

FACILITY AUDIT REPORT  
CALDWELL LABORATORY #26  
MAY 1997

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Department of Physical Facilities  
Division of Resource Management

**Table of Contents**  
**CALDWELL LABORATORY**

EXECUTIVE SUMMARY & PROJECT LIST ..... 3

PROPOSED MAINTENANCE PROJECTS ..... 3

GENERAL BUILDING INFORMATION ..... 4

BUILDING SYSTEMS INFORMATION ..... 5

NARRATIVE ..... 6

BUILDING EVALUATION SUMMARY ..... 10

    FOUNDATIONS ..... 11

    COLUMNS AND BEAMS ..... 12

    EXTERIOR WALLS ..... 13

    EXTERIOR WINDOWS & DOORS ..... 14

    ROOFING ..... 15

    PARTITIONS & DOORS ..... 16

    WALL FINISHES ..... 17

    FLOOR FINISHES ..... 18

    CEILINGS AND FINISHES ..... 19

    CONVEYING ..... 20

    MECHANICAL/PLUMBING DOMESTIC ..... 21

    MECHANICAL/PLUMBING LABS ..... 22

    MECHANICAL/HEATING ..... 23

    COOLING & VENTILATING ..... 24

    ELECTRICAL/SERVICE & DISTRIBUTION ..... 25

    ELECTRICAL/LIGHTING & POWER ..... 26

    SAFETY STANDARDS ..... 27

    BUILDING PERIMETER EVALUATION ..... 28

BUILDING AUDIT METHODOLOGY ..... 29

ABBREVIATIONS ..... 31

APPENDIX ..... 32

    BUILDING FLOOR PLANS

    C-1 BUILDING SPACE ASSIGNMENTS

**EXECUTIVE SUMMARY AND PROJECT LIST FOR  
CALDWELL LABORATORY**

Caldwell Laboratory was built in three stages. The first section, the north part of the building, was completed in 1950. The second section was completed in 1958. This added two wings to the south of the original building as well as a basement area between the wings. The third section added a third floor to one of the wings and added three floors to fill in the space between the wings. The building was officially named Caldwell Laboratory by the Board of Trustees in 1958. Overall the building is in good condition, but because of the age of the building there are several projects suggested to make it viable for continued occupancy. Caldwell Laboratory has been identified as one of the buildings that will be tied into the central chilled water plant within the next two years.

**PROPOSED MAINTENANCE PROJECTS**

<b>A. Corrective Maintenance Projects:</b>	<b>Control No.</b>
Remove and replace treads and risers in northwest stairwell between 1st and 2nd floors.	\$ 9,000 993*
Clean and seal masonry.	50,000 1608**
Repaint classrooms and corridors.	45,000
<b>SUB-TOTAL</b> .....	<b>\$ 104,000</b>
<b>B. Building Improvement/Addition Projects:</b>	
Install emergency lights in central corridors	\$ 9,000 1607*
<b>SUB-TOTAL</b> .....	<b>\$ 9,000</b>
<b>C. Building Component Replacements expected within the next 5 to 10 years:</b>	
Replace restroom fixtures and partitions.	\$ 45,000 1609*
Replace windows in building with double glazed, pivoting windows.	301,000 1699**
Replace steam converter in penthouse.	36,000
Replace pipe and condensate lines.	120,000
Replace galvanized water lines.	135,000
Replace airhandling units.	340,000
<b>SUB-TOTAL</b> .....	<b>\$ 977,000</b>
<b>TOTAL COST FOR ALL PROJECTS</b> .....	<b>\$1,090,000</b>

\*\*These projects are on our departmental project list.

GENERAL BUILDING INFORMATION

CALDWELL LABORATORY # 26

BUILDING ADDRESS: 2024 NEIL AVENUE

GROSS SQ. FT.: 101,976

NET ASSIGNABLE SQ. FT.: 65,037

MECHANICAL/CUSTODIAL AREA SQ. FT.: 8,848

YEAR OF CONSTRUCTION: 1950

YEARS OF ADDITIONS: 1957 & 1964

YEAR OF LAST RENOVATION: NONE

NUMBER OF STORIES/BASEMENT: 4 and BASEMENT

AIR CONDITIONING (Percentage): 65%

CURRENT USE: ELECTRICAL ENGINEERING AND POOL CLASSROOMS

TYPE OF CONSTRUCTION: STEEL FRAME WITH BRICK VENEER AND ALUMINUM PANELS

ESTIMATED REPLACEMENT COST (ERC): \$14,374,000\*

WHEELCHAIR ACCESSIBILITY: A RAMP LEADS TO THE SOUTHWEST ENTRANCE WITH AN  
ELEVATOR AT THE NORTHEAST SIDE OF THE BUILDING  
GIVING ACCESS TO THE OTHER FLOORS

OVERALL BUILDING CONDITION: SATISFACTORY \*\*

NUMBER OF EXIT STAIRWAYS: 4

NUMBER OF EXITS: 5

AREA SHOP RESPONSIBILITY: NORTH

\* Replacement Cost assigned June, 1996 by The Office of University Resource Planning & Institutional Analysis.

\*\* The Office of University Resource Planning & Institutional Analysis C-1 Report Condition Code.

**BUILDING SYSTEMS INFORMATION**

CALDWELL LABORATORY # 26

**HEATING:**

Source POWER PLANT  
Type Heating System HOT WATER/STEAM  
Main Steam Feed (Line size, valve location) 4@ SUPPLY, 1 1/4@ CONDENSATE  
Building Htg. Water (line size, valve location) 8@ HWS, 8@ HWR, RM 009M

**VENTILATION SYSTEM:**

OUTSIDE AIR TO THE AIR HANDLING UNITS, EXHAUST FANS AND RETURN AIR

**COOLING:**

BLDG % 65 Chillers 1 CENTRIFUGAL TRANE UNIT  
Window Units 10 Thru-the-wall \_\_\_\_\_ Direct exp. units 3

**HVAC CONTROL SYSTEM:** PNEUMATIC/ELECTRIC WITH DDC UPGRADE

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

1. BUCKEYE	225	13,200/208	ROOM 070M
2. BUCKEYE	225	13,200/240	ROOM 070M
3. BUCKEYE	500	13,200/480	ROOM 070M
4. BUCKEYE	500	13,200/480	ROOM 010M

**PLUMBING SERVICES:**

Water (size, valve location) 3@ ROOM 009 AND 3@ ROOM 001 Gas  
(size, valve location) 2@ ROOM 009 Domestic  
Hot Water (size, valve location) 2 1/2@ HWS, 3/4@ HWR, ROOM 009  
Compressed Air (size, location) 1 1/2@ ROOM 009

**SEWERS:**

Storm 1 @ 6@, 1 @ 8@ Sanitary 1 @ 6@  
Combined Storm/San.

**METERS:**

Gas (size, location) NONE  
Water (size, location) NONE  
Electric (size, location) NONE

**ALARM SYSTEMS:**

Fire Alarm, Main Panel Room 10, Remote Panel Location Room AT 103  
 Fire Pump @ NONE Pump Location, Room \_\_\_\_\_  
 Sprinklers, Valve Location Room N/A,  100%,  Partial,  Limited  
 Horns/Strobes,  Bells in  Halls,  Rooms  
 Other Alarms NONE

**ELEVATORS:**

Number ONE Type (passenger, freight) FREIGHT/PASSENGER  
Manufacturer DOVER Size 131@ X 94@

**EMERGENCY GENERATOR:** Size NONE Location N/A

**ASBESTOS SURVEY (1986):** FOUND IN DUCT AND PIPE INSULATION.

## NARRATIVE OF CALDWELL LABORATORY

### HISTORY

The current Caldwell Laboratory was built as three separate projects. The first section was completed in 1950, The next addition was built in 1957 and the final addition was completed in 1964. The original building has a basement and four floors. The two additions have a basement and three floors. The building has been known as the Electrical Engineering Building and the Electrical Engineering Research Facility. It was officially named the Caldwell Laboratory by the Board of Trustees in 1958. Today it is occupied by the Department of Electrical Engineering and its classrooms are used as pool classrooms. The fourth floor of the original building is currently vacant as is the former library area on the first floor.

A review of the work orders indicated that there are a normal number of emergency calls and maintenance calls to the building. There were eleven elevator related calls in about a twelve month period. This is rather high and appears to be due to the manual door on the east side of the elevator. There is no remedy other than to redesign this door. This solution was not acceptable because it would reduce the overall space in the elevator car.

There are eight major projects identified for this building. There are also some minor projects recommended in this report that will enhance the appearance of the building.

In an interview with the building coordinator, it was learned that the occupants are generally satisfied with the overall condition and performance of the building. There are some complaints about too hot and too cold rooms but these are intermittent complaints. The only consistent complaint is the lack of sufficient convenience electrical outlets in the original structure.

Occupancy of the building reported by The Office of University Resource Planning & Institutional Analysis in the C-1 Building Space Assignment Report, dated June 1996, lists a net assignable area of 65,037 SF. for Caldwell Laboratory. Building use by room category is 29% laboratory, 26% offices, 25% library, 10% classrooms and 10% mechanical/custodial.

### PRIMARY SYSTEMS

The Caldwell Laboratory building has reinforced concrete walls and footings at the perimeter with individual interior footings for steel columns. The building has mainly steel columns and beams with some reinforced concrete columns, up to the second floor, in the 1957 addition. These columns support steel beams and steel joists that form the basic skeleton of the building. There are no signs of settlement at the columns or in the foundation walls. There is a vertical crack in the north wall in room 070M that should be sealed.

The exterior closure consists of concrete block backing, with either brick veneer or insulated aluminum panels. The aluminum panels on the north and south side of the building show signs of oxidation and should be cleaned. The brick veneer should also be cleaned and sealed.

The building has single glazed, double hung windows with aluminum frames. Many of the windows are inoperable and do not close completely. These windows should be replaced with pivoting, double glazed windows.

The built-up roof on this building was replaced in 1986 with a single ply EPDM roof which, overall, appears to be in good condition. There is an area on the north part of the EPDM roof that is soft to the touch and should be checked for wet insulation. There was a roof leak noted in room 320. This leak appears to be in the flashing at the south wall of the fourth floor. There is a small section

of built-up roof, over a basement section, between Caldwell Laboratory and the Journalism building. This built-up roof of 683 square feet is 37 years old but is functioning adequately.

## **SECONDARY SYSTEMS**

The interior partitions throughout most of building consist of steel demountable panels and doors. There is a small area in the southwest part of the building that has plaster walls. This part of the building was at one time part of the Journalism building. Some of the walls in the original building are glazed tile and are in good condition.

The metal doors in the corridors need to be repainted. The fire doors in the basement corridor need to be rehung so that they close completely. The rest of the doors are in good condition except for the doors to rooms 110T and 169T which need to be repainted.

The metal partitions need to be repainted because the student desks have left scuff marks on the classroom walls. The southwest stairwell walls have patches of peeling paint that should be repaired and repainted.

The floors are mainly vinyl or asbestos asphalt tiles. There are terrazzo floors at the northwest entrance, stairs and landings as well as at the southeast entrance and stairs. The entire basement area has a clear sealant concrete floor. There are a few private offices and a conference room that have rolled carpeting. The floors vary in age by the construction date of the building area, but overall are in good condition. The only areas that need attention are the steps of the southeast stairs which have cracked terrazzo and the metal nosing of the southwest stairs which have rusted and should be replaced.

The ceilings in the classrooms are 12@ X 12@ tiles applied to the structure. The corridors have suspended 2= X 4= tiles. The basement ceiling and the penthouse ceiling are exposed. There is a fire retardent insulation applied to the basement ceiling. There are stained tiles throughout the building that need to be replaced.

## **SERVICE SYSTEMS**

The building has one elevator that is used for both freight and passenger service. The elevator has a 10,000lb capacity and has a manual door at the outside wall that can be used as a freight dock. This manual door has caused some operating problems when the outside doors are not properly closed. There seems to be no good solution to this problem and it is one that the building occupants have learned to live with.

The major service systems, domestic cold and hot water, the sanitary and storm drainage, compressed air and plumbing systems vary in age from 33 to 47 years. There were no immediate problems observed nor any pressing needs noted by the building occupants. The domestic plumbing system is working adequately. The water pressure in the restrooms was sufficient except at the third floor level. The restroom fixtures are showing signs of age and should be replaced. The walls and floors in the restroom should be thoroughly cleaned. It should be noted that the galvanized pipes and the domestic plumbing lines are at an age where they should be replaced

The hot water system performs adequately to heat the building, although there were a few complaints of cold rooms in the winter time and some rooms were too hot in the winter. The heating hot water for the perimeter heating system is provided by the power plant and is controlled by manual valves which provide inconsistent heating from room to room.

Each section of the building has a different cooling system. Areas of the first

and second floor of the original building have window units. The central part of the building has a modified dual duct system. Some labs have their own DX systems. Several of the classrooms have no cooling system and receive no conditioned air. The chiller in this building is 31 years old and past its useful life. Caldwell Laboratory is scheduled to be tied into the central chilled water system within the next few years. This should provide adequate chilled water for the cooling system.

Ventilation is provided by a variety of dual duct systems, DX units and exhaust fans. The Caldwell Laboratory has Landis and Staefa DDC controls for the HVAC system.

## **ELECTRIC**

The electrical power to the building is provided by four transformers. Two GE transformers with 225 KVA. One GE transformer with 500 KVA. One Ward transformer with 500 KVA. These transformers are connected to the Buckeye Substation. The switch gear is located off room 070M for three of the transformers and in room 010M for the other transformer. Panel sizes vary throughout the building depending on the load. At about 14.2 watts per square foot, the building appears to have an adequate supply of electric power.

The building has mainly 40 watt fluorescent light fixtures with incandescent lights in the penthouse. There are an adequate number of convenience and lab outlets throughout the building except for the original section of the building.

## **SAFETY STANDARDS**

Lighted exit signs are powered by battery packs. There are no emergency lights in the central corridors and a project has been identified but not funded to provide emergency lights. There is no emergency generator for the building. The building is equipped with a manual fire alarm system and portable fire extinguishers. There are no fire hoses in the cabinets and no sprinklers in the building.

An automatic door opener has been installed at the southeast entrance of building. There is a ramp leading up to the door. The only elevator in the building is located at the northeast entrance.

## **ASBESTOS**

The Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report: Inventory of Friable Asbestos Containing Material in Bldgs of the Ohio State University (Main and Branch Campuses) and the Recommendations for Corrective Action by PEI Associates, Sept. 1986 identifies asbestos containing materials in pipe insulation and in the insulation for the steel beams.

## **BUILDING PERIMETER**

There is a driveway on the east side of the building that is in good condition. There is a brick walkway at the northwest entrance that has some loose bricks that need to be relaid. The lawn areas on the north and west sides of the building need extensive repair because of the construction along Neil and 19th avenues. The shrubs on the west side of the building need to be trimmed back from the benches located on the west side. There is a broken hand rail on the steps at the northwest corner of the building that needs to be repaired. The security light at the northwest entrance needs to be repaired. There is ivy on the north and west sides of the building that needs to be removed.

Entrances to the building are well lighted. Area and street lighting appear to be distributed properly. There is a building sign at Neil Avenue.

## Maintenance Projects (Less than \$5000)

1. Repaint areas where bulletin boards have been removed from walls on southwest part of the second floor.  
Work order # 01-
2. Repaint southwest stairwell walls from first to second floors.  
Work order # 01-
3. Repaint interior metal doors in the corridors.  
Work order # 01-
4. Repair cracked terrazzo in steps of southeast stairs.  
Work order # 01-
5. Repaint and rehang fire door in basement corridor, to room 371T and to room 110T.  
Work order # 01-
6. Repair base molding in southwest corridor on first floor.  
Work order # 01-
7. Scrape and repaint metal nosing in southwest stairs.  
Work order # 01-
8. Clean restroom walls and floors.  
Work order # 01-
9. Seal crack in north concrete wall of room 070M.  
Work order # 01-
10. Replace stained ceiling tiles as needed.  
Work order # 01-
11. Repair leaking faucet in room 371T.  
Work order # 01-
12. Replace exterior metal door and frame at northeast entrance and the metal door at the southeast entrance.  
Work order # 01-
13. Relay bricks in northwest walkway.  
Work order # 01-
14. Repair security light at northwest entrance.  
Work order # 01-
15. Remove ivy from north and west sides.  
Work order # 01-
16. Inspect north roof sections for soft areas and repair as necessary.  
Work order # 01-

**BUILDING EVALUATION SUMMARY**

**I. BUILDING INFORMATION**

FAC # 26 FACILITY NAME: CALDWELL LABORATORY  
 DATE: 5/97 INSPECTOR: AJR  
 YEAR CONSTRUCTED: 1950  
 GROSS SQ FT: 101,976 NET SQ FT: 65,037  
 REPLACEMENT COST \$ 14,374,000 \*

**II. COMPONENT RATING**

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST **	BUILDING COMPONENT REPLACEMENT COST	BUILDING CONDITION VALUE MULTIPLIER	BUILDING COMPONENT CURRENT VALUE
Foundation	5.20	746,735	0.88	655,528
Columns and Beams	14.04	2,017,495	0.88	1,771,075
Exterior Walls	5.36	770,316	0.83	636,853
Ext. Windows & Doors	4.06	584,288	0.50	292,164
Roofing & Flashing	2.73	393,019	0.94	370,346
Partitions & Doors	8.69	1,249,799	0.67	833,254
Wall Finishes	2.73	393,019	0.50	196,519
Floor Finishes	5.01	720,534	0.57	408,330
Ceilings & Finishes	7.16	1,029,709	0.47	480,555
Conveying	1.82	262,012	0.97	253,304
Plumbing	8.28	1,189,536	0.60	713,769
Heating	8.75	1,257,659	0.57	712,722
Cooling and Vent.	10.04	1,443,688	0.50	721,880
Elect. Serv. & Dist.	1.73	248,912	0.73	182,549
Lighting and Power	11.65	1,674,259	0.67	1,116,245
Safety Standards	2.73	393,019	0.67	262,029
TOTALS	100.00	14,374,000	0.67	9,607,124

**III. BUILDING RATING SUMMARY**

Overall Building Rating = 67%

\* Replacement Cost assigned June 1996 by The Office of University Resource Planning & 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 # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. Footings:</b>	N/A	Sat	Att
Interior/Exterior footings <u>CONCRETE SPREAD FOOTERS</u>	[ ]	[X]	[ ]
Interior Footings/Bearing Walls _____	[X]	[ ]	[ ]
Perimeter Footings <u>CONCRETE</u>	[ ]	[X]	[ ]
Grade Beams _____	[x]	[ ]	[ ]
Piles _____	[X]	[ ]	[ ]
Caisson _____	[X]	[ ]	[ ]
<b>b. Foundation Wall Materials:</b>			
Concrete Cast-in-place <u>CRACK IN WALL IN ROOM 070M</u>	[ ]	[ ]	[X]
Concrete Block _____	[X]	[ ]	[ ]
Stone _____	[X]	[ ]	[ ]
Brick _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Waterproofing and Underdrain:</b>			
Coating _____	[X]	[ ]	[ ]
Membrane _____	[X]	[ ]	[ ]
Board _____	[X]	[ ]	[ ]
Drain Tile <u>AT WINDOW WELLS</u>	[ ]	[X]	[ ]
<b>d. Ground/Basement Floor Slab:</b>			
Plain _____	[X]	[ ]	[ ]
Reinforced _____	[ ]	[X]	[ ]
<b>e. Special Substructures:</b> _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THERE IS A CRACK IN THE WALL IN ROOM 070M THAT SHOULD BE SEALED.

**C. COMPONENT RATING:** (\$ 746,700 ) ( 88 %) = \$ 655,500  
 Possible Condition Component  
 Value Value Multiplier Value

**COLUMNS AND BEAMS**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. Columns and Beams:</b>			
Reinforced Concrete <u>IN THE 1957 ADDITION TO THE 2ND FL</u>	[ ]	[X]	[ ]
Precast Concrete _____	[X]	[ ]	[ ]
Steel <u>COLUMNS AND BEAMS</u>	[ ]	[X]	[ ]
Fireproofing <u>FOR BEAMS OF FIRST FLOOR</u>	[ ]	[X]	[ ]
Wood _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>b. Loadbearing Wall Materials:</b>			
Concrete Cast-in-place _____	[X]	[ ]	[ ]
Concrete Block _____	[X]	[ ]	[ ]
Stone _____	[X]	[ ]	[ ]
Brick _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>c. Floor Joists:</b>			
Concrete <u>FOR FIRST FLOOR</u>	[ ]	[X]	[ ]
Steel beams _____	[ ]	[X]	[ ]
Wood _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>d. Floor Decks:</b>			
Concrete Slab <u>FIRST FLOOR</u>	[ ]	[X]	[ ]
Precast Slab _____	[X]	[ ]	[ ]
Metal Deck w/concrete fill _____	[ ]	[X]	[ ]
Wood _____	[X]	[ ]	[ ]
<b>e. Roof Joists:</b>			
Concrete _____	[X]	[ ]	[ ]
Steel beams <u>WITH STEEL JOISTS</u>	[ ]	[X]	[ ]
Wood _____	[X]	[ ]	[ ]
<b>f. Pitched Roof System:</b>			
Pitch [ ]3/12, [ ]6/12, [ ]9/12	[X]	[ ]	[ ]
Dormers _____	[X]	[ ]	[ ]
Fireproofing _____	[X]	[ ]	[ ]
Underlayment _____	[X]	[ ]	[ ]
Insulation _____	[X]	[ ]	[ ]
Ventilation _____	[X]	[ ]	[ ]
<b>g. Flat Roof System:</b>			
Concrete Deck _____	[X]	[ ]	[ ]
Precast Slab _____	[X]	[ ]	[ ]
Metal Deck w/concrete fill _____	[ ]	[X]	[ ]
Metal Deck _____	[X]	[ ]	[ ]
Wood Deck _____	[X]	[ ]	[ ]
Insulation <u>VARIES FROM 2@ TO 6@</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

THERE WERE NO SIGNS OF PROBLEMS WITH EITHER THE COLUMNS OR BEAMS.

**C. COMPONENT RATING:**    (\$ 2,017,500)    ( 88 %) = \$ 1,771,100  
    Possible    Condition    Component  
    Value            Value Multiplier    Value

**EXTERIOR WALLS**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. Exterior Walls:</b>			
Concrete <input type="checkbox"/> CIP <input type="checkbox"/> PRECAST	[X]	[ ]	[ ]
Concrete Block	[X]	[ ]	[ ]
Brick <input type="checkbox"/> Masonry <input checked="" type="checkbox"/> Veneer	[ ]	[ ]	[X]
Slab Veneer	[X]	[ ]	[ ]
Window/Curtainwall	[X]	[ ]	[ ]
Metal Siding <u>ALUMINUM INSULATED PANELS ON THE NORTH WALL</u>	[ ]	[ ]	[X]
Other	[X]	[ ]	[ ]
<b>b. Wall Lintels Over Openings:</b>			
Concrete <input type="checkbox"/> PRECAST <input type="checkbox"/> CIP	[X]	[ ]	[ ]
Limestone	[X]	[ ]	[ ]
Brick Masonry	[X]	[ ]	[ ]
Steel	[ ]	[X]	[ ]
Wood	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
<b>c. Wall Trim:</b>			
Limestone <u>SILLS AND PANELS ON THE WEST SIDE</u>	[ ]	[X]	[ ]
Brick	[X]	[ ]	[ ]
Marble	[X]	[ ]	[ ]
Wood	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
<b>d. Finishes:</b>			
Plain	[ ]	[X]	[ ]
Stucco	[X]	[ ]	[ ]
Paint	[X]	[ ]	[ ]
Parging	[X]	[ ]	[ ]
Exposed Aggregate	[X]	[ ]	[ ]
Drivit	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
<b>e. Exterior Wall Backing System:</b>			
Concrete	[X]	[ ]	[ ]
Concrete Block	[ ]	[X]	[ ]
Brick Masonry	[X]	[ ]	[ ]
Steel Girts <u>AND STUD FRAMING</u>	[ ]	[X]	[ ]
Metal Studs	[X]	[ ]	[ ]
Wood Studs	[X]	[ ]	[ ]

**B. COMMENTS:**

THE EXTERIOR WALLS ARE IN GOOD CONDITION BUT SHOULD BE CLEANED AND SEALED. THE BRICK VENEER ON THE EAST SIDE IS BOWED OUT ABOUT 1/2" ABOVE FIVE OF THE WINDOWS. THESE SECTIONS SHOULD BE SECURED TO PREVENT FURTHER MOVEMENT.

**C. COMPONENT RATING:** (\$ 770,300 ) ( 83 % ) = \$ 636,900  
 Possible Condition Component  
 Value Value Multiplier Value

**EXTERIOR WINDOWS & DOORS**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. Window materials:</b>			
Wood _____	[X]	[ ]	[ ]
Steel <u>ON WEST SIDE FIRST FLOOR</u>	[ ]	[ ]	[X]
Alum _____	[ ]	[ ]	[X]
PVC _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>b. Windows type &amp; number:</b>			
Single Hung _____	[X]	[ ]	[ ]
Double Hung <u>240</u>	[ ]	[ ]	[X]
Casement _____	[X]	[ ]	[ ]
Pivoted _____	[X]	[ ]	[ ]
Sliding _____	[X]	[ ]	[ ]
Fixed _____	[X]	[ ]	[ ]
Other <u>1 GLASS BLOCK</u>	[ ]	[X]	[ ]
<b>c. Window glazing:</b>			
Single pane _____	[ ]	[X]	[ ]
Double pane <u>[ ]5/8@ [ ]1@ [ ]Seals Broken</u>	[X]	[ ]	[ ]
<b>d. Window Wall and/or Store Front:</b>			
Store Front _____	[X]	[ ]	[ ]
Vestibule _____	[X]	[ ]	[ ]
Single pane _____	[X]	[ ]	[ ]
Double pane _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>e. Door Materials:</b>			
Wood _____	[X]	[ ]	[ ]
Steel <u>2 SINGLE</u>	[ ]	[ ]	[X]
Alum <u>8 SINGLE AND 3 DOUBLE</u>	[ ]	[X]	[ ]
Other _____	[X]	[ ]	[ ]
<b>f. Doors type &amp; number:</b>			
Vestibule Double <u>1</u>	[ ]	[X]	[ ]
Double <u>3</u>	[ ]	[X]	[ ]
Exit <u>5</u>	[ ]	[X]	[ ]
Stair Exit <u>4</u>	[ ]	[X]	[ ]
Garage _____	[X]	[ ]	[ ]
<b>g. Hardware:</b>			
Automatic Opener <u>SOUTHWEST ENTRANCE</u>	[ ]	[X]	[ ]
Push Bar Openers wt Closures _____	[ ]	[X]	[ ]
Weather Stripping _____	[ ]	[X]	[ ]
Key Cards _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THE WINDOWS ARE IN POOR CONDITION. MANY DO NOT OPEN OR CLOSE. THE ALUMINUM FRAMES HAVE DETERIORATED. THE WINDOWS SHOULD BE REPLACED WITH DOUBLE GLAZED, PIVOTING WINDOWS. TWO OF THE EXTERNAL DOORS AND FRAMES ARE RUSTED AND SHOULD BE REPLACED. THE WINDOW AT ROOM 070M NEEDS BE RECAULKED TO PREVENT WATER LEAKS INTO THIS ROOM.

**C. COMPONENT RATING:**    (\$ 584,300 )    ( 50 % ) = \$ 292,200  
                                  Possible            Condition            Component  
                                  Value            Value Multiplier    Value

**ROOFING**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. Roof Covering/Square Feet:</b>		N/A	Sat	Att
Built-up <input checked="" type="checkbox"/> Asphalt <input type="checkbox"/> Coal Tar	683 SF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Built-up w/gravel <input type="checkbox"/> Asphalt <input type="checkbox"/> Coal Tar		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asphalt Roll		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asphalt Shingle		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Copper		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glass		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other EPDM GLUED	23,264 SF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>b. Flashing/Lineal Feet:</b>				
Materials: <input checked="" type="checkbox"/> Cu <input type="checkbox"/> Galv <input type="checkbox"/> Al <input type="checkbox"/> EPDM <input type="checkbox"/> Asph <input type="checkbox"/> PVC		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Base & Cap/Counter	11,205/897 LF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reglet/Through Wall	777 LF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Valley/Hip/Ridge		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pitch Pockets		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>c. Gravel Stop &amp; Edge Strips/Lineal Feet:</b>				
Type <input type="checkbox"/> SS <input type="checkbox"/> Galv <input checked="" type="checkbox"/> Al <input type="checkbox"/> Cu <input type="checkbox"/> PVC	849 LF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>d. Drainage:</b>				
Gutters w/ Exterior Downspouts		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scuppers w/ Exterior Downspouts		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drains w/ Interior Storm Drains		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Emergency Overflow <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	OVER EDGE STRIP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>e. Parapets/Lineal Feet:</b>				
Concrete		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brick/Masonry	238 LF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>f. Parapet Caps:</b>				
Metal <input type="checkbox"/> SS <input type="checkbox"/> Galv <input type="checkbox"/> Al <input type="checkbox"/> Cu <input type="checkbox"/> PVC		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limestone	238 LF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Precast		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>h. Roof accessories:</b>				
Equipment Curbs		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equipment Frames		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Expansion Joints		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lightning Protection		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B. COMMENTS**

A NEW ROOF WAS INSTALLED IN 1987 AND IS IN GOOD CONDITION EXCEPT FOR A SMALL SECTION OF BUILT-UP ROOF. THERE WAS AN AREA ALONG THE NORTH SIDE THAT WAS SOFT AND SHOULD BE INVESTIGATED FOR MOISTURE. THERE WAS EVIDENCE OF ROOF LEAKS IN ROOM 320.

**C. COMPONENT RATING:** (\$ 393,100 ) ( 94 % ) = \$ 370,300  
 Possible Condition Component  
 Value Value Multiplier Value

## PARTITIONS &amp; DOORS

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION****a. Partition Framing:**

	N/A	Sat	Att
Concrete Block IN BASEMENT AREA	[ ]	[X]	[ ]
Clay Tile Block	[X]	[ ]	[ ]
Masonry	[X]	[ ]	[ ]
Wood Stud	[X]	[ ]	[ ]
Metal Stud IN SOME OFFICES	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

**c. Special partitions and Walls:**

Demountable STEEL PARTITIONS	[ ]	[ ]	[X]
Toilet MARBLE PARTITIONS	[ ]	[X]	[ ]
Screen Walls	[X]	[ ]	[ ]
Glass Storefront	[X]	[ ]	[ ]
Fence Cage CHAIN LINK IN BASEMENT AREA	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

**d. Wall Material:**

Plaster IN SOUTHWEST SECTION	[ ]	[ ]	[X]
Drywall IN BASEMENT AREA AND FIRST FLOOR	[ ]	[X]	[ ]
Glass	[X]	[ ]	[ ]
Wood Paneling	[X]	[ ]	[ ]
Composite Paneling	[X]	[ ]	[ ]
Steel Panels	[X]	[ ]	[ ]
Tile/Glazed IN THE STAIRWELLS	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

**e. Interior Doors & Frames:**

Met Door/Met Frame NEED TO BE PAINTED	[ ]	[ ]	[X]
Wood Door/Wood Frame	[X]	[ ]	[ ]
Wood Door/Metal Frame	[ ]	[X]	[ ]
Firedoors BASEMENT DOORS NEED TO BE REPLACED	[ ]	[ ]	[X]
Glazing	[ ]	[X]	[ ]
Roll-up	[X]	[ ]	[ ]
Sliding	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

**f. Hardware:**

Door [X]Knobs [ ]Levers	[ ]	[X]	[ ]
Door Closures	[ ]	[X]	[ ]
Kick/Push Plates	[ ]	[X]	[ ]
Security & Detection	[X]	[ ]	[ ]
Automatic Openers AT SOUTHEAST ENTRANCE	[ ]	[X]	[ ]
Fire Door Magnets	[X]	[ ]	[ ]

**B. COMMENTS:**

THE PARTITIONS ARE MAINLY METAL AND SHOULD BE CLEANED AND PAINTED AFTER THE FIRST AND SECOND FLOORS HAVE BEEN REMODELED. THE PLASTER IN THE SOUTHWEST SECTION NEEDS TO BE PATCHED ON THE SECOND FLOOR. ALL THE METAL CORRIDOR DOORS NEED TO BE REPAINTED. BASEMENT FIRE DOORS NEED TO TO BE REPLACED THE DOOR TO ROOM 371T NEEDS TO BE REHUNG.

**C. COMPONENT RATING:** (\$ 1,249,800) ( 67 %) = \$ 833,300

Possible Value	Condition Value Multiplier	Component Value
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**WALL FINISHES**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. Wall Finishes:</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Paint <u>WALLS SHOULD BE REPAINTED</u>	[ ]	[ ]	[X]
Vinyl Wall Coverings _____	[X]	[ ]	[ ]
Paneling Prefinished _____	[X]	[ ]	[ ]
Cork _____	[X]	[ ]	[ ]
Wallpaper _____	[X]	[ ]	[ ]
Ceramic Tile <u>IN STAIRWELLS AND SOME CLASSROOMS</u>	[ ]	[X]	[ ]
Marble _____	[X]	[ ]	[ ]
Stone _____	[X]	[ ]	[ ]
Trim & Wainscot _____	[X]	[ ]	[ ]
Glass _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS**

THE WALL FINISHES IN MOST CLASSROOMS NEED TO BE REPAINTED AFTER THE FIRST AND SECOND FLOOR REMODELING HAS BEEN COMPLETED. THE STAIRWELL ON THE SOUTHEAST SIDE NEEDS TO BE REPAINTED AT THE FIRST FLOOR LEVEL.

**C. COMPONENT RATING:**    (\$ 393,000 )    ( 50 %) = \$ 196,500  
                                  Possible            Condition            Component  
                                  Value            Value Multiplier    Value

**FLOOR FINISHES**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

**a. Carpet:**

		<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Rolled <u>IN A FEW PRIVATE OFFICES</u>	<u>500 SF</u>	[ ]	[X]	[ ]
Tile _____		[X]	[ ]	[ ]

**b. Concrete Topping:**

Clear Sealant <u>IN BASEMENT AREA</u>	<u>20,600 SF</u>	[ ]	[X]	[ ]
Antislip _____		[X]	[ ]	[ ]
Epoxy _____		[X]	[ ]	[ ]

**d. Resilient/Square Feet Common Areas:**

Vinyl Composition Tile _____		[X]	[ ]	[ ]
Vinyl/Plastic Tile _____		[X]	[ ]	[ ]
Asphalt Tile <u>PREDOMINANTLY</u>		[ ]	[X]	[ ]
Linoleum Tile _____		[X]	[ ]	[ ]
Vinyl Roll <u>IN LAB 320</u>		[ ]	[X]	[ ]
Rubber _____		[X]	[ ]	[ ]

**e. Ceramic Tile** [ ] Mosaic [X] Quarry IN 206T AND 210T [ ] [X] [ ]

**f. Masonry** [ ] Marble [ ] Granite [ ] Slate [ ] Brick \_\_\_\_\_ [X] [ ] [ ]

**g. Terrazzo** [ ] Marble [X] Granite NORTHWEST ENTRANCE [ ] [ ] [X]

**h. Wood** [ ] Tiles [ ] T&G Hardwood [ ] Planking \_\_\_\_\_ [X] [ ] [ ]

**h. Pedestal** [ ] Vinyl Tiles [ ] Grills [ ] Supply Air [ ] Vent. [X] [ ] [ ]

**I. Base Molding:**

Vinyl _____		[ ]	[ ]	[X]
Wood _____		[X]	[ ]	[ ]
Terrazzo _____		[ ]	[X]	[ ]
Ceramic Tile _____		[ ]	[X]	[ ]
Masonry _____		[X]	[ ]	[ ]
Other _____		[X]	[ ]	[ ]

**B. COMMENTS**

THE TILE FLOORS VARY IN AGE AND CONDITION BUT ARE SERVICEABLE AT THIS TIME. THE BASE MOLDING IS LOOSE AND BROKEN IN THE FIRST FLOOR CORRIDOR. THE TERRAZZO STEPS IN THE SOUTHEAST STAIRWELL ARE CRACKED AND NEED TO BE REPAIRED. THE METAL NOSING IN THE SOUTHWEST STAIRWELL NEEDS TO BE REPLACED.

**C. COMPONENT RATING:** (\$ 720,500 ) ( 57 % ) = \$ 408,300  
 Possible Condition Component  
 Value Value Multiplier Value

**CEILING AND FINISHES**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. System Type:</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Exposed <u>IN BASEMENT AND PENTHOUSE</u>	[ ]	[X]	[ ]
Applied to Structure <u>THROUGHOUT</u>	[ ]	[ ]	[X]
Suspended Stud <u>CORRIDORS HAVE 2= X 4= TILES</u>	[ ]	[ ]	[X]
Suspended Steel Grid _____	[X]	[ ]	[ ]
Suspended Aluminum Grid <u>LIMITED</u>	[ ]	[X]	[ ]
2x4 Lay-in _____	[ ]	[X]	[ ]
2x2 Lay-in _____	[X]	[ ]	[ ]
Concealed Spline _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**b. Materials:**

Drywall	[X]	[ ]	[ ]
Plaster <u>IN BASEMENT</u>	[ ]	[ ]	[X]
Mineral Fiber Board <u>STAINED TILES, 12@X12@ APPLIED</u>	[ ]	[ ]	[X]
Fiberglas Board	[X]	[ ]	[ ]
Cementious Fiber Board	[X]	[ ]	[ ]
Metal Tile	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

**c. Finishes:**

Paint _____	[ ]	[X]	[ ]
Prefinished <u>MINERAL FIBER TILES</u>	[ ]	[ ]	[X]
Other _____	[X]	[ ]	[ ]

**d. Openings & Inserts:**

Air Distribution <u>IN WALLS</u>	[X]	[ ]	[ ]
Lighting Fixtures _____	[ ]	[X]	[ ]
Access Panels _____	[X]	[ ]	[ ]
Sprinklers _____	[X]	[ ]	[ ]
Smoke Detectors _____	[X]	[ ]	[ ]
Speakers _____	[X]	[ ]	[ ]
Skylights _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THE CEILING TILES ARE STAINED IN THE CORRIDORS AND SOME ROOMS. THESE SHOULD BE REPLACED IN AREAS NOT AFFECTED BY THE FIRST AND SECOND FLOOR RENOVATION. THERE IS A HOLE IN THE CEILING NEXT TO ROOM 01 THAT NEEDS TO BE REPAIRED. THE RETURN AIR GRILLS SHOULD BE CLEANED.

**C. COMPONENT RATING:**    (\$ 1,029,700)    ( 47 %) = \$ 480,600  
                                  Possible    Condition                    Component  
                                  Value            Multiplier            Value

**CONVEYING**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

**a. Elevators:**

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Manufacturer DOVER			
Number 1	[ ]	[X]	[ ]
Type FREIGHT/PASSENGER	[ ]	[X]	[ ]
Speed 150=/MINUTE	[ ]	[X]	[ ]
Capacity (lbs) 10,000 LBS	[ ]	[X]	[ ]
Dimensions 94= X 131=	[ ]	[X]	[ ]
Door Operation:			
Center	[ ]	[X]	[ ]
To Side	[X]	[ ]	[ ]

**b. Elevators:**

Manufacturer			
Number _____	[X]	[ ]	[ ]
Type _____	[X]	[ ]	[ ]
Speed _____	[X]	[ ]	[ ]
Capacity (lbs) _____	[X]	[ ]	[ ]
Dimensions _____	[X]	[ ]	[ ]
Door Operation:			
Center	[X]	[ ]	[ ]
To Side	[X]	[ ]	[ ]

**c. Lifts and Hoists:**

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

**d. Conveyors:**

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

**B. COMMENTS:**

THE ELEVATOR WAS INSTALLED IN 1994 AND IS IN GOOD CONDITION.

**C. COMPONENT RATING:**    (\$ 262,000)    ( 97 %) = \$ 253,300  
                                  Possible    Condition    Component  
                                  Value        Value Multiplier    Value

**MECHANICAL/PLUMBING DOMESTIC**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

**a. Services Available:**

	N/A	Sat	Att
Cold Water 3@ IN ROOM 09M , 3@ IN ROOM 01	[ ]	[ ]	[X]
Backflow Valve	[ ]	[ ]	[X]
Hot Water 1@ DHWS AND 3/4@ DHWR	[ ]	[X]	[ ]
Natural Gas 1 1/2@ IN ROOM 09M	[ ]	[X]	[ ]
Other COMPRESSED AIR FROM ROOM 09M	[ ]	[X]	[ ]

**b. Piping & Fittings:**

Cast Iron	[ ]	[X]	[ ]
Copper Pipe	[ ]	[X]	[ ]
Copper Tubing	[X]	[ ]	[ ]
Steel	[ ]	[X]	[ ]
Galv. Steel	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

**c. Water Heaters:**

Gas	[ ]	[X]	[ ]
Steam Converter/Tank	[X]	[ ]	[ ]
Electric	[X]	[ ]	[ ]
Central Hot Water	[X]	[ ]	[ ]

**d. Drainage:**

Storm Drains 1 @ 6@ , 1 @ 8@	[ ]	[X]	[ ]
Sanitary Drainage 1 @ 6@	[ ]	[X]	[ ]
Floor Drains BASEMENT AND MECHANICAL	[ ]	[X]	[ ]

**e. Fixtures: Number**

Water Closets 18	[ ]	[ ]	[X]
Urinals 5	[ ]	[ ]	[X]
Lavatory Sinks 15	[ ]	[ ]	[X]
Kitchen Sinks	[X]	[ ]	[ ]
Service Sinks 5	[ ]	[X]	[ ]
Showers IN ROOM 06T	[ ]	[X]	[ ]
Electric Water Coolers 7	[ ]	[X]	[ ]

**f. Sprinkler Systems:**

[ ]Wet [ ]Dry	[X]	[ ]	[ ]
Halon	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

**g. Standpipe Systems:**

[ ]Wet [ ]Dry	[X]	[ ]	[ ]
Fire Hose Valves [ ]2.5@ [ ]1.25@	[X]	[ ]	[ ]

**d. Underground Tanks**

Fuel Oil Tank	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

**B. COMMENTS:**

THE PLUMBING FIXTURES IN THE RESTROOMS SHOULD BE REPLACED. THERE IS A NONFUNDED PROJECT TO REPLACE THESE FIXTURES. THERE IS A LEAKING FAUCET IN ROOM 371T THAT SHOULD BE REPAIRED. THE GALVANIZED PIPES SHOULD ALSO BE REPLACED.

**C. COMPONENT RATING:** (\$ 1,189,500) ( 60 %) = \$ 713,800  
 Possible Condition Component  
 Value Value Multiplier Value

**MECHANICAL/PLUMBING LABS**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

**a. Services Available:**

	N/A	Sat	Att
Cold Water _____	[ ]	[X]	[ ]
Backflow Valve _____	[ ]	[ ]	[X]
Hot Water _____	[ ]	[X]	[ ]
Acid Waste _____	[X]	[ ]	[ ]
Oxygen _____	[X]	[ ]	[ ]
Natural Gas _____	[ ]	[X]	[ ]
Vacuum _____	[X]	[ ]	[ ]
Distilled Water _____	[X]	[ ]	[ ]
Compressed Air 1 1/2@ _____	[ ]	[X]	[ ]
Steam _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**b. Piping & Fittings:**

Cast Iron _____	[ ]	[X]	[ ]
Duriron Pipe _____	[X]	[ ]	[ ]
Copper Pipe _____	[ ]	[X]	[ ]
Plastic/PVC/CPVC _____	[X]	[ ]	[ ]
Steel _____	[ ]	[X]	[ ]
Galv. Steel _____	[ ]	[X]	[ ]
Glass _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**c. Lab Water Heaters:**

Gas _____	[ ]	[X]	[ ]
Steam Converter/Tank _____	[X]	[ ]	[ ]
Steam Instantaneous _____	[X]	[ ]	[ ]
Central Hot Water _____	[X]	[ ]	[ ]

**d. Underground Tanks**

Neutralization Tank _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**e. Lab Fixtures:**

Lab Sinks _____	[ ]	[X]	[ ]
Emergency Showers _____	[X]	[ ]	[ ]
Eye Wash _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**B. COMMENTS:**

THERE ARE LAB FACILITIES IN THE BASEMENT.

**C. COMPONENT RATING: See previous page**

**MECHANICAL/HEATING**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. Heat Source:</b>			
Central Plant Steam <u>CONVERTED TO HOT WATER FOR HOT DECK</u>	[ ]	[X]	[ ]
Central Plant Hot Water <u>FOR PERIMETER HEATING</u>	[ ]	[X]	[ ]
Boilers: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Furnace/s: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
Heat Pump/s: Type _____	[X]	[ ]	[ ]
Size _____	[X]	[ ]	[ ]
<b>b. Building Heating System Type:</b>			
Steam <u>4@ SUPPLY IN ROOM 009</u>	[ ]	[X]	[ ]
Hot Water <u>6@ HWS, 6@ HWR RM009</u>	[ ]	[X]	[ ]
Warm Air _____	[ ]	[X]	[ ]
<b>c. Air Handling Units:</b>			
Multizone [ ]Preheat [X]Heating [ ]Reheat	[ ]	[X]	[ ]
Dual Duct [ ]Preheat [X]Heating [ ]Reheat	[ ]	[X]	[ ]
Make-up Air [X]Preheat [X]Heating [ ]Reheat	[ ]	[X]	[ ]
Variable Volume Air [ ]Preheat [ ]Heating [ ]Reheat	[X]	[ ]	[ ]
Constant Volume Air [X]Preheat [X]Heating [ ]Reheat	[ ]	[X]	[ ]
Other <u>HEAT PUMP FOR ROOM 320</u>	[ ]	[X]	[ ]
<b>d. Air Filters:</b>			
35% Prefilter[ ]Multi [X]DDAHU [X]MUAHU [ ]VAVAHU [X]CAV	[ ]	[X]	[ ]
85% Bagfilter[ ]Multi [ ]DDAHU [ ]MUAHU [ ]VAVAHU [ ]CAV	[X]	[ ]	[ ]
Postfilter[ ]Multi [ ]DDAHU [ ]MUAHU [ ]VAVAHU [ ]CAV	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>e. Space Heating Equipment:</b>			
Radiators _____	[ ]	[X]	[ ]
Convectors _____	[ ]	[X]	[ ]
Unit Heaters _____	[ ]	[X]	[ ]
Reheat Coils _____	[X]	[ ]	[ ]
VAV Boxes _____	[X]	[ ]	[ ]
CAV Boxes _____	[X]	[ ]	[ ]
DD Boxes _____	[ ]	[X]	[ ]
Fan Coil _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]
<b>f. Control Type:</b>			
[X]Pneu [X] Electric [ ]DDC [X] DDC Upgrade _____	[ ]	[X]	[ ]

**B. COMMENTS:**

THERE WERE NO IMMEDIATE PROBLEMS IDENTIFIED BUT THE STEAM LINES ARE 35 TO 48 YEARS OLD AND SHOULD BE REPLACED IN THE NEXT 5 TO 10 YEARS.

**C. COMPONENT RATING:**    (\$ 1,257,700)    ( 57 %) = \$ 712,700  
                                  Possible    Condition    Component  
                                  Value        Value Multiplier    Value

**COOLING & VENTILATING**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

	N/A	Sat	Att
<b>a. System/Capacity:</b>			
Water <u>160 TONS</u>	[ ]	[X]	[ ]
DX <u>3 UNITS WITH TOTAL OF 65 TONS</u>	[ ]	[X]	[ ]
<b>b. Chillers Capacity/Year/Refrigerant/Manufacturer:</b>			
Centrifugal <u>160 TONS/ 1971/ R-11 / CARRIER</u>	[ ]	[ ]	[X]
Reciprocating <u>TONS/ 1970/ R-22 /</u>	[ ]	[ ]	[X]
Absorption <u>TONS/ 19 / R- /</u>	[X]	[ ]	[ ]
Screw <u>TONS/ 19 / R- /</u>	[X]	[ ]	[ ]
<b>c. Condenser Side:</b>			
Type/Capacity <u>[X]CW [ ]DX 160 TONS</u>	[ ]	[ ]	[X]
<b>d. Air Handling Units:</b>			
Multizone <u>[X]CW [ ]DX [X]HUMD</u>	[ ]	[ ]	[X]
Dual Duct <u>[X]CW [ ]DX [X]HUMD</u>	[ ]	[ ]	[X]
Make-up Air <u>[ ]CW [ ]DX [ ]HUMD</u>	[X]	[ ]	[ ]
Variable Volume <u>[ ]CW [ ]DX [ ]HUMD</u>	[X]	[ ]	[ ]
Constant Volume <u>[ ]CW [X]DX [X]HUMD</u>	[ ]	[X]	[ ]
Other <u>HEAT PUMP FOR ROOM 320</u>	[ ]	[X]	[ ]
<b>e. Additional Air Filters:</b>			
Postfilter <u>[ ]Multi [ ]DDAHU [ ]MUAHU [ ]VAVAHU [ ]CAV</u>	[X]	[ ]	[ ]
Other <u>[ ]HEPA [ ]BAG [ ]CARTRIDGE [ ]CHARCOAL</u>	[X]	[ ]	[ ]
<b>f. Direct Expansion: Number</b>			
Window units <u>9</u>	[ ]	[ ]	[X]
Thru-the-wall <u></u>	[X]	[ ]	[ ]
Single zone <u>2 DX UNITS</u>	[ ]	[ ]	[X]
Other <u></u>	[X]	[ ]	[ ]
<b>g. Distribution Boxes:</b>			
VAV <u>[ ]REHEAT</u>	[X]	[ ]	[ ]
CAV <u>[ ]REHEAT</u>	[X]	[ ]	[ ]
DDAHU <u>[ ]REHEAT</u>	[ ]	[X]	[ ]
Fan Coil <u>[ ]REHEAT</u>	[X]	[ ]	[ ]
<b>h. Special Systems:</b>			
Type <u></u>	[X]	[ ]	[ ]
Capacity <u></u>	[X]	[ ]	[ ]
<b>i. Control Systems:</b>			
<u>[X]Pneu [X] Electric [X]DDC [ ] DDC Upgrade</u>	[ ]	[X]	[ ]
<b>j. Fans:</b>			
Exhaust <u>19</u>	[ ]	[X]	[ ]
Recirculating <u>4</u>	[ ]	[X]	[ ]

**B. COMMENTS:**

THE CHILLERS ARE SCHEDULED TO BE REPLACED WITHIN A FEW YEARS BY THE CENTRAL CHILLED WATER PLANT. IF NEW CENTRAL AIR CONDITIONING IS INSTALLED, IT WILL ELIMINATE THE NEED FOR WINDOW UNITS.

**C. COMPONENT RATING:** (\$ 1,443,700) ( 50 % ) = \$ 721,900  
 Possible Condition Component  
 Value Value Multiplier Value

**ELECTRICAL/SERVICE & DISTRIBUTION**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

**a. Service:**

Substation: [ ]Buckeye, [X]McCracken Power Plant [ ]AEP  
 Primary Voltage: [X]13,200 Volts, [ ]4,160 Volts  
 Switch Gear Circuit No.: PGN8/PGS5

Transformer:

Manufacturer	Type	KVA	Secondary Voltages	Room #
<u>G.E.</u>	<u>SILICON</u>	<u>225</u>	<u>208/120</u>	<u>070M</u>
<u>G.E.</u>	<u>SILICON</u>	<u>225</u>	<u>240/139</u>	<u>070M</u>
<u>G.E.</u>	<u>SILICON</u>	<u>500</u>	<u>480/277</u>	<u>070M</u>
<u>WARD</u>	<u>DRY</u>	<u>500</u>	<u>480/277</u>	<u>010M</u>

**b. Distribution System:** Room 070M Room 010M

**1. Motor Control Center (MCC)** Room 070M Room 460M

Panelboard [X]Fused, [ ]Circuit Breakers  
 Voltage [X]480/3, [ ]277/3, [ ]208/3, [ ]240/1  
 Amperage [ ]1200A, [X]800A, [ ]600A, [ ]300A, [ ]200A

**2. Lighting** Room 070M Room 010M

Panelboard [X]Fused, [ ]Circuit Breakers  
 Voltage [X]480/3, [X]277/3, [ ]208/3, [ ]240/1  
 Amperage [ ]1200A [ ]250A, [ ]200A, [ ]150A, [X]100A

**3. Building Power** Room 070M Room 010M

Panelboard [X]Fused, [ ]Circuit Breakers  
 Voltage [X]480/3, [X]277/3, [ ]208/3, [ ]240/1  
 Amperage [ ]1200, [X]400A, [ ]200A, [ ]150A, [ ]100A

**4. Isolated Ground Power (IGP)** Room \_\_\_\_\_ Room \_\_\_\_\_

Panelboard [ ]Fused, [ ]Circuit Breakers  
 Voltage [ ]480/3, [ ]277/3, [ ]208/3, [ ]240/1  
 Amperage [ ]400A, [ ]250A, [ ]200A, [ ]150A, [ ]100A

**c. Conduit and Wire:**

Conduit: [X]Steel, [ ]Aluminum, [ ]PVC, [ ]Flexible [ ]MIT  
 Conductors: [X]Copper, [ ]Aluminum,  
 Wire: [X]PVC, [ ]Romex, [X]Armored Cable(BX)

**d. Emergency System:**

[ ]Battery backup Room  
 [ ]Emergency Panel Room  
 [ ]UPS Room

**e. Emergency Generator:**

Manufacturer NONE [ ]Diesel [ ]Gasoline [ ]NG  
 Size N/A KVA, N/A Volts, Location, Room # N/A

**B. COMMENTS:**

THE BUILDING OCCUPANTS HAD NO COMPLAINTS ABOUT THE ADEQUACY OF THE POWER IN THE BUILDING AND AT 14 AMPS PER SQUARE FOOT THERE IS AN ADEQUATE SUPPLY.

**C. COMPONENT RATING:** (\$ 248,900 ) ( 73 % ) = \$ 182,500  
 Possible Condition Component  
 Value Value Multiplier Value

**ELECTRICAL/LIGHTING & POWER**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. Lighting (lamp type):</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Fluor 40 watt _____	[ ]	[X]	[ ]
Fluor 32 watt <u>IN LAB 320</u>	[ ]	[X]	[ ]
Fluor Can _____	[X]	[ ]	[ ]
Incandescent <u>IN PENTHOUSE</u>	[ ]	[X]	[ ]
HID [X]Mercury [ ]HPS [ ]Metal Halide <u>OUTSIDE LIGHTS</u>	[ ]	[X]	[ ]
Low Voltage (12V) _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**b. Lighting Levels**

Halls <u>SOUTH BASEMENT STAIRWELL IS DARK</u>	[ ]	[ ]	[X]
Rooms _____	[ ]	[X]	[ ]
Mechanical Rooms _____	[ ]	[X]	[ ]

**c. Fixture Condition**

Fixtures _____	[ ]	[X]	[ ]
Bulbs _____	[ ]	[X]	[ ]
Fixture Lens _____	[ ]	[X]	[ ]

**d. Receptacles & Switches:**

Wall Outlet _____	[ ]	[ ]	[X]
IGP Wall Outlet _____	[X]	[ ]	[ ]
GFIC Breakers _____	[X]	[ ]	[ ]
Switches _____	[ ]	[X]	[ ]
Cover Plates _____	[ ]	[X]	[ ]

**c. Special:**

Lightning Protection _____	[X]	[ ]	[ ]
UPS _____	[X]	[ ]	[ ]
Communication [X]Clock [ ]Public Address [X]Bells	[ ]	[X]	[ ]
Alarm [X]Fire [ ]Security	[ ]	[X]	[ ]
Telecommunication [X]Phones [X]Data [ ]Cable TV	[ ]	[X]	[ ]
Data Systems _____	[ ]	[X]	[ ]
Fiber Optics _____	[ ]	[X]	[ ]

**B. COMMENTS:**

THE LIGHTING LEVEL IN THE SOUTHWEST STAIRWELL AT THE BASEMENT LEVEL IS TO LOW AND A LIGHT NEEDS TO BE INSTALLED. THERE WAS A NEED IDENTIFIED FOR ADDED WALL OUTLETS IN THE ORIGINAL BUILDING.

**C. COMPONENT RATING:** (\$ 1,674,300) ( 67 % ) = \$ 1,116,200  
 Possible Condition Component  
 Value Value Multiplier Value

**SAFETY STANDARDS**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. Exits:</b>	N/A	Sat	Att
Stair Construction:			
concrete _____	[X]	[ ]	[ ]
steel <u>WITH TERRAZZO AND CONCRETE STEPS</u>	[ ]	[ ]	[X]
wood _____	[X]	[ ]	[ ]
Number of Exit Stairs <u>4</u>	[ ]	[X]	[ ]
Number of Other Exits <u>1</u>	[ ]	[X]	[ ]

**b. Fire Rating:**

Construction Type: [ ]IA/B [ ]IIA/B [ ]IIC [X]IIIA [ ]IIIB [ ]IV [ ]V A/B  
 Building Height: 61= ft., 4 stories

**c. Extinguishing Systems:**

Portable _____	[ ]	[X]	[ ]
Standpipe _____	[X]	[ ]	[ ]
Hose Cabinets _____	[X]	[ ]	[ ]
Sprinklers _____	[X]	[ ]	[ ]
Gas Suppression _____	[X]	[ ]	[ ]
Other _____	[X]	[ ]	[ ]

**d. Detection & Alarm Systems:**

Pull Stations _____	[ ]	[X]	[ ]
Bells _____	[ ]	[X]	[ ]
Horns _____	[X]	[ ]	[ ]
Strobes _____	[X]	[ ]	[ ]
Annunciator Panel <u>AT NORTHWEST ENTRANCE</u>	[ ]	[X]	[ ]
Smoke Detectors:			
Halls _____	[X]	[ ]	[ ]
Elevators _____	[X]	[ ]	[ ]
Rooms _____	[X]	[ ]	[ ]
Equip Rooms _____	[X]	[ ]	[ ]
Ducts _____	[X]	[ ]	[ ]

**e. Lighting Systems:**

Exit Signs <u>[X]BATTERY</u> [ ]EMC	[ ]	[X]	[ ]
Exit Lighting <u>[X]BATTERY</u> [ ]EMC	[ ]	[X]	[ ]
Emergency Lighting <u>[X]BATTERY</u> [ ]EMC	[ ]	[ ]	[X]
Emergency Generator <u>NONE</u>	[X]	[ ]	[ ]

**f. Lightning Protection:** \_\_\_\_\_ [X] [ ] [ ]

**B. COMMENTS:**

EXIT LIGHTING IS PROVIDED BY BATTERY OPERATED UNITS. THERE SHOULD BE ADDED EMERGENCY LIGHTING INSTALLED IN THE INTERIOR CORRIDORS.

**C. COMPONENT RATING:** (\$ 393,000 ) ( 67 % ) = \$ 262,000  
                                     Possible           Condition           Component  
                                     Value            Value Multiplier    Value

**BUILDING PERIMETER EVALUATION**

FAC # 26

DATE MAY 97

INSPECTOR: AJR

**A. SYSTEM DESCRIPTION**

<b>a. Building Access:</b>	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Driveway _____	[ ]	[X]	[ ]
Loading Dock _____	[ ]	[X]	[ ]
Sidewalks			
Front <u>RELAY BRICKS AT NORTHWEST ENTRANCE</u>	[ ]	[ ]	[X]
Side _____	[ ]	[X]	[ ]
Rear _____	[ ]	[X]	[ ]
Steps			
Front <u>MISSING HAND RAIL AT NORTHWEST STEPS</u>	[ ]	[ ]	[X]
Side _____	[X]	[ ]	[ ]
Rear _____	[X]	[ ]	[ ]
Ramp _____	[X]	[ ]	[ ]
 <b>b. Lawn and Landscaping:</b>			
Lawn <u>NORTH AND WEST LAWN AREAS NEED TO BE REPAIRED</u>	[ ]	[ ]	[X]
Shrubs <u>ON WEST SIDE NEED TO BE TRIMMED</u>	[ ]	[ ]	[X]
Trees _____	[ ]	[X]	[ ]
Undesirable Insect _____	[X]	[ ]	[ ]
Bedding Material <u>NEEDED ON WEST SIDE</u>	[ ]	[ ]	[X]
Watering System _____	[X]	[ ]	[ ]
Pedestrian Barrier [ ]WOOD POSTS [ ]STEEL POSTS	[X]	[ ]	[ ]
 <b>c. General Site Information:</b>			
Signage <u>AT NEIL AVE.</u>	[ ]	[X]	[ ]
Address Identification <u>ON SIGN</u>	[ ]	[X]	[ ]
Security Lights <u>AT NORTHWEST ENTRANCE SHOULD BE REPAIRED</u>	[ ]	[ ]	[X]
Street Lights _____	[ ]	[X]	[ ]
Drainage _____	[ ]	[X]	[ ]
Storm Drains _____	[ ]	[X]	[ ]

**B. COMMENTS:**

THE LAWN AREAS ON THE WEST AND NORTH SIDES OF THE BUILDING HAVE BEEN DAMAGED BY THE CONSTRUCTION ON NEIL AND 19TH AND NEED EXTENSIVE REPAIRS. THERE ARE LOOSE BRICKS IN THE WALKWAY LEADING TO NEIL AVE. THERE IS A MISSING HAND RAIL AT THE NORTHWEST STEPS LEADING TO 19TH AVE. IVY NEEDS TO BE REMOVED FROM THE NORTH AND WEST SIDES. THE BENCH WALLS AT THE NORTHWEST ENTRANCE NEED TO BE RECAULKED.

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 172 OSU buildings that the Department of Physical Facilities is budgetary responsible. These audits will be used to establish repair and renovation projects, budget cost estimates for these projects, and overall levels of required maintenance funding.

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. This building replacement cost is allocated to each building component to provide an estimated value for each component. Project cost estimates will exceed the building component values in most situations because of tear-out, handling and site limitations that occur in building component replacement projects.

5. DATA USAGE

Repair and Renovation Projects: provided to assist in the budgeting process for the Department of Physical Facilities.

Building Evaluation: provided to give a numerical rating for each building on campus quantifying its percentage of deficiency.

6. 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. on going maintenance, replacement and renovation projects are not included.

(b) Includes exterior building walls and attached items.

(c) Includes the first step up at all entries. Ramps outside the buildings are included; the steps and walks up to the ramps are not included.

(d) Blinds, drapes, light bulbs, and movable furniture are 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

A/C.....	AIR CONDITIONING
AHU.....	AIR HANDLING UNIT
ATT.....	ATTENTION
BLDG.....	BUILDING
BUR.....	BUILT UP ROOF
CAV.....	CONSTANT AIR VOLUME
COND.....	CONDENSATE WATER
CIP.....	CAST IN PLACE
DDAHU.....	DUAL DUCT AIR HANDLING UNIT
DDHV.....	DUAL DUCT HIGH VELOCITY
DHWH.....	DOMESTIC HOT WATER HEATER
DHWR.....	DOMESTIC HOT WATER RETURN
DHWS.....	DOMESTIC HOT WATER SUPPLY
DHWT.....	DOMESTIC HOT WATER TANK
DX.....	DIRECT EXPANSION AIR CONDITIONER
EMC.....	EMERGENCY CIRCUIT
EWC.....	ELECTRIC WATER COOLER
FPM.....	FEET PER MINUTE
GPM.....	GALLONS PER MINUTE
HID.....	HIGH INTENSITY DISCHARGE LIGHT
HPS.....	HIGH PRESSURE STEAM (125 PSI)
HVAC.....	HEATING, VENTILATING AND AIR CONDITIONING
KV.....	KILOVOLTS
KVA.....	KILOVOLTS AMPS
KW.....	KILOWATTS
LC.....	LIQUID COOLED
LF.....	LINEAL FEET
LPS.....	LOW PRESSURE STEAM (15 PSI)
MPS.....	MEDIUM PRESSURE STEAM (50 PSI)
MZCV.....	MULTIZONE CONSTANT VOLUME AIR HANDLING
N/A.....	NOT APPLICABLE
PSI.....	POUNDS PER SQUARE INCH
RM.....	ROOM
RTU.....	ROOF TOP UNIT (HEATING OR A/C)
SAT.....	SATISFACTORY
SF.....	SQUARE FEET
S/P.....	STAND PIPE
SR.....	STEAM RETURN LINE
SS.....	STAINLESS STEEL
SY.....	SQUARE YARDS
T&G.....	TONGUE AND GROVE
TR.....	TERMINAL REHEAT
V.....	VOLTS
VAV.....	VARIABLE AIR VOLUME

**APPENDIX**

BUILDING FLOOR PLANS  
C-1 BUILDING SPACE ASSIGNMENTS