in the building is vinyl tile with a terrazzo floor in the public areas of the first floor. The administrative offices have rolled carpeting. The restroom floors and walls are covered with ceramic tile. The floors are generally in good condition.

Ceilings are predominantly suspended acoustical tile. The restroom ceilings are drywalled. The ceiling tiles of the ground floor in the old section need to be replaced.

SERVICE SYSTEMS

The building has three passenger elevators, one service elevator and one freight elevator. All five elevators are in good condition.

The original building's perimeter is heated with a hot water fin-tubed heating system and the new building is heated by radiant panels. The buildings are cooled by a variable air volume system utilizing two York chillers and two Marley cooling towers. One chiller and one of the cooling tower were installed in 1994. The other chiller and cooling tower were installed in 1992. The system has a total capacity of 640 tons. The heating and cooling capacity is adequate to meet the building needs.

Building HVAC systems are controlled by Direct Digital Control and pneumatic systems. No problems were found with either system.

Heating hot water is supplied by steam converters. The steam converters in the basement supply heating hot water for the radiation system, the radiant panels and unit heaters. Two smaller converters supply domestic hot water for the old and the new sections of Drees Laboratories. Supply is adequate. There were no major plumbing problems identified in the maintenance workorder system. Plumbing fixtures are still serviceable throughout the facility although the surface finish on most of the faucets, in the old section, are worn. Two problems were noticed. The urinal flush valves in the old section of Drees were not producing a sufficient flow.

ELECTRICITY

The building is equipped with two 500 KVA transformers and one 1500 KVA transformer. Each has a primary voltage of 13,200. One has a secondary voltage of 480/277 and the others have secondary voltage of 208/120. The Physical Facilities Department's Utilities Division's records indicate that the transformers have sufficient capacity. There is an abundant supply of electrical power available. There is adequate electrical capacity and ample spare circuit space in all panels.

The building lighting system is predominantly 4-tube fluorescent fixtures which are clean and in good condition throughout. There is an adequate supply and distribution of convenience outlets throughout the building.

SAFETY STANDARDS

The building is equipped with portable fire extinguishers and standpipes in all three stairways. Smoke detectors are located in the HVAC ductwork. There are sprinklers throughout the new section of Drees Laboratories. The building has lighted exit signs and an emergency lighting system.

The entrance on the south side of the building is at grade level and has a door that is equipped with an electric opener. There is a ramp on the north side of the building that gives access to the north entrance which is also equipped with an electric opener. All floors are accessible from the elevators.

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 the steam pipes and heat exchanger in room 064 as well as in the hot water tank insulation located in room 064. Asbestos was also found on the fifth and seventh floors and the penthouse. Asbestos containing material was removed in the early nineties from the cooling tower and the metal ceiling panels in old Drees Lab.

BUILDING PERIMETER

There is a driveway for the dock located on the west side of the building. The east side of the building has a paver plaza which has just been installed and is in very good condition. The walkway leading to the plaza on the west side of the building has problems with the newly installed pavers. A drainage problem has been identified on the west side of the building during heavy rain storms. The entrances to the facility are well lighted and secure. All the landscaping around the building was planted after the recent addition and is in good condition except for the plantings at the exterior amphitheater where rain has caused the soil to erode.

Maintenance Projects (LESS THAN \$5000)

1. Repair flashing leaks and repair walkways on roof of new section.
Workorder # 01-5064-181126-73
2. Check and repair flush'o-meters on urinals and check for missing lav handle parts.
Workorder # 01-5064-181209-73
3. Replace ground floor ceiling tiles in old section as needed and touch-up paint the walls in this area.
Workorder # 01-5064-181210-65
4. Clean the exhaust vent grilles in restrooms of old section.
Workorder # 01-5063-014735-45
5. Reseal crack at base of east storefront window and adjust door at west side to close properly.
Workorder # 01-5064-181208-72

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 279 FACILITY NAME: DREESE LABORATORIES
 DATE: 6/95 INSPECTOR: AUGUSTUS VAN BUREN
 YEAR CONSTRUCTED: 1969 & 1994
 GROSS SQ FT: 184,352 NET SQ FT: 114,587
 REPLACEMENT COST \$ 30,048,000 *

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	4.6	1,382,208	.96	1,326,920
Columns and Beams	10.5	3,155,040	.96	3,028,838
Exterior Walls	7.4	2,223,552	.90	2,001,197
Windows & Doors	3.7	1,111,776	.95	1,056,187
Roofing	2.4	721,152	.71	512,018
Partitions & Drs.	6.1	1,832,928	.93	1,704,623
Wall Finishes	2.4	721,152	.83	598,556
Floor Finishes	4.5	1,352,160	.91	1,230,466
Ceilings & Finish	6.4	1,923,072	.97	1,865,380
Conveying	3.3	991,584	.93	922,173
Plumbing	13.0	3,906,240	.86	3,359,366
Heating	7.8	2,343,744	.84	1,968,745
Cooling & Vent.	10.4	3,124,992	.81	2,531,244
Elec. Ser. & Dist	1.6	480,768	.89	427,884
Lighting & Power	10.6	3,185,088	.87	2,771,027
Safety Standards	5.3	1,592,544	.81	1,289,961
TOTALS	100.00	30,048,000		26,594,585

III. BUILDING RATING SUMMARY

Overall Building Rating = 89%

* Replacement Cost assigned September 1994 by The Office of Resource Planning and Institutional Analysis 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 #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Footings:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Individual Footings & Piers <u>UNDER COLUMNS</u>	[]	[X]	[]
Continuous Footings <u>LOCATED UNDER WALLS AT THE PERIMETER</u>	[]	[X]	[]
Grade Beams _____	[X]	[]	[]
Piles _____	[X]	[]	[]
Caissons _____	[X]	[]	[]
b. Foundation Wall Materials:			
Steel _____	[X]	[]	[]
Concrete Cast-in-place _____	[]	[X]	[]
Concrete Block _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Waterproofing and Underdrain:			
Coating _____	[X]	[]	[]
Membrane <u>EXTERIOR OF FOUNDATION WALLS AND UNDER THE SLAB</u>	[]	[X]	[]
Board <u>1 1/2" INSULATION</u>	[]	[X]	[]
Drain Tile <u>6" TILE AT THE PERIMETER</u>	[]	[X]	[]
d. Slab on Grade (floor):			
Plain _____	[X]	[]	[]
Reinforced <u>6" SLAB THICKENED</u>	[]	[X]	[]
e. Special Substructures:			
_____	[X]	[]	[]

B. COMMENTS:
NO PROBLEMS OBSERVED.

C. COMPONENT RATING: (\$1,382,200) X (96 %) = \$1,326,900
 Possible Condition Component
 Value Value Multiplier Value

COLUMNS AND BEAMS

FAC #279 DATE 6/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Columns and Beams:

	N/A	Sat	Att
Concrete-in-place THROUGHOUT _____	[]	[X]	[]
Precast Concrete _____	[X]	[]	[]
Steel _____	[X]	[]	[]
Steel Fireproofing _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

b. Floors:

Concrete Slab _____	[]	[X]	[]
Precast Slab _____	[X]	[]	[]
Metal Deck _____	[X]	[]	[]
Metal Deck w/concrete fill _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Roof System:

Flat _____	[]	[X]	[]
Pitched _____	[X]	[]	[]
Concrete _____	[]	[X]	[]
Steel _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

NO DEFLECTION OR OTHER STRUCTURAL PROBLEMS OBSERVED.

C. COMPONENT RATING: (\$3,155,000) x (96 %) = \$3,028,800

Possible	Condition	Component
Value	Value Multiplier	Value

EXTERIOR WALLS

FAC #279 DATE 6/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Walls:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Concrete _____	[X]	[]	[]
Masonry BRICK _____	[]	[]	[X]
Metal Siding AROUND COOLING TOWER _____	[]	[X]	[]
Wood Siding _____	[X]	[]	[]
Other PRECAST CONCRETE PANELS AND GLASS CURTAIN WALL _____	[]	[X]	[]
b. Finishes:			
Stucco _____	[X]	[]	[]
Paint _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

THE MASONRY HAS A FEW CRACKS THAT NEED TO BE SEALED.

C. COMPONENT RATING: (\$2,223,600) x (90 %) = \$2,001,200
 Possible Condition Component
 Value Value Multiplier Value

EXTERIOR WINDOWS & DOORS

FAC #279 _____ DATE 6/95 _____ INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Windows type & number:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Wood _____	[X]	[]	[]
Steel _____	[X]	[]	[]
Alum <u>CURTAIN WALL UNITS WITH SOME AWNING TYPE WINDOWS</u>	[]	[]	[X]
Other <u>- FOR A TOTAL OF 945 WINDOWS</u>	[X]	[]	[]
b. Window glazing:			
Single pane _____	[X]	[]	[]
Double pane _____	[]	[]	[X]
Other <u>BLOCK GLASS</u>	[]	[X]	[]
c. Doors type & number:			
Wood _____	[X]	[]	[]
Steel <u>3 SINGLE AND 2 DBL.MECHANICAL AREAS OR STAIRWAYS</u>	[]	[X]	[]
Alum <u>7 DOUBLE AND 1 OVERHEAD</u>	[]	[X]	[]
Other _____	[X]	[]	[]
d. Shading Devices:			
Types <u>CURTAINS ON THE FIRST FLOOR OF THE OLD SECTION</u>	[]	[X]	[]

B. COMMENTS:

SEVERAL WINDOWS WERE CRACKED ON THE SOUTH AND THE EAST SIDE. THE GLASS CURTAIN WALL WAS REPLACED ON THE OLD PART OF DREESE.

C. COMPONENT RATING: $(\$1,111,800) \times (\underline{95} \%) = \underline{\$1,056,200}$

Possible	Condition	Component
Value	Multiplier	Value

ROOFING

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Roof Covering:			
Built-up _____	[X]	[]	[]
Built-up w/gravel <u>ON THE OLD SECTION WITH CONCRETE PADS</u>	[]	[]	[X]
Asphalt Shingle _____	[X]	[]	[]
Copper _____	[X]	[]	[]
Glass (Skylight) _____	[X]	[]	[]
Slate _____	[X]	[]	[]
Spanish Tile _____	[X]	[]	[]
Metal _____	[X]	[]	[]
Other <u>SINGLE-PLY MEMBRANE ON THE NEW SECTION</u>	[]	[X]	[]
 c. Flashing:			
Base & Counter <u>BITUMEN-COATED FELT</u>	[]	[]	[X]
Cap <u>METAL</u>	[]	[X]	[]
Through Wall _____	[X]	[]	[]
Valley & Ridge _____	[X]	[]	[]
 d. Gravel Stop & Edge Strips:			
Type <u>ALUM. AND STAIN. STEEL ON NEW AND STEEL ON OLD</u>	[]	[X]	[]
 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>2" RIGID</u>	[]	[X]	[]

B. COMMENTS

THERE ARE A LARGE NUMBER OF BLISTERS OVER THE OLD SECTION OF DREESE LAB. THE ROOF OVER THE NEW SECTION IS IN GOOD CONDITION EXCEPT FOR THE FLASHING, WHICH IS ALLOWING SOME LEAKS DOWN THE SIDE OF THE BUILDING. THE ROOF OVER THE OLD SECTION SHOULD BE REPLACED IN THE NEXT FIVE TO TEN YEARS.

