

FACILITY AUDIT REPORT
BAKER HALL, Bldg 095
MAY 14, 1993

Prepared by:
James P. Hertenstein
Division of Resource Management
Department of Physical Facilities
The Ohio State University

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EXECUTIVE SUMMARY AND PROJECT LIST
BAKER HALL

Baker Hall is a moderately well maintained 53-year-old building. The dormitory portion of the facility was analyzed for existing maintenance deficiencies. While most systems are functioning adequately at this time, the building has reached an age where maintenance costs will begin accelerating and systems are beginning to require replacement.

The building exterior requires cleaning. The roof is functioning adequately but has not been replaced and will require more maintenance in the coming years. The windows are being replaced with double-pane aluminum frame windows. Finishes are dated but, in general, have been maintained. Most doors are very worn and require replacement. Asbestos-containing materials are limited to pipe insulation and some of the floor tiles. A building survey for the presence of lead paint was negative.

The electrical system was updated in 1964 and there have been no significant mechanical/electrical improvements to the building since then. The current electrical distribution system should be replaced and modernized. The heating hot water and the plumbing systems are original and have reached an age where total system replacement will be warranted in the next ten years. There is no air conditioning in the building and the ventilation system is inadequate and limited to the hallways and restrooms. The low ceiling heights in the majority of the building would make a central air conditioning system expensive to install and maintain. The elevators are original and require replacement to be brought up to modern standards. The upper floors of the east wing, which is not serviced by an elevator, are not at the same level as the floors in the other wings and, as a result, are not wheelchair accessible.

A facility assessment of Baker Hall and Commons was conducted in 1992 by Bohm-NBBJ for Residence and Dining Halls. In addition to the mechanical/electrical problems, the analysis also identified code compliance deficiencies that would need to be corrected during any major renovation projects and recommended replacing the carpeting in the dorm rooms.

The list on the next page includes maintenance projects similar in nature to those recommended in building condition audits for buildings maintained by the Physical Facilities Department. A number of these projects were included in the Bohm-NBBJ report but not all of the Bohm-NBBJ projects are listed. The Bohm-NBBJ analysis recommended a total of \$8.3 million in renovation costs for system replacement/repair and building improvement costs. Additional funding would be required for whole-building air conditioning and ADA compliance.

MAINTENANCE PROJECTS

A. Corrective Maintenance Projects:

- 1. Replace/modernize elevators.....\$225,000
- 2. Repair slate roofing and gutters.....29,900
- 3. Clean and reseal masonry, replace sealants..... 96,200
- Sub Total \$351,100**

B. Building Improvement/Addition Project:

- 1. Replace/improve electric distribution system..\$1,001,000
- 2. Replace interior lighting system.....553,500
- 2. Replace power service entry.....333,700
- 3. Install sprinklers.....160,500
- 4. Upgrade/replace emergency and exit lighting.....68,000
- 5. Improve fire detection and alarm system.....91,000
- 6. Replace dormitory room doors and hardware.....266,000
- Sub Total \$2,473,700**

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

- 1. Replace domestic plumbing system.....\$ 88,000
- 2. Replace hot water heating system.....201,650
- Sub Total \$ 289,650**

Total cost for estimated projects = \$ 3,114,450

14 MAY 93

GENERAL BUILDING INFORMATION

BAKER HALL (RESIDENCE AREA)

#095

BUILDING ADDRESS: 93 AND 129 WEST 12TH AVENUE

GROSS SQ. FT.: 168,420

NET ASSIGNABLE SQ. FT.: 119,420

MECHANICAL/CUSTODIAL AREA SQ. FT.: 17,414

YEAR OF CONSTRUCTION: 1940

YEAR OF LAST RENOVATION: WEST WING WAS ADDED IN 1957

NUMBER OF STORIES/BASEMENT: BASEMENT AND 5 STORIES

AIR CONDITIONING (Percentage): 1%

CURRENT USE: STUDENT DORMITORY, SOME OFFICE SPACE AND DINING COMMONS (COMMONS WAS NOT EVALUATED IN THIS BUILDING CONDITION AUDIT)

TYPE OF CONSTRUCTION: REINFORCED CONCRETE FRAME WITH MASONRY VENEER

ESTIMATED REPLACEMENT COST (EXCLUDES COMMONS): 20,481,000 *

WHEELCHAIR ACCESSIBILITY: RAMP AT THE WEST ENTRANCE ON THE NORTH SIDE OF THE BUILDING. (THE DOOR IS NOT EQUIPPED WITH AN AUTOMATIC OPENER). RAMP AT EAST DOOR ON NORTH SIDE EQUIPPED WITH AN OPENER.

OVERALL BUILDING CONDITION: MAJOR REHABILITATION REQUIRED **

NUMBER OF EXIT STAIRWAYS: 11

* Replacement Cost assigned November 1991 by The Office of Campus Planning and Space Utilization was adjusted to exclude commons area of the complex.

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

BUILDING SYSTEMS INFORMATION

BAKER HALL (RESIDENCE AREA) #095

HEATING:

Source PRIMARY: STEAM CONVERTERS TO HEATING HOT WATER LOCATED IN PARK HALL
Type Heating System FORCED HOT WATER HEATING
Steam (Line size, valve location) 3" IN SOUTH TUNNEL (SERVES COMMONS)
Building Htg Water (line size, valve location) 2 @ 6" IN SOUTH TUNNEL

VENTILATION SYSTEM:

MAKE-UP AIR SUPPLIED TO BATHROOMS AND HALLWAYS ONLY

COOLING:

Bldg % 1 Chillers 0
Window Units 9 Thru-the-wall 0 Direct exp. units 0

HVAC CONTROL SYSTEM:

N/A

ELECTRIC: Source Size(KVA) Primary/Secondary Switchgear & Main Disc. (Rm)
1. BUCKEYE (102/206) 500 13,200 - 208Y/120 NORTH SIDE OF BUILDING

PLUMBING:

Water (size, valve location) 4" - B098, 4" - CRAWL SPACE UNDER EAST WING
Gas (size, valve location) N/A
Domestic Hot Water (size, valve location) 4" - TUNNEL @ B081, 3" - B152
Compressed Air (size, location) N/A

SEWERS:

Storm 0 Sanitary 0 Combination 2 @ 12", 1 @ 8"

METERS:

Gas (size, location) N/A
Water (size, location) N/A
Electric (location) CLOSET BY TELEPHONE IN EAST LOBBY

ALARM SYSTEMS:

Fire Alarm YES Panel Location BEHIND RESIDENCE DESK
Fire Pump NO Pump Location N/A
Sprinklers PARTIAL Panel Location N/A SPRINKLERS LOCATED IN TRASH RM ONLY
Other Alarms NONE

ELEVATORS:

Number 3 Type (passenger, freight) 1 PASSENGER, 2 FREIGHT
Manufacturer 2-WARNER, 1 - OTIS Size FREIGHT - 2000 LBS, PASS.- 2500 LBS

EMERGENCY GENERATOR: Size NONE Location N/A

KEY BOX LOCATION: N/A

ASBESTOS SURVEY (1986): ASBESTOS CONTAINING MATERIALS IN PIPE INSULATION IN CHASES.

BAKER HALL NARRATIVE

HISTORY

The majority of the Baker Hall complex was completed in 1940. The west wing was added in 1957. The building was designed and built to be a residence hall and has remained one since it was constructed. Baker Commons, located on the south side of the building was added in 1955 and was not evaluated in this building condition audit. This audit will address conditions in the dormitory section of the complex that is referred to as Baker Hall. There are Residence and Dining Hall administrative offices on the ground floor of the west wing but the majority of the building remains a dormitory. Facility use by room category is 73% residence, 18% mechanical, custodial and toilet, 7% miscellaneous support uses, and 2% offices.

PRIMARY SYSTEMS

Baker Hall has five stories, a partial basement and an attic. The foundation consists of concrete footings and piers and cast-in-place concrete walls. Cast-in-place concrete columns support concrete floors located throughout the building. Above the ground floor, all floors are constructed on 9' vertical centers leaving approximately 8'6" of clear height. The exterior consists of structural concrete blocks with a brick veneer or of cast-in-place concrete. The roof structure is composed of steel rafters with wood decking. The structure appears to be in good condition.

The roofing is composed of slate shingles on the sloping sides and standing seam copper on the flat top of the roof. The dormers on the fourth floor are also sided with slate shingles. There is some limited use of built-up roofing, principally over the elevator penthouses. The slate is original and is generally in good condition although there are a number of missing or broken tiles chiefly at the dormers. The copper top appears to be functioning adequately at this time. There was some evidence of leakage in the attic below the joint between the copper and the slate. Residence and Dining Hall maintenance personnel reported that there have been very few problems with roof leaks. The gutters require attention in several locations but overall are in good condition.

The exterior is primarily a brick veneer. The exterior walls should be cleaned and sealed. All the windows and the aluminum doors are being replaced at this time. The new windows are double-pane, double-hung aluminum frame windows. The original wood doors should be refinished.

SECONDARY SYSTEMS

Interior partition walls are predominantly glazed tile or plastered structural tile. Unpainted glazed block is the primary wall finish in this building. There are also painted plaster, concrete and concrete block walls in Baker Hall. Surface finishes are in fair to good condition throughout the building.

Most of the residence area is carpeted. Carpeting in the dorm rooms is generally in poor condition. The hallway carpeting was replaced within the last three years and is still in good condition although it is beginning to wear. The floors in the bathrooms have been replaced within the last year with new vinyl and the shower stall areas have a new epoxy coating. Public areas on the ground floor have vinyl tile or terrazzo floors that are in good condition.

The ceilings consist of plastered concrete, painted concrete or suspended 12"

by 12" acoustical tile. The hallway ceilings are textured. Ceilings are generally in good condition with exception of stained or missing tiles that have resulted from plumbing leaks on the floor above.

SERVICE SYSTEMS

Heat is supplied to the building by a forced hot water radiation system. The main supply for heating hot water is a series of steam converters located in Park Hall which serves several of the dormitories in the area. Heating hot water is also available from the campus loop from the University power plant. The system was reported by maintenance personnel to be functioning adequately but with increasing problems resulting from its age. The radiators have a tendency to fill with sediment. Maintenance personnel reported they had cleared the sediment from the radiators located on several risers recently. Control is accomplished with manual valves. The Bohm-NBBJ study concluded that the radiators are obsolete by modern standards and should be replaced.

Domestic hot water is provided by hot water converters located in Park Hall. Maintenance personnel in Residence and Dining Halls have replaced all the bathroom fixtures in the building within the last year. The cast iron waste plumbing system is aging and will require replacement within the next five to ten years according to the Bohm-NBBJ report. Residence and Dining Hall maintenance personnel were unaware of any major problems with the domestic waste piping system.

ELECTRICITY

A 500 KVA transformer with primary voltage of 13,200 and secondary voltage of 208Y/120 serves the residence hall portion of the complex. A separate transformer provides power for Baker Commons. Utility Division utilization records indicate that the transformer is utilized at approximately 50% of capacity. It should be noted that any major expansion of the HVAC system will require additional transformer capacity. There were no signs of overloaded circuits in the electrical panels and while all space in the panels was utilized several circuits were label 'spare' in each box.

Fluorescent light fixtures are used in the corridors, public areas and bathrooms. They are in serviceable condition. Incandescent lighting is also used in the residence rooms and bathrooms. There are 120 volt duplex convenience outlets throughout the building. The convenience outlets are grounded through the conduit. The electric distribution and lighting systems have not been updated since 1964. They should be updated if any major renovations are contemplated.

SAFETY STANDARDS

Smoke detectors are located throughout the building including all the hallways and in each dormitory room. The building has lighted exit signs. The east entrance on the north side of the building is equipped with a ramp up from grade level and an electric opener. The west entrance on the north side of the building is also accessible via a ramp but is not equipped with an electric opener. The public entrance area is illuminated and there are no obstructions close to the door. The Environmental and Occupational Health and Safety Division surveyed the building for the presence of lead paint and concluded that there is no significant hazard in the building.

The BOHM-NBBJ Facility assessment of May 1992, identified the following dormitory-related safety issues: the stairs in D and H wings are not enclosed in 2

hr. rated construction; dorm room doors are not fire rated; doors at the stairs do not comply with code (glass panels are too large and door assemblies do not have a 1-1/2 hr rating); There are no sprinklers in the attic space that is being used as a storage area for flammable bedding; and a fire suppression system should be added to the recreation room.

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 insulation surrounding the pipes located in chases throughout the building. The remaining original floor tile contains asbestos.

BUILDING PERIMETER

The structure is handicapped accessible via a ramp located at the northwest entrance to the building. There are sidewalks on all sides of the building. The asphalt sidewalk on the north side of the building is wavy and uneven. There are also several sunken spots or spalled areas at other points around the building but the sidewalks generally are in fair to good condition. The residence hall portion of the building is serviced by loading dock on the south side of the building.

The shrubs surrounding the building are very mature but appear to have been trimmed. Entrances are not obstructed and the security lighting around the building appears to provide adequate illumination at the entrances and perimeter after dark. The north transformer area should be completely enclosed to minimize potential security problems by the Commons loading dock.

14 MAY 93

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 095 FACILITY NAME: BAKER HALL (DINING COMMONS EXCLUDED)
 DATE: 4/23/93 INSPECTOR: JAMES P. HERTENSTEIN
 YEAR CONSTRUCTED: 1940, WEST WING ADDED IN 1957
 GROSS SQ FT: 168,420 NET SQ FT: 119,490
 REPLACEMENT COST \$ 20,481,000 *

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	5.3	1,085,493	.82	890,104
Columns and Beams	14.6	2,990,226	.82	2,451,985
Exterior Walls	10.5	2,150,505	.59	1,268,798
Windows & Doors	4.3	880,683	.43	378,694
Roofing	3.9	798,759	.72	575,106
Partitions & Drs.	15.4	3,154,074	.76	2,397,096
Wall Finishes	2.7	552,987	.85	470,039
Floor Finishes	9.0	1,843,290	.76	1,400,900
Ceilings & Finish	1.9	389,139	.76	295,746
Conveying	1.8	368,658	.47	173,269
Plumbing	7.4	1,515,594	.77	1,167,007
Heating	9.0	1,843,290	.60	1,105,974
Cooling & Vent.	.9	184,329	.84	154,836
Elec. Ser. & Dist	1.8	368,658	.90	331,792
Lighting & Power	9.0	1,843,290	.65	1,198,139
Safety Standards	2.5	512,025	.63	322,576
TOTALS	100.00	20,481,000		14,582,061

III. BUILDING RATING SUMMARY

Overall Building Rating = 71.2%

* Replacement Cost assigned September 1991 by The Office of Campus Planning and Space Utilization has been adjusted to exclude the Dining Commons addition.

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

FOUNDATIONS

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Footings:			
Individual Footings & Piers _____	[]	[X]	[]
Continuous Footings _____	[]	[X]	[]
Grade Beams _____	[]	[X]	[]
Piles _____	[X]	[]	[]
Caissons _____	[X]	[]	[]
b. Foundation Wall Materials:			
Steel _____	[X]	[]	[]
Concrete Cast-in-place _____	[]	[X]	[]
Concrete Block _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Waterproofing and Underdrain:			
Coating _____	[X]	[]	[]
Membrane _____	[X]	[]	[]
Board _____	[X]	[]	[]
Drain Tile <u>6" PERIMETER TILE AT 1957 ADDITION</u>	[]	[X]	[]
d. Slab on Grade (floor):			
Plain _____	[X]	[]	[]
Reinforced _____	[]	[X]	[]
e. Special Substructures:			
_____	[X]	[]	[]

B. COMMENTS:

NO EVIDENCE OF SETTLING, MOVEMENT OR MOISTURE PROBLEMS.

C. COMPONENT RATING: (\$1,085,000) X (82 %) = \$ 890,100
 Possible Condition Component
 Value Value Multiplier Value

COLUMNS AND BEAMS

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Columns and Beams:

	N/A	Sat	Att
Concrete-in-place <u>PREDOMINANT</u>	[]	[X]	[]
Precast Concrete _____	[X]	[]	[]
Steel _____	[]	[X]	[]
Steel Fireproofing <u>STEEL I-BEAMS ARE ENCASED IN CONCRETE</u>	[]	[X]	[]
Wood _____	[X]	[]	[]
Other _____	[]	[]	[]

b. Floors:

Concrete Slab <u>REINFORCED, 5" SLABS, INTEGRAL JOISTS & BEAMS</u>	[]	[X]	[]
Precast Slab _____	[X]	[]	[]
Metal Deck _____	[X]	[]	[]
Metal Deck w/concrete fill _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Roof System:

Flat <u>TOP OF ROOF IS FLAT WITH STANDING SEAM COPPER</u>	[]	[X]	[]
Pitched <u>SIDES - COVERED WITH SLATE</u>	[]	[X]	[]
Concrete _____	[X]	[]	[]
Steel <u>RAFTERS ARE I-BEAMS</u>	[]	[X]	[]
Wood <u>DECKING ON STEEL SUPERSTRUCTURE</u>	[]	[X]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

NO STRUCTURAL PROBLEMS WERE EVIDENT.

C. COMPONENT RATING: (\$2,990,000) x (82 %) = \$2,452,000

Possible	Condition	Component
Value	Value Multiplier	Value

EXTERIOR WALLS

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Walls:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Concrete <u>FORMED TO SIMULATE MASONRY - STAINS</u>	[]	[]	[X]
Masonry <u>BRICK & LIMESTONE TRIM - DIRTY</u>	[]	[]	[X]
Metal Siding <u>AGING COPPER AT BAY WINDOWS</u>	[]	[]	[X]
Wood Siding _____	[X]	[]	[]
Other _____	[X]	[]	[]
b. Finishes:			
Stucco _____	[X]	[]	[]
Paint <u>WOOD TRIM AT DORMER WINDOWS IS IN POOR CONDITION</u>	[]	[]	[X]
Other _____	[X]	[]	[]

B. COMMENTS:

MORTAR GENERALLY APPEARS TO BE IN GOOD CONDITION. THE BUILDING WOULD BENEFIT FROM CLEANING AND SEALING WITH SPOT REPLACEMENT OF CAULKING AS REQUIRED. THE DORMER WINDOWS ARE IN VERY POOR CONDITION. RESIDENCE AND DINING HALLS IS CURRENTLY REPLACING ALL THE WINDOWS IN THE BUILDING. THIS WILL REPLACE THE CAULKING AT THE WINDOWS AND THE DORMER WINDOWS WILL BE REPLACED WHICH SHOULD ALLEVIATE THE NEED TO PAINT THE WINDOWS.

C. COMPONENT RATING: (\$2,151,000) x (59 %) = \$1,269,000

Possible	Condition	Component
Value	Value Multiplier	Value

EXTERIOR WINDOWS & DOORS

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Windows type & number:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Wood <u>CURRENTLY BEING REPLACED</u>	[]	[]	[X]
Steel <u>CURRENTLY BEING REPLACED</u>	[]	[]	[X]
Alum <u>ORIGINAL WINDOWS BEING REPLACED</u>	[]	[]	[X]
Other _____	[X]	[]	[]
 b. Window glazing:			
Single pane <u>ALL SINGLE PANE WINDOWS BEING REPLACED</u>	[]	[]	[X]
Double pane <u>ALL REPLACEMENT WINDOWS</u>	[]	[X]	[]
Other _____	[X]	[]	[]
 c. Doors:			
Wood <u>WOODEN DOORS REQUIRE REFINISHING</u>	[]	[]	[X]
Steel _____	[X]	[]	[]
Alum <u>ALUMINUM DOORS ARE BEING REPLACED ALONG WITH WINDOWS</u>	[]	[]	[X]
Other _____	[X]	[]	[]
 d. Shading Devices:			
Types <u>CURTAINS AND BLINDS</u>	[]	[X]	[]

B. COMMENTS:

MOST OF THE ORIGINAL WINDOWS WERE INTACT AT THE TIME OF INSPECTION BUT THE REPLACEMENT PROJECT HAS STARTED. THE WINDOWS WILL BE REPLACED BY THE END OF THE SUMMER ALONG WITH ALL ALUMINUM DOORS. (THE CONDITION VALUE RATING REFLECTS THE CONDITION OF THE CURRENT WINDOWS)

C. COMPONENT RