FACILITY AUDIT REPORT
ELECTROSCIENCE LABORATORY, Bldg 009
MARCH 15, 1994

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EXECUTIVE SUMMARY AND PROJECT LIST FOR
ELECTROSCIENCE LABORATORY

The Electroscience Laboratory is a simple concrete block structure with concrete floors. The building was constructed in three increments. Approximately one-half was finished in 1955 and most of the other half in 1964. A small segment was added in 1983. It was built to function primarily as an antenna and electronics lab and is composed of office and laboratory space. It has not been renovated.

The roof is relatively new and still in good condition. The exterior requires painting. The windows while not energy efficient appear to be serviceable. The hallway ceilings are in poor condition and should be replaced. Mechanical systems are still functioning adequately but the HVAC has reached the end of its life expectancy and should be replaced. The electrical distribution system is original but was designed to be extensive and still appears to meet office/lab requirements.

PROPOSED MAINTENANCE PROJECTS:

A. Corrective Maintenance Projects:		**Control #**
1. Paint Exterior	$24,000	1255
2. Replace hallway ceilings and lights.	12,400	2257
3. Replace inner & outer double aluminum doors on south elevation	9,600	2258
Sub Total	**$ 46,000**	
B. Building Improvement/Addition Project:		
1. Replace elevator	$85,000	1572
Sub Total	**$ 85,000**	
C. Projected (over the next 5 yrs) Component Replacement Projects:		
1. Replace air handlers, ductwork, condensers and controls in central HVAC systems	$254,000	2259
2. Replace plumbing fixtures	19,000	2260
Subtotal	**$273,000**	
Total cost for estimated projects =	**$404,000**	

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GENERAL BUILDING INFORMATION

ELECTROSCIENCE LABORATORY #009

BUILDING ADDRESS: 1320 KINNEAR ROAD

GROSS SQ. FT.: 27,201

NET ASSIGNABLE SQ. FT.: 18,405

MECHANICAL/CUSTODIAL AREA SQ. FT.: 8,796

YEAR OF CONSTRUCTION: 1955, MAJOR ADDITION IN 1964, SMALL ADDITION IN 1983

YEAR OF LAST RENOVATION: THE BUILDING HAS NOT BEEN RENOVATED

NUMBER OF STORIES/BASEMENT: 2 STORIES AND TWO ROOF-LEVEL PENTHOUSES

AIR CONDITIONING (Percentage): 90%

CURRENT USE: ELECTRICAL ENGINEERING DEPARTMENT OFFICES AND LABORATORIES

TYPE OF CONSTRUCTION: REINFORCED CONCRETE AND BLOCK STRUCTURE WITH MASONRY EXTERIOR

ESTIMATED REPLACEMENT COST: 3,882,000

WHEELCHAIR ACCESSIBILITY: THE MAIN ENTRANCE ON THE SOUTH SIDE OF THE BUILDING IS ACCESSIBLE VIA A RAMP AND IS EQUIPPED WITH AN ELECTRIC OPENER. THE ELEVATOR DOES NOT MEET ADA STANDARDS.

OVERALL BUILDING CONDITION: SATISFACTORY

NUMBER OF EXIT STAIRWAYS: 3

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

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

BUILDING SYSTEMS INFORMATION

ELECTROSCIENCE LABORATORY #009

HEATING:
Source STEAM FROM BOILERS LOCATED IN THE POWER HOUSE AT THE RESEARCH CENTER
Type Heating System FORCED HOT WATER AND STEAM COILS AT THE AIR HANDLERS
Steam (Line size, valve location) 1-1/2", RM 114M
Building Htg Water (line size, valve location) CONVERTER IN RM 114M

VENTILATION SYSTEM:
TWO MULTIZONE SYSTEMS, ONE TERMINAL REHEAT SYSTEM, WINDOW AIR CONDITIONERS

COOLING:
Bldg % 90 Chillers 3 RECIPROCATING DIRECT EXPANSION UNITS
Window Units 20 Thru-the-wall N/A Direct exp. units N/A

HVAC CONTROL SYSTEM: HONEYWELL PNEUMATIC

ELECTRIC: Source Size(KVA) Primary/Secondary Switchgear & Main Disc. (Rm)
1. SECONDARY FEED FROM RESEARCH CENTER

PLUMBING:
Water (size, valve location) 2", RM 114M
Gas (size, valve location) 1-1/4", RM 114M
Domestic Hot Water (size, valve location) GAS-FIRED TANK IN PENTHOUSE
Compressed Air (size, location) AIR COMPRESSORS IN 114M AND THE PENTHOUSE

SEWERS:
Storm 3 @ 6", 1 @ 8" Sanitary 2 @ 6"
Combination N/A

METERS:
Gas (size, location) N/A - BUILDING IS A SECONDARY FEED FROM RESEARCH CNTR
Water (size, location) 2", RM 114M
Electric (size, location)

ALARM SYSTEMS:
Fire Alarm YES Panel Location 301M
Fire Pump NO Pump Location N/A
Sprinklers NO Panel Location N/A
Other Alarms N/A

ELEVATORS:
Number 1 Type (passenger, freight) FREIGHT
Manufacturer CAPITAL Size 70" X 70"

EMERGENCY GENERATOR: Size N/A Location N/A

KEY BOX LOCATION: INSIDE DOOR AT EAST END OF SOUTH SIDE OF THE BUILDING

ASBESTOS SURVEY (1986):
PIPE INSULATION THROUGHOUT THE BUILDING AND THE HEAT EXCHANGER INSULATION CONTAIN ASBESTOS. THE OFFICE WALL PARTITIONS AT THE WEST END OF THE SECOND FLOOR AND THE NORTH AND SOUTH WALLS AROUND THE WINDOWS APPEAR TO BE COMPOSED OF TRANSITE BUT NO SAMPLES WERE TAKEN.