C. COMPONENT RATING: (\$721,200) x (71 %) = \$512,000
 Possible Condition Component
 Value Value Multiplier Value

PARTITIONS & DOORS

FAC #279280 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Partition Framing:	N/A	Sat	Att
Concrete Block <u>LIMITED</u>	[]	[X]	[]
Glazed Block _____	[X]	[]	[]
Wood Stud _____	[X]	[]	[]
Metal Stud <u>EXTENSIVELY</u>	[]	[X]	[]
Structural Tile _____	[X]	[]	[]
Rated _____	[X]	[]	[]
Other <u>DEMOUNTABLE AND FIBER BOARD SECTIONS</u>	[]	[X]	[]
b. Special partitions and Walls:			
Toilet <u>METAL</u>	[]	[X]	[]
Screen Walls _____	[X]	[]	[]
Gate _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Wall Material:			
Plaster _____	[X]	[]	[]
Plaster Board <u>USED WITH METAL STUDS</u>	[]	[X]	[]
Glass _____	[X]	[]	[]
Plywood _____	[X]	[]	[]
Paneling <u>IN FACULTY LOUNGE AND AUDITORIUM</u>	[]	[X]	[]
Trim & Wainscot _____	[X]	[]	[]
Tile/Glazed <u>RESTROOMS</u>	[]	[X]	[]
Other <u>BRICK ON FIRST FLOOR AND FIBER BOARD</u>	[]	[X]	[]
d. Interior Doors & Frames:			
Met Door/Met Frame <u>MAINTENANCE AND FIRE DOORS AT STAIRS</u>	[]	[X]	[]
Wood Door/Wood Frame _____	[X]	[]	[]
Wood Door/Metal Frame <u>PREDOMINANT</u>	[]	[X]	[]
Glazing <u>LIMITED</u>	[]	[X]	[]
Rollup _____	[X]	[]	[]
Sliding _____	[X]	[]	[]
Other _____	[X]	[]	[]
e. Hardware:			
Door Closers _____	[]	[X]	[]
Lock Sets _____	[]	[X]	[]
Kick/Push Plates _____	[]	[X]	[]
Thresholds _____	[]	[X]	[]
Panic Devices _____	[]	[X]	[]
Security & Detection <u>FOR THE CLEAN ROOM - MAG CARD</u>	[]	[X]	[]
Automatic Openers <u>HANDICAPPED ENTRANCE DOORS</u>	[]	[X]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

PARTITIONS AND DOORS ARE IN GOOD CONDITION.

C. COMPONENT RATING: (\$1,832,900) X (93 %) = \$1,704,600
 Possible Condition Component
 Value Value Multiplier Value

WALL FINISHES

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint <u>PREDOMINANT FINISH IN THE OLD SECTION</u>	[]	[X]	[]
b. Wall Coating _____	[X]	[]	[]
c. Wall Coverings _____	[X]	[]	[]
d. Paneling			
<u>Prefinished LOUNGE AND AUDITORIUM</u>	[]	[X]	[]
<u>Plank</u>	[X]	[]	[]
e. Cork _____	[X]	[]	[]
f. Wallpaper <u>IN THE NEW SECTION</u>	[]	[X]	[]
g. Ceramic Tile <u>RESTROOMS</u>	[]	[X]	[]
h. Trim & Wainscot _____	[X]	[]	[]
i. Decoration _____	[X]	[]	[]
j. Glass _____	[X]	[]	[]
k. Other <u>WALL PAPER</u>	[]	[X]	[]

B. COMMENTS

THE PRIMARY WALL FINISHES IN THE OLD PART OF DREESE IS PAINT WHILE WALLPAPER IS THE PRIMARY FINISH IN THE NEW PART OF DREESE. A SMALL PART OF THE OLD SECTION OF DREESE HAS A BRICK VENEER.

C. COMPONENT RATING: (\$721,200) x (83 %) = \$598,600
 Possible Condition Component
 Value Value Multiplier Value

FLOOR FINISHES

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Carpet:			
Rolled OFFICE SPACE IN THE NEW SECTION OF DREESE	[]	[X]	[]
Tile	[X]	[]	[]
b. Composition:			
Epoxy	[X]	[]	[]
Synthetic	[X]	[]	[]
Other	[X]	[]	[]
c. Concrete Topping:			
Clear Sealant MAINTENANCE ROOMS	[]	[X]	[]
Abrasive	[X]	[]	[]
Epoxy	[X]	[]	[]
Aggregate	[X]	[]	[]
d. Resilient:			
Vinyl Tile PREDOMINANT IN NEW DREESE	[]	[X]	[]
Linoleum 9" X 9" OLD DREESE	[]	[]	[X]
Vinyl ROLLED IN CLEAN ROOM	[]	[X]	[]
Rubber	[X]	[]	[]
Cork	[X]	[]	[]
e. Ceramic Tile RESTROOMS	[]	[X]	[]
f. Masonry	[X]	[]	[]
g. Terrazzo FIRST FLOOR OF OLD AND NEW SECTION	[]	[X]	[]
h. Wood	[X]	[]	[]
i. Metal	[X]	[]	[]

B. COMMENTS

ALL FLOORS ARE IN GOOD CONDITION EXCEPT IN BASEMENT OF OLD DREESE WHERE LOOSE TILES WERE OBSERVED.

C. COMPONENT RATING: (\$1,352,200) X (91 %) = \$1,230,500
 Possible Condition Component
 Value Value Multiplier Value

CEILINGS AND FINISHES

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. System Type:	N/A	Sat	Att
Exposed MAINTENANCE ROOMS	[]	[X]	[]
Applied to Structure	[X]	[]	[]
Suspended PREDOMINANT	[]	[X]	[]
b. Materials:			
Drywall RESTROOMS	[]	[X]	[]
Plaster	[X]	[]	[]
Mineral Fiber Board SUSPENDED CEILING	[]	[X]	[]
Metal Pan	[X]	[]	[]
Luminous Panels	[X]	[]	[]
Other	[X]	[]	[]
c. Finishes:			
Paint	[X]	[]	[]
Fabric	[X]	[]	[]
Prefinished CEILING TILES	[]	[X]	[]
Other	[X]	[]	[]
d. Openings & Inserts:			
Air Distribution	[]	[X]	[]
Lighting Fixtures	[]	[X]	[]
Access Panels	[]	[X]	[]
Skylights	[X]	[]	[]
Fire Protection	[]	[X]	[]
Other	[X]	[]	[]

B. COMMENTS:

THE CEILINGS AND FINISHES ARE IN GOOD CONDITION.

C. COMPONENT RATING: (\$1,923,100) X (97 %) = \$1,865,400
 Possible Condition Component
 Value Value Multiplier Value

CONVEYING

FAC #279 _____ DATE 6/95 _____ INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Elevators:

	N/A	Sat	Att
Number 5	[]	[X]	[]
Type 3 PASSENGER, 1 SERVICE, 1 FREIGHT	[]	[X]	[]
Speed 300, 350 AND 125 FT/MIN	[]	[X]	[]
Capacity (lbs) PASSENGER & SERVICE 3500 EA., FR. 2000	[]	[X]	[]
Dimensions PASS. AND SEV. 55"X 85", FR. 50" X 68"	[]	[X]	[]
Door Operation:			
Center PASSENGER ELEVATORS AND SERVICE ELEVATOR	[]	[X]	[]
To Side FREIGHT	[]	[X]	[]
Handicapped-accessible controls _____	[]	[X]	[]

b. Lifts and Hoists:

Number A DUMB WAITER - NOT IN USE	[]	[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:

ONE PASSENGER ELEVATOR AND THE FREIGHT ELEVATOR ARE NEW. THE OTHER ELEVATORS WERE UPGRADED WITH THE ADDITION TO THE DREESE LAB.

C. COMPONENT RATING: (\$991,600) x (93 %) = \$922,200

Possible	Condition	Component
Value	Value Multiplier	Value

MECHANICAL/PLUMBING

FAC #279 DATE 6/95 INSPECTOR: ARJ

A. SYSTEM DESCRIPTION

a. Services Available:	N/A	Sat	Att
Cold Water 3" SUPPLY IN ROOM 074M, 3" GALV.IN OLD	[]	[X]	[]
Hot Water 3"	[]	[X]	[]
Acid Waste WITH NEUTRALIZING PIT OF RM 095H	[]	[X]	[]
Oxygen	[X]	[]	[]
Natural Gas	[X]	[]	[]
Vacuum 1 1/2"	[]	[X]	[]
Distilled Water DEIONIZED SYSTEM	[]	[X]	[]
Compressed Air LOCAL COMPRESSOR IN RM 074M	[]	[X]	[]
Other	[X]	[]	[]
b. Piping & Fittings:			
Cast Iron WATER LINES AND VENTS	[]	[X]	[]
Copper Tubing DOMESTIC WATER AND COMPRESSED AIR	[]	[X]	[]
Plastic FOR DI WATER	[]	[X]	[]
Steel FIRE WATER AND STEAM LINES	[]	[X]	[]
Glass FOR ACID WASTE	[]	[X]	[]
Other GALVANIZED IRON IN OLD DREESE	[]	[X]	[]
c. Water Heaters:			
Electric	[X]	[]	[]
Gas	[X]	[]	[]
Oil	[X]	[]	[]
Steam Converter RM 901M IN NEW AND RM 036M IN OLD	[]	[X]	[]
Other	[X]	[]	[]
d. Drainage:			
Storm Drains 8", 8" AND 6"	[]	[X]	[]
Sanitary Drainage 6", 4" AND 4"	[]	[X]	[]
Combined Storm/San.	[X]	[]	[]
Floor Drains RESTROOMS AND MECHANICAL	[]	[X]	[]
e. Fixtures:			
Water Closets 56	[]	[X]	[]
Urinals 26	[]	[X]	[]
Lavatories 51	[]	[X]	[]
Showers	[X]	[]	[]
Kitchen Sinks 1	[]	[X]	[]
Service Sinks 16	[]	[X]	[]
Drinking Fountains	[X]	[]	[]
Electric Water Coolers 19	[]	[X]	[]
f. Sprinkler Systems:			
Wet IN NEW SECTION	[]	[X]	[]
Dry	[X]	[]	[]
g. Standpipe Systems:			
Wet 4" PIPES - ONE AT EACH STAIRWAY	[]	[X]	[]
Dry	[X]	[]	[]
Valves LOCATED AT EACH STAIRWAY LANDING	[]	[X]	[]
Hose Cabinets NO HOSES	[]	[X]	[]

B. COMMENTS:

MAINTENANCE PERSONNEL DID NOT IDENTIFY ANY EXISTING PROBLEMS.

C. COMPONENT RATING: (\$3,906,200) X (86 %) = \$3,359,400

Possible	Condition	Component
Value	Value Multiplier	Value

MECHANICAL/HEATING

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Heat Source:	N/A	Sat	Att
Central Plant Steam 4" & 3" SUPPLY WITH 1 1/2" COND.RET.	[]	[X]	[]
Central Plant Hot Water	[X]	[]	[]
Boilers: Type	[X]	[]	[]
Size	[X]	[]	[]
Furnace: Type	[X]	[]	[]
Size	[X]	[]	[]
Heat Pump: Type	[X]	[]	[]
Size	[X]	[]	[]

b. System Type:			
Steam 6" LPS FROM PRESSURE REDUC. VALVES, RMS 036M & 074	[]	[X]	[]
Hot Water FROM STEAM CONVERTORS	[]	[X]	[]
Air	[]	[X]	[]
Multizone	[X]	[]	[]
Dual Duct	[X]	[]	[]
Terminal Reheat 8 TH FLOOR AND MISC. VAV UNITS	[]	[X]	[]
Variable Volume 3 MAIN AIR HANDLERS	[]	[X]	[]
Other PREHEAT UNITS	[]	[X]	[]

c. Space Equipment:			
Radiators FIN-TUBE RADIATOR, IN THE OLD SECTION	[]	[X]	[]
Convectors	[X]	[]	[]
2-Pipe Fan Coil AT ENTRANCES	[]	[X]	[]
Unit Heaters MECHANICAL ROOMS	[]	[X]	[]
Other RADIANT PANELS IN THE NEW SECTION	[]	[X]	[]

d. Control Type:			
Pneu OLD SECTION - JOHNSON DDC	[]	[X]	[]
Electric	[X]	[]	[]
DDC POWERS IN NEW	[]	[X]	[]
Manual Valves	[X]	[]	[]

B. COMMENTS:

HEATING HOT WATER IS PROVIDED FOR THE RADIATOR SYSTEM AND THE RADIANT PANELS BY A STEAM CONVERTER LOCATED IN ROOM 074M AND ROOM 036M.

C. COMPONENT RATING: (\$2,343,700) X (84 %) = \$1,968,700

Possible	Condition	Component
Value	Value Multiplier	Value

COOLING & VENTILATING

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. System:			
Type <u>VAV IN OLD DREESE AND CV IN NEW, DX</u>	[]	[X]	[]
Capacity <u>TOTAL 639 TONS</u>	[]	[X]	[]
b. Chillers:			
Centrifugal _____	[X]	[]	[]
Reciprocating _____	[X]	[]	[]
Screw <u>YORK 350 T 1994, YORK 289 T 1992</u>	[]	[X]	[]
c. Cooling Towers:			
Type <u>2 MARLEYS (ONE UNIT DATES TO 1994 AND ONE TO 1992)</u>	[]	[]	[X]
Capacity <u>640 TONS TOTAL CAPACITY</u>	[]	[X]	[]
d. Condensers: <u>5 AIR COOLED CONDENSERS FOR DX SYSTEM</u>	[]	[X]	[]
e. Space Equipment:			
Direct Expansion -			
Window units _____	[X]	[]	[]
Thru-the-wall _____	[X]	[]	[]
Single zone <u>LIMITED</u>	[]	[X]	[]
Single zone con. vol. _____	[X]	[]	[]
Other <u>SPLIT SYSTEM FOR ELEVATOR ROOM</u>	[]	[X]	[]
Air/Water -			
2-pipe fan coil _____	[X]	[]	[]
Unit ventilators _____	[X]	[]	[]
Terminal reheat _____	[X]	[]	[]
Variable volume <u>PREDOMINANTLY</u>	[]	[X]	[]
Dual Duct _____	[X]	[]	[]
f. Special Systems:			
Type <u>6 SMALL AIR HANDLERS FOR CLEAN ROOM</u>	[]	[X]	[]
Capacity _____	[]	[X]	[]
g. Control Systems:			
Pneu <u>ACTUATORS</u>	[]	[X]	[]
Electric _____	[X]	[]	[]
Electronic <u>DDC WITH PNEUMATIC/DDC FOR OLD DREESE</u>	[]	[X]	[]
h. Fans:			
Exhaust <u>18</u>	[]	[X]	[]
Recirculating <u>FOR CLEAN ROOM</u>	[]	[X]	[]

B. COMMENTS:

ONE MAIN AIR HANDLER SUPPLIES OLD DREESE AND TWO MAIN AIR HANDLERS SUPPLY NEW DREESE. THERE ARE FIVE SMALLER UNITS THAT ARE DEDICATED TO THE CLEAN IN THE NEW SECTION.

C. COMPONENT RATING: (\$3,125,000) X (81 %) = \$ 2,531,200

Possible	Condition	Component
Value	Value	Multiplier
		Value

ELECTRICAL/SERVICE & DISTRIBUTION

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

(a) Service:

Substation BUCKEYE - CIRCUIT (PGN5/PGS5)

Primary Voltage 13,200 VOLTS

Transformer:

Manufacture	Type	KVA	Secondary Voltages
<u>GENERAL ELECTRIC</u>	<u>DRY</u>	<u>500</u>	<u>208/120</u>
<u>GENERAL ELECTRIC</u>	<u>DRY</u>	<u>500</u>	<u>480/277</u>
<u>GENERAL ELECTRIC</u>	<u>DRY</u>	<u>1500</u>	<u>208/120</u>

(b) Distribution System:

Panelboard (type) CIRCUIT BREAKERS

Voltage 480/277 & 208/120

Amperage 2500 AMPS

Conduit ALUMINUM

Conductor COPPER

Wire (type) VARIES

Armored Cable

Other N/A

(c) Emergency System:

General or (type & capacity) CAT. DIESEL, 594 KVA

B. COMMENTS:

THREE TRANSFORMERS SUPPLY THE BUILDING WITH 480/277 AND 208/120 VOLT SERVICE. UTILITY RECORDS INDICATE ADEQUATE SUPPLY FOR THE DEMAND OF THE BUILDING.

C. COMPONENT RATING: (\$480,800) X (89 %) = \$427,900

Possible	Condition	Component
Value	Value Multiplier	Value

ELECTRICAL/LIGHTING & POWER

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Lighting (lamp type):	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Fluor 1, 2 AND THREE LAMP UNITS	[]	[X]	[]
Incand VARIABLE INTENSITY SPOT LIGHTS	[]	[X]	[]
HID	[]	[X]	[]
Other	[X]	[]	[]
b. Receptacles & Switches:			
Type & Capacity GROUNDED 120, DUPLEX	[]	[X]	[]
c. Special:			
Baseboard Heat	[X]	[]	[]
Lightning Protection	[]	[X]	[]
Communication & Alarm	[]	[X]	[]
Data Systems	[]	[X]	[]

B. COMMENTS:

THE ELECTRICAL DISTRIBUTION BREAKER BOXES THROUGHOUT THIS BUILDING ARE ADEQUATE. NO PROBLEMS WERE IDENTIFIED BY MAINTENANCE PERSONNEL OR OCCUPANTS.

C. COMPONENT RATING: (\$3,185,100) X (87 %) = \$2,771,000
 Possible Condition Component
 Value Value Multiplier Value

SAFETY STANDARDS

FAC #279 DATE 6/95 INSPECTOR: AJR

N/A Sat Att

(a) Exits:

Stair Construction:
 concrete _____ [] [X] []
 steel _____ [X] [] []
 wood _____ [X] [] []
 Number of exits 11 [] [X] []

(b) Fire Rating:

Construction Type: I X II _____ III _____ IV _____ V _____ VI _____
 Building Height: 143 ft., 9 stories

(c) Extinguishing Systems:

Portable WATER, CO-2 AND ABC THROUGHOUT [] [X] []
 Standpipe 4" LOCATED AT STAIRWAYS [] [X] []
 Hose Cabinets LOCATED THROUGHOUT [] [X] []
 Sprinklers IN THE NEW SECTION [] [X] []
 Suppression _____ [X] [] []
 Other _____ [X] [] []

(d) Detection & Alarm Systems:

Manual Alarm _____ [] [X] []
 Annunciator LOCATED AT ROOM 113G [] [X] []
 Smoke Detectors IN DUCTWORK AND AT ELEVATORS [] [X] []

(e) Lighting Systems:

Exit Signs _____ [] [X] []
 Exit Lighting _____ [] [X] []
 Emergency Lighting _____ [] [X] []
 Emergency Generator LOCATED IN RM 067M [] [X] []

B. COMMENTS:
NO PROBLEMS OBSERVED.

C. COMPONENT RATING: (\$1,592,500) x (81 %) = \$1,289,900
 Possible Condition Component
 Value Value Multiplier Value

BUILDING PERIMETER EVALUATION

FAC #279 DATE 6/95 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
1. Building Access:			
Driveway _____	[X]	[]	[]
Loading Dock <u>NEW DOCK AT HIGH VOLTAGE LAB</u>	[]	[]	[X]
Sidewalks			
Front <u>STONE PLAZA - EAST</u>	[]	[X]	[]
Side <u>STONE WALKS</u>	[]	[X]	[]
Rear <u>PAVERS ON WALKWAYS</u>	[]	[]	[X]
Steps			
Front <u>AT EAST ENTRANCES</u>	[]	[X]	[]
Side <u>AT NORTH ENTRANCES</u>	[]	[X]	[]
Rear _____	[X]	[]	[]
Handicap Ramp <u>AT THE NORTH/EAST ENTRANCE</u>	[]	[X]	[]
2. Lawn and Landscaping:			
Lawn _____	[]	[X]	[]
Shrubs _____	[]	[X]	[]
Trees _____	[]	[X]	[]
Undesirable Insect _____	[X]	[]	[]
Bedding Material <u>WASHED INTO THE WEST PLAZA</u>	[]	[]	[X]
Watering System _____	[X]	[]	[]
3. General Site Information:			
Signage <u>LOCATED ON NEIL AVENUE</u>	[]	[X]	[]
Address Identification <u>ON SIGN</u>	[]	[X]	[]
Security Lights <u>ADEQUATE</u>	[]	[X]	[]
Street Lights <u>NEW LIGHTS AROUND BUILDING</u>	[]	[X]	[]
Drainage <u>PROBLEMS OBSERVED AT THE WEST PLAZA</u>	[]	[]	[X]
Storm Drains <u>PROBLEMS OBSERVED AT THE WEST PLAZA</u>	[]	[]	[X]

B. COMMENTS:

THE DRAINAGE ON THE WEST SIDE DURING HEAVY RAINS IS CAUSING EROSION OF SOIL AND BEDDING MATERIALS. NEW DOCK ALSO FLOODS DURING HEAVY RAINS. THE DRAINS NEED TO BE CLEANED PERIODICALLY.

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

BUILDING AUDIT METHODOLOGY

1. BUILDING AUDIT PROGRAM OBJECTIVE

The primary objective of this program is to provide a building-by-building inventory and current list of building maintenance deficiencies. This analysis is limited to the buildings for which 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" forms 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 regarding 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) General repainting, redecorating, wholesale replacement of building and system components, on-going maintenance, replacement and renovation projects.
- (b) Exterior building walls and attached items.
- (c) Entrance steps at all entries, ramps outside the buildings, and a limited evaluation of plantings around the building exterior.

(7) The building inspections do not include:

- (a) Movable furniture.
- (b) Fixed equipment inside the buildings that is installed and maintained by a specific academic department or using agency.
- (c) Utility lines supplying the buildings.

(8) 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