ELECTROSCIENCE LABORATORY NARRATIVE

HISTORY

The first portion of the Electroscience Laboratory, the east side of the building, was completed in 1955 and named the Antenna Laboratory. In 1964, the building was extended to the west. The building was renamed the Electroscience Laboratory in 1967. A smaller addition was completed in 1983 at the far west end of the building. The facility houses offices and laboratories for the Electrical Engineering Department. Facility use is 46% Office, 44% Laboratory, and 10% Mechanical/Custodial/Toilet.

PRIMARY SYSTEMS

The building is composed of load-bearing concrete block walls and cast-in-place concrete floors. The structure is supported by continuous spread footings and cast-in-place concrete walls under the 1955 portion. 12" thick concrete block foundation walls support the later additions. The building does not have a basement. We did not observe any indications of structural problems.

Most of the roof consists of an insulated 3"-thick concrete slab. The roof over the Anechoic chamber is galvanized steel decking supported by bar joists. The structural decking is covered with rigid insulation. A four-ply fiberglass reinforced built up roof was installed in 1986. The roof is also flood coated with a reflective mastic. The roof appears to be in good condition and no blisters were observed. There are several large patches of mastic at the air cooled condensers mounted outside the penthouse. We observed stains on the ceiling below this area also although there is no reason to believe that there are current leaks in this area. The roof is surrounded by a guard rail that requires repairs in several sections. Drainage is provided by a gutter at the perimeter of the roof and downspouts. The gutter requires attention in the form of minor patching and painting.

The central portion of the south exterior was recently coated with stucco. The rest of the exterior consists of painted concrete block. The paint is generally in poor condition and the entire building should be repainted. The Department of Physical Facilities has proposed a project to repaint the exterior of the building. There is a parapet around the west end of the building. The block at the west corners has been slightly displaced and the mortar is cracked. The area does not appear to have moved recently and the cracks should be repaired. The windows are original and consist of double-hung, projected and fixed units. They are single-glazed and while not very energy efficient, are in good operating condition.

SECONDARY SYSTEMS

Interior partitions are composed of painted concrete block walls. The walls are in good condition throughout most of the building. There has been some water damage to paint on an exterior wall in the data processing room on the second floor and there is some staining on the walls at the middle stairway. The stairway rails are also worn and should be repainted. The restroom walls require attention also.

Floor surface finishes consist of vinyl tile throughout most areas. There is some carpeting in a few offices and the floors of the mechanical rooms are sealed concrete. Surface finishes are in serviceable condition.

The ceilings in most of the departmental space are in good condition. The

hallway ceilings are generally in poor condition. There are water stains from past plumbing and roof leaks and many tiles are dented or scratched. The 1955 section of the building has a perforated 12" X 12" ceiling tile that can not be easily matched and the later additions have 2' X 4' tiles. The hall ceilings should repaired and a new ceiling installed.

SERVICE SYSTEMS

The elevator is original and has a gate. Maintenance personnel reported that it is slow and does not possess two-way leveling capability. The Department of Physical Facilities has proposed a replacement project to provide a modern elevator meeting ADA requirements for the building.

The Electroscience Laboratory is heated and cooled by two multizone and one dual-duct system and a combination of window air conditioners and hot water heaters. The three major HVAC systems are original and have passed replacement age. The oldest system was installed during construction in 1955 and is still operable. Two dx units with air-cooled condensers were installed on the roof in the 1964 addition. Although they are functioning adequately, consideration should be given to modernization of the controls, replacement of the three systems with a central system and expansion to eliminate the window air conditioners. The steam plumbing and heating hot water system are aging but are functioning adequately at this time.

The domestic hot water system is supplied by a fifty-gallon gas-fired hot water tank. Supply is adequate and there were no major problems with the plumbing. Plumbing fixtures are original and will require replacement within the next five to ten years.

ELECTRICITY

Power is provided by a 480-volt secondary feed from a transformer located in the Research Center to two 225 amp switches. There are several step-down transformers in the facility feeding distribution panels for lighting and outlets. No problems were identified by maintenance personnel and occupants reported that electrical power supply and distribution are adequate.

Office and laboratory areas are illuminated with fluorescent light fixtures. The original incandescent fixtures in the east wing have been replaced with fluorescent lights. All panels appeared to be fully utilized but the building was designed to have an abundance of electrical circuits for laboratories. Most of the original laboratory space is now used as offices. There were no signs of overloaded circuits.

SAFETY STANDARDS

The building is equipped with a manual fire alarm system. There are lighted exit signs in the newer sections of the building but the 1955 wing retains its original painted exit signs. There are battery-powered emergency lights in the first and second floor hallways by the elevator. A ramp extends from the parking lot to the main entrance at the center of the building. The main entrance is equipped with an electric door opener.

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 pipe insulation throughout the building. The report also speculates that the office partitions on the west end of the second floor might be composed of transite. Samples were not collected to avoid disturbing the integrity of the material. The report states: "The material was judged to not pose a hazard as long as it is not cut, sanded, or broken during future renovation or construction activities."

BUILDING PERIMETER

The public entry to the building is located on the south side of the facility. There is an asphalt drive and parking lot on the south side of the building. A gravel drive provides access to the east side of the building and out to the antennas north of the building. There are several mature trees immediately adjacent to the building. The sidewalk/ramp to the parking lot should be smoothed where it intersects the parking lot for wheelchair use. The concrete steps at the east entrance on the south side of the building are spalling and require repairs. The building is equipped with incandescent exterior lights and two roof-mounted high intensity discharge lights that illuminate the parking lot. The incandescent lights were not working on the east and north side of the building when we surveyed it. The building should be illuminated on all sides after dark, given its isolated location.

Maintenance Projects (LESS THAN $5000)

1. Repair concrete steps at east entrance of the south side of building.
   Workorder # 01-5064-098888-51

2. Install cover over exposed air handler fan shaft in 114M.
   Workorder # 01-5064-098888-69

3. Scrape and paint water damaged wall in room 248.
   Workorder # 01-5064-098888-71

4. Taper end of handicapped-access ramp at parking lot.
   Workorder # 01-5064-098888-51

5. Replace light bulbs in exterior security lights at the east end and on the north side of the building.
   Workorder # 01-5064-098888-73

6. Paint water-damaged walls in center stairway and stair railings throughout.
   Workorder # 01-5064-098888-71

7. Install proper-length threshold at main entry doors on south side of the building.
   Workorder # 01-5064-098888-71

8. Trim shrubs.
   Workorder # 01-5064-098888-55

9. Straighten letter on building name on south face.
   Workorder # 01-5064-098888-69

10. Repair sidewalk at the east side of the building.
    Workorder # 01-5064-098888-51

11. Repair railing at roof perimeter.
    Workorder # 01-5064-098888-69

12. Patch gutter and repair roof leak above the room 248 area.
    Workorder # 01-5064-098888-73

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BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 009 FACILITY NAME: ELECTROSCIENCE LABORATORY
DATE: 2/17/94 INSPECTOR: JAMES P. HERTENSTEIN
YEAR CONSTRUCTED: 1955, ADDITIONS IN 1964 AND 1983
GROSS SQ FT: 27,201 NET SQ FT: 18,405
REPLACEMENT COST $ 3,882,000 *

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	5.8	225,156	.89	200,389
Columns and Beams	10.3	399,846	.89	355,863
Exterior Walls	15.6	605,592	.68	411,803
Windows & Doors	2.7	104,814	.67	70,225
Roofing	3.7	143,634	.84	120,653
Partitions & Drs.	10.6	411,492	.79	325,079
Wall Finishes	2.3	89,286	.71	63,393
Floor Finishes	5.8	225,156	.79	177,873
Ceilings & Finish	8.2	318,324	.64	203,727
Conveying	1.9	73,758	.57	42,042
Plumbing	2.5	97,050	.77	74,729
Heating	10.0	388,200	.70	271,740
Cooling & Vent.	5.6	217,392	.60	130,435
Elec. Ser. & Dist	.9	34,938	.77	26,902
Lighting & Power	13.3	516,306	.71	366,577
Safety Standards	.8	31,056	.63	19,565
TOTALS	100.00	3,882,000		2,860,995

III. BUILDING RATING SUMMARY

Overall Building Rating = 73.6%

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

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

FOUNDATIONS

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Footings:	N/A	Sat	Att
Individual Footings & Piers	[X]	[ ]	[ ]
Continuous Footings USED THROUGHOUT	[ ]	[X]	[ ]
Grade Beams	[X]	[ ]	[ ]
Piles	[X]	[ ]	[ ]
Caissons	[X]	[ ]	[ ]
b. Foundation Wall Materials:			
Steel	[X]	[ ]	[ ]
Concrete Cast-in-place EAST END OF THE BLDG (1955 SECT.)	[ ]	[X]	[ ]
Concrete Block WEST END OF THE BLDG (1964 ADDITION)	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
c. Waterproofing and Underdrain:			
Coating	[X]	[ ]	[ ]
Membrane USED UNDER SLAB ON GRADE	[ ]	[X]	[ ]
Board	[X]	[ ]	[ ]
Drain Tile	[ ]	[ ]	[ ]
d. Slab on Grade (floor):			
Plain	[X]	[ ]	[ ]
Reinforced FIRST FLOOR OF THE BUILDING	[ ]	[X]	[ ]
e. Special Substructures:			
	[X]	[ ]	[ ]

B. COMMENTS:

THERE IS NO BASEMENT IN THE BUILDING. THE FOUNDATION IS INSULATED WITH 2" OF RIGID INSULATION. NO SIGNS OF FOUNDATION PROBLEMS WERE OBSERVED.

C. COMPONENT RATING: ($225,200) (89 %) = $200,400

Possible Value	Condition Value	Multiplier	Component Value

COLUMNS AND BEAMS

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Columns and Beams:	N/A	Sat	Att
Concrete-in-place JOIST/BEAMS ARE INTEGRAL WITH FLOOR	[ ]	[X]	[ ]
Precast Concrete	[X]	[ ]	[ ]
Steel	[X]	[ ]	[ ]
Steel Fireproofing	[X]	[ ]	[ ]
Wood	[X]	[ ]	[ ]
Other 12" AND 8" CONCRETE BLOCK BEAR LOAD THROUGHOUT	[ ]	[X]	[ ]
b. Floors:			
Concrete Slab THROUGHOUT	[ ]	[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 3" SLAB ON GALVANIZED STEEL DECK	[ ]	[X]	[ ]
Steel DECKING, BAR JOISTS AND TRUSSES	[ ]	[X]	[ ]
Wood	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

NO STRUCTURAL PROBLEMS WERE OBSERVED.

C. COMPONENT RATING: ($399,800) (89 %) = $355,900

Possible Value	Condition Value	Multiplier	Component Value

EXTERIOR WALLS

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

a. Walls:	N/A	Sat	Att
Concrete	[X]	[ ]	[ ]
Masonry CONCRETE BLOCK, BRICK AND LIMESTONE	[ ]	[ ]	[X]
Metal Siding	[X]	[ ]	[ ]
Wood Siding	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

b. Finishes:			
Stucco CENTRAL SECTION OF THE SOUTH SIDE OF THE BUILDING	[ ]	[X]	[ ]
Paint PAINT IS CHIPPING AND DISCOLORED THROUGHOUT	[ ]	[ ]	[X]
Other	[X]	[ ]	[ ]

B. COMMENTS:

THE CONCRETE BLOCK AT THE PARAPET AT THE NORTH AND SOUTH ENDS OF THE WEST SIDE OF THE BUILDING IS LOSE AND SHOULD BE RESET. THE EXTERIOR PAINT REQUIRES ATTENTION THROUGHOUT. A STUCCO COATING WAS APPLIED TO THE CENTRAL SECTION OF THE SOUTH SIDE.

C. COMPONENT RATING: ($605,600) (68 %) = $411,800

Possible Value	Condition Value	Multiplier	Component Value

EXTERIOR WINDOWS & DOORS

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Windows type & number:	N/A	Sat	Att
Wood	[X]	[ ]	[ ]
Steel	[X]	[ ]	[ ]
Alum 78 DOUBLE-HUNG WINDOWS, 36 PROJECTED, 16 FIXED	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
b. Window glazing:			
Single pane THROUGHOUT	[ ]	[X]	[ ]
Double pane	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Doors type & number:			
Wood	[X]	[ ]	[ ]
Steel 11 SINGLE AND 2 SETS OF DOUBLE DOORS	[ ]	[ ]	[X]
Alum 2 SETS OF DOUBLE DOORS	[ ]	[ ]	[X]
Other 2 OVERHEAD DOORS	[ ]	[x]	[ ]
d. Shading Devices:			
Types VENETIAN BLINDS	[ ]	[X]	[ ]

B. COMMENTS:

THE STEEL DOORS SHOULD BE REPAINTED. THE ALUMINUM DOORS ARE ORIGINAL AND ARE WORN. THE THRESHOLD BELOW THE MAIN ENTRY TO THE BUILDING IS TOO SHORT AND LEAKS AIR. IT SHOULD BE REPLACED.

C. COMPONENT RATING: ($104,800) (67 %) = $70,225

Possible Value	Condition Value	Multiplier	Component Value

ROOFING

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Roof Covering:	N/A	Sat	Att
Built-up 14,800 SF, INST-1986, COATED SMOOTH SURFACE	[ ]	[X]	[ ]
Built-up w/gravel	[X]	[ ]	[ ]
Asphalt Shingle	[X]	[ ]	[ ]
Copper	[X]	[ ]	[ ]
Glass (Skylight)	[X]	[ ]	[ ]
Slate	[X]	[ ]	[ ]
Spanish Tile	[X]	[ ]	[ ]
Metal	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Flashing:			
Base & Counter FELT AND METAL	[ ]	[X]	[ ]
Cap	[X]	[ ]	[ ]
Through Wall COPPER	[ ]	[X]	[ ]
Valley & Ridge	[X]	[ ]	[ ]
d. Gravel Stop & Edge Strips:			
Type METAL	[ ]	[X]	[ ]
e. Drainage:			
Gutters w/ Exterior Downspouts	[ ]	[ ]	[X]
Scuppers w/ Exterior Downspouts	[X]	[ ]	[ ]
Drains w/ Interior Storm Drains	[X]	[ ]	[ ]
f. Parapets:			
Concrete	[X]	[ ]	[ ]
Brick WEST SIDE OF ROOF INSIDE	[ ]	[X]	[ ]
Block OUTSIDE OF WEST PORTION, CORNER BLOCKS DISPLACED	[ ]	[ ]	[X]
Precast	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
g. Insulation:			
Type RIGID THROUGHOUT	[ ]	[X]	[ ]

B. COMMENTS

GUTTERS AND DOWNSPOUTS SHOULD BE REPAINTED. THERE APPEARS TO BE SOME LEAKS AT THE GUTTER JOINTS. THE BLOCK AT THE WEST PARAPET SHOULD BE REPAIRED AT THE NORTH AND SOUTH CORNERS. THERE APPEARS TO HAVE BEEN SOME MOVEMENT. THERE IS EVIDENCE OF FORMER LEAKS AT THE AIR-COOLED CONDENSERS BY THE PENTHOUSE.

C. COMPONENT RATING: ($143,600) (84 %) = $120,653

Possible Value	Condition Value	Multiplier	Component Value

PARTITIONS & DOORS

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Partition Framing:			
Concrete Block TYPICAL THROUGHOUT	[ ]	[X]	[ ]
Glazed Block	[X]	[ ]	[ ]
Wood Stud	[X]	[ ]	[ ]
Metal Stud	[X]	[ ]	[ ]
Structural Tile	[X]	[ ]	[ ]
Rated	[X]	[ ]	[ ]
Other TRANSITE WALL PARTITIONS AT WEST END OF 2ND FL	[ ]	[X]	[ ]
b. Special partitions and Walls:			
Toilet METAL - SHOULD BE REPAINTED	[ ]	[ ]	[X]
Screen Walls	[X]	[ ]	[ ]
Gate	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Wall Material:			
Plaster	[X]	[ ]	[ ]
Plaster Board	[X]	[ ]	[ ]
Glass	[X]	[ ]	[ ]
Plywood	[X]	[ ]	[ ]
Paneling	[X]	[ ]	[ ]
Trim & Wainscot	[X]	[ ]	[ ]
Tile/Glazed	[X]	[ ]	[ ]
Other PAINTED CONCRETE BLOCK THROUGHOUT	[ ]	[X]	[ ]
d. Interior Doors & Frames:			
Met Door/Met Frame TYPICAL THROUGHOUT	[ ]	[X]	[ ]
Wood Door/Wood Frame	[X]	[ ]	[ ]
Wood Door/Metal Frame	[X]	[ ]	[ ]
Glazing	[X]	[ ]	[ ]
Rollup EXTERIOR DOORS	[ ]	[X]	[ ]
Sliding	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
e. Hardware:			
Door Closers	[ ]	[ ]	[X]
Lock Sets	[ ]	[X]	[ ]
Kick/Push Plates	[ ]	[X]	[ ]
Thresholds	[ ]	[ ]	[X]
Panic Devices	[ ]	[X]	[ ]
Security & Detection	[X]	[ ]	[ ]
Automatic Openers	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

THRESHOLD AT MAIN ENTRY SHOULD BE REPLACED. THE ENTRY DOOR HARDWARE SHOULD BE REPLACED ALONG WITH THE DOORS. IT IS WORN AND DOES NOT FUNCTION SMOOTHLY.

C. COMPONENT RATING: ($411,500) (79 %) = $325,100

Possible Value	Condition Value	Multiplier	Component Value

WALL FINISHES

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION	N/A	Sat	Att
a. Paint	[ ]	[ ]	[X]
b. Wall Coating ONE WALL OF THE MAIN LOBBY IS STUCCOED	[ ]	[X]	[ ]
c. Wall Coverings USED IN SOME OF THE DEPARTMENTAL SPACE	[ ]	[X]	[ ]
d. Paneling			
Prefinished	[X]	[ ]	[ ]
Plank	[X]	[ ]	[ ]
e. Cork	[X]	[ ]	[ ]
f. Wallpaper	[X]	[ ]	[ ]
g. Ceramic Tile	[X]	[ ]	[ ]
h. Trim & Wainscot	[X]	[ ]	[ ]
i. Decoration	[X]	[ ]	[ ]
j. Glass	[X]	[ ]	[ ]
k. Other	[X]	[ ]	[ ]

B. COMMENTS

THERE HAS BEEN SOME WATER DAMAGE ON THE EXTERIOR WALL IN RM 248. IT SHOULD BE REPAINTED. THE CENTER STAIRWAY AND INTERIOR RAILINGS SHOULD BE PAINTED.

C. COMPONENT RATING: ($89,300) (71%) = $63,400

Possible Value	Condition Value	Multiplier	Component Value

FLOOR FINISHES

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Carpet:			
Rolled LIMITED TO A FEW OFFICES	[ ]	[X]	[ ]
Tile	[X]	[ ]	[ ]
b. Composition:			
Epoxy	[X]	[ ]	[ ]
Synthetic	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Concrete Topping:			
Clear Sealant EAST STAIRWAY AND MAINTENANCE ROOMS	[ ]	[X]	[ ]
Abrasive	[X]	[ ]	[ ]
Epoxy	[X]	[ ]	[ ]
Aggregate	[X]	[ ]	[ ]
d. Resilient:			
Vinyl Tile THROUGHOUT THE BUILDING	[ ]	[X]	[ ]
Linoleum	[X]	[ ]	[ ]
Vinyl	[X]	[ ]	[ ]
Rubber	[X]	[ ]	[ ]
Cork	[X]	[ ]	[ ]
e. Ceramic Tile	[X]	[ ]	[ ]
f. Masonry	[X]	[ ]	[ ]
g. Terrazzo	[X]	[ ]	[ ]
h. Wood	[X]	[ ]	[ ]
i. Metal	[X]	[ ]	[ ]

B. COMMENTS

FLOOR COVERINGS ARE IN GOOD CONDITION THROUGHOUT THE BUILDING.

C. COMPONENT RATING: ($225,200) (79 %) = $177,900

Possible Value	Condition Value	Multiplier	Component Value

CEILINGS AND FINISHES

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. System Type:	N/A	Sat	Att
Exposed	[ ]	[X]	[ ]
Applied to Structure	[X]	[ ]	[ ]
Suspended 12"X12" PERFORATED AND 2'X4' MINERAL TILE	[ ]	[ ]	[X]
b. Materials:			
Drywall	[X]	[ ]	[ ]
Plaster	[X]	[ ]	[ ]
Mineral Fiber Board	[ ]	[ ]	[X]
Metal Pan	[X]	[ ]	[ ]
Luminous Panels	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Finishes:			
Paint	[X]	[ ]	[ ]
Fabric	[X]	[ ]	[ ]
Prefinished	[ ]	[ ]	[X]
Other	[X]	[ ]	[ ]
d. Openings & Inserts:			
Air Distribution	[ ]	[X]	[ ]
Lighting Fixtures	[ ]	[X]	[ ]
Access Panels	[X]	[ ]	[ ]
Skylights	[X]	[ ]	[ ]
Fire Protection	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

HALLWAY CEILINGS ARE IN POOR CONDITION THROUGHOUT. THERE ARE MANY STAINS AND NICKS.

C. COMPONENT RATING: ($318,300) (64 %) = $203,700

Possible Value	Condition Value	Multiplier	Component Value

CONVEYING

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Elevators:	N/A	Sat	Att
Number 1	[ ]	[X]	[ ]
Type HYDRAULIC FREIGHT	[ ]	[X]	[ ]
Speed 50 FPM	[ ]	[ ]	[X]
Capacity (lbs) 3000	[ ]	[X]	[ ]
Dimensions 70" X 70"	[ ]	[X]	[ ]
Door Operation:			
Center	[X]	[ ]	[ ]
To Side GATE	[ ]	[ ]	[X]
b. Lifts and Hoists:			
Number	[X]	[ ]	[ ]
Type	[X]	[ ]	[ ]
c. Moving Stairs and Walks:			
Number	[X]	[ ]	[ ]
Type	[X]	[ ]	[ ]
d. Conveyors:			
Number	[X]	[ ]	[ ]
Type	[X]	[ ]	[ ]
e. Pneumatic Tubes:			
Number	[X]	[ ]	[ ]
Type	[X]	[ ]	[ ]

B. COMMENTS:

THE ELEVATOR IS NOT EQUIPPED WITH AN EMERGENCY PHONE OR HANDICAPPED ACCESSIBLE CONTROLS. LEVELING IS NOT SATISFACTORY (ONE-WAY). THE DEPARTMENT OF PHYSICAL FACILITIES HAS PROPOSED A PROJECT TO REPLACE THE ELEVATOR WITH A MODERN UNIT.

C. COMPONENT RATING: ($73,800) (57 %) = $42,000

Possible Value	Condition Value	Multiplier	Component Value

MECHANICAL/PLUMBING

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Services Available:	N/A	Sat	Att
Cold Water 2" SUPPLY LINE IN RM 114M	[ ]	[X]	[ ]
Hot Water LOCAL HOT WATER TANK	[ ]	[X]	[ ]
Acid Waste NO LONGER USED	[X]	[ ]	[ ]
Oxygen	[X]	[ ]	[ ]
Natural Gas 1-1/4' SUPPLY LINE IN RM 114M FROM RES. CNTR.	[ ]	[X]	[ ]
Vacuum	[X]	[ ]	[ ]
Distilled Water	[X]	[ ]	[ ]
Compressed Air LOCAL COMPRESSORS IN 114M AND PENTHOUSE	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
b. Piping & Fittings:			
Cast Iron SOIL AND VENT PIPING	[ ]	[X]	[ ]
Copper Tubing PNEUMATIC AND DOMESTIC SUPPLY LINES	[ ]	[X]	[ ]
Plastic	[X]	[ ]	[ ]
Steel STEAM LINES AND GAS	[ ]	[X]	[ ]
Glass	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Water Heaters:			
Electric	[X]	[ ]	[ ]
Gas 50-GALLON HOT WATER TANK LOCATED IN THE PENTHOUSE	[ ]	[X]	[ ]
Oil	[X]	[ ]	[ ]
Steam Converter	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
d. Drainage:			
Storm Drains	[ ]	[X]	[ ]
Sanitary Drainage	[ ]	[X]	[ ]
Combined Storm/San.	[X]	[ ]	[ ]
Floor Drains	[ ]	[X]	[ ]
e. Fixtures:			
Water Closets 7	[ ]	[X]	[ ]
Urinals 5	[ ]	[X]	[ ]
Lavatories 7	[ ]	[X]	[ ]
Showers	[X]	[ ]	[ ]
Kitchen Sinks 2	[ ]	[X]	[ ]
Service Sinks 2	[ ]	[X]	[ ]
Drinking Fountains	[X]	[ ]	[ ]
Electric Water Coolers	[ ]	[X]	[ ]
f. Sprinkler Systems:			
Wet	[X]	[ ]	[ ]
Dry	[X]	[ ]	[ ]
g. Standpipe Systems:			
Wet CENTER OF THE EAST WING - SERVES FIRE HOSE CABINETS	[ ]	[X]	[ ]
Dry	[X]	[ ]	[ ]
Valves	[X]	[ ]	[ ]
Hose Cabinets EAST WING HALLWAY 1ST AND 2ND FLOORS	[ ]	[X]	[ ]

B. COMMENTS:

FIXTURES ARE SERVICEABLE BUT AGING. NO SYSTEM LEAKS OR MAJOR PROBLEMS WERE DETECTED.

C. COMPONENT RATING: ($97,100) (77 %) = $74,700

Possible Value	Condition Value	Multiplier	Component Value

MECHANICAL/HEATING

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Heat Source:	N/A	Sat	Att
Central Plant Steam SUPPLIED FROM RES. CNTR POWER HOUSE	[ ]	[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	[ ]	[X]	[ ]
Hot Water	[ ]	[X]	[ ]
Air	[ ]	[ ]	[X]
Multizone STEAM REHEAT COIL AT AIR HANDLER	[ ]	[ ]	[X]
Dual Duct STEAM COIL AT AIR HANDLER	[ ]	[ ]	[X]
Terminal Reheat	[X]	[ ]	[ ]
Variable Volume	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Space Equipment:			
Radiators	[X]	[ ]	[ ]
Convectors	[ ]	[X]	[ ]
2-Pipe Fan Coil	[X]	[ ]	[ ]
Unit Heaters	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
d. Control Type:			
Pneu	[ ]	[ ]	[X]
Electric	[ ]	[ ]	[X]
DDC	[X]	[ ]	[ ]
Manual Valves	[ ]	[X]	[ ]

B. COMMENTS:

SYSTEM IS ORIGINAL AND WHILE IT IS FUNCTIONAL, CONTROL IS POOR AND MOST OF THE PLUMBING IS AGING AND HAS LEAKED AT ONE TIME OR ANOTHER. THE CONTROL SYSTEM SHOULD BE UPGRADED ALONG WITH THE HVAC SYSTEM.

C. COMPONENT RATING: ($388,200) (70 %) = $ 271,740

Possible Value	Condition Value	Multiplier	Component Value

COOLING & VENTILATING

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. System:			
Type MULTIZONE, DUAL DUCT AND WINDOW AIR CONDITIONERS	[ ]	[ ]	[X]
Capacity APPROXIMATELY 75 TONS INCLUDING WINDOW A/C'S	[ ]	[ ]	[X]
b. Chillers:			
Centrifugal	[X]	[ ]	[ ]
Reciprocating 30 YR OLD TRANE & CARRIER,40 YR OLD CARRIER	[ ]	[ ]	[X]
Absorption	[X]	[ ]	[ ]
c. Cooling Towers:			
Type CARRIER - INSTALLED 1954 - LOCATED IN 114M	[ ]	[ ]	[X]
Capacity 10 TONS	[ ]	[ ]	[X]
d. Condensers: TWO AIR-COOLED CONDENSERS ON ROOF	[ ]	[ ]	[X]
e. Space Equipment:			
Direct Expansion -			
Window units USED IN OFFICES IN EAST WING OF BLDG	[ ]	[X]	[ ]
Thru-the-wall	[X]	[ ]	[ ]
Single zone	[X]	[ ]	[ ]
Single zone con. vol.	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
Air/Water -			
2-pipe fan coil	[X]	[ ]	[ ]
Unit ventilators	[X]	[ ]	[ ]
Terminal reheat	[X]	[ ]	[ ]
Variable volume	[X]	[ ]	[ ]
Dual Duct LIMITED TO EAST SIDE 1ST FLOOR	[ ]	[ ]	[X]
Multizone MOST OF THE WEST WING	[ ]	[ ]	[X]
f. Special Systems:			
Type	[X]	[ ]	[ ]
Capacity	[X]	[ ]	[ ]
g. Control Systems:			
Pneu	[ ]	[ ]	[X]
Electric	[ ]	[ ]	[X]
Electronic	[X]	[ ]	[ ]
h. Fans:			
Exhaust 5	[ ]	[X]	[ ]
Recirculating 3 AIR HANDLERS - ALL ORIGINAL EQUIPMENT	[ ]	[ ]	[X]

B. COMMENTS:

THE HVAC SYSTEMS IN THE BUILDING ARE STILL FUNCTIONING BUT ARE 30 TO 40 YEARS OLD AND SHOULD BE REPLACED WITHIN THE NEXT FIVE TO TEN YEARS.

C. COMPONENT RATING: ($217,400) (60 %) = $130,400

Possible Value	Condition Value	Multiplier	Component Value

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

(a)Service:

Substation BUCKEYE 105/205 FEED TO RESEARCH CENTER
Primary Voltage 480 VOLT SECONDARY FROM RESEARCH CENTER

Transformer (LOCATED IN THE RESEARCH CENTER LABELED 'POWER CENTER B')

Manufacture	Type	KVA	Secondary Voltages
ALLIS CHALMERS	OIL	750	480Y/277

(b)Distribution System:

Panelboard (type) CIRCUIT BREAKER
Voltage 480, 208, 120
Amperage 450 AMPS
Conduit STEEL
Conductor COPPER
Wire (type) VARIES
Armored Cable LIMITED USE
Other 8 STEP-DOWN TRANSFORMERS PROVIDE 208/120

(c)Emergency System:

General or (type & capacity) NONE

B. COMMENTS:

BUILDING IS SUPPLIED WITH SECONDARY FEED FROM POWER CENTER B IN THE RESEARCH CENTER.

C. COMPONENT RATING: ($34,900) (77 %) = $26,900

Possible Value	Condition Value	Multiplier	Component Value

ELECTRICAL/LIGHTING & POWER

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Lighting (lamp type):	N/A	Sat	Att
Fluor PREDOMINANT	[ ]	[X]	[ ]
Incand MAINTENANCE ROOMS & PORTION OF 2ND FLOOR HALLWAY	[ ]	[X]	[ ]
HID ROOF-MOUNTED LIGHTING FOR PARKING LOT	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
b. Receptacles & Switches:			
Type & Capacity GROUNDED DUPLEX 120 AND 22O VOLT	[ ]	[X]	[ ]
c. Special:			
Baseboard Heat	[X]	[ ]	[ ]
Lightning Protection RAILING AT THE ROOF IS GROUNDED	[ ]	[X]	[ ]
Communication & Alarm	[X]	[ ]	[ ]
Data Systems LOCAL AREA NETWORK	[X]	[ ]	[ ]

B. COMMENTS:

PANELS APPEAR TO BE FULLY UTILIZED BUT NO PROBLEMS WERE OBSERVED. THE MAJORITY OF THE BUILDING HAD BEEN WIRED ORIGINALLY FOR ELECTRICAL ENGINEERING LABORATORIES AND IS NOW USED FOR OFFICE SPACE. INCANDESCENT LIGHTING HAS BEEN REPLACED IN THE HALLWAYS IN THE 1954 WING WITH FLUORESCENT LIGHTS.

C. COMPONENT RATING: **($516,300)** **(71 %) =** **$366,600**

Possible Value	Condition Value Multiplier	Component Value

SAFETY STANDARDS

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
(a)Exits:			
Stair Construction:			
concrete EAST AND CENTER STAIRWAYS	[ ]	[X]	[ ]
steel WEST STAIRWAY	[ ]	[X]	[ ]
wood	[X]	[ ]	[ ]
Number of exits 13 - INCLUDING OFFICE EXITS	[ ]	[X]	[ ]
(b)Fire Rating:			
Construction Type: I___ II X III___ IV___ V___ VI			
Building Height: 32 ft., 2 stories			
(c)Extinguishing Systems:			
Portable THROUGHOUT	[ ]	[X]	[ ]
Standpipe CENTER OF THE EAST WING	[ ]	[X]	[ ]
Hose Cabinets CENTER OF THE EAST WING	[ ]	[X]	[ ]
Sprinklers	[X]	[ ]	[ ]
Suppression	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
(d)Detection & Alarm Systems:			
Manual Alarm	[ ]	[X]	[ ]
Annunciator	[X]	[ ]	[ ]
Smoke Detectors	[X]	[ ]	[ ]
(e)Lighting Systems:			
Exit Signs	[ ]	[X]	[ ]
Exit Lighting SOME EXIT SIGNS ARE LIGHTED	[ ]	[X]	[ ]
Emergency Lighting CENTER HALL	[ ]	[X]	[ ]
Emergency Generator	[X]	[ ]	[ ]

B. COMMENTS:

EMERGENCY AND EXIT LIGHTING SYSTEMS ARE ORIGINAL AND ARE STILL FUNCTIONAL

C. COMPONENT RATING: ($31,060) (63 %) = $19,570

Possible Value	Condition Value	Multiplier	Component Value

BUILDING PERIMETER EVALUATION

FAC # 009 DATE 2/17/94 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

1. Building Access:	N/A	Sat	Att
Driveway	[ ]	[X]	[ ]
Loading Dock DOORS ARE AT GRADE LEVEL	[X]	[ ]	[ ]
Sidewalks			
Front SOUTH SIDE OF THE BUILDING	[ ]	[X]	[ ]
Side EAST WALK IS CRUMBLING	[ ]	[ ]	[X]
Rear NORTH SIDE	[ ]	[X]	[ ]
Steps			
Front CRACKED AND SPALLING	[ ]	[ ]	[X]
Side	[X]	[ ]	[ ]
Rear ONE STEP AT OFFICE EXIT DOORS	[ ]	[X]	[ ]
Handicap Ramp SHOULD BE SMOOTHED AT PARKING LOT	[ ]	[ ]	[X]
2. Lawn and Landscaping:			
Lawn	[ ]	[X]	[ ]
Shrubs REQUIRE TRIMMING	[ ]	[ ]	[X]
Trees	[ ]	[X]	[ ]
Undesirable Insect	[X]	[ ]	[ ]
Bedding Material SOUTH SIDE OF THE BUILDING	[ ]	[X]	[ ]
Watering System	[X]	[ ]	[ ]
3. General Site Information:			
Signage STRAIGHTEN LETTER ON BUILDING	[ ]	[ ]	[X]
Address Identification ON KINNEAR ROAD	[ ]	[X]	[ ]
Security Lights SEVERAL LIGHTS ARE OUT AT EAST & NORTH	[ ]	[ ]	[X]
Street Lights	[X]	[ ]	[ ]
Drainage	[ ]	[X]	[ ]
Storm Drains	[ ]	[X]	[ ]

B. COMMENTS:

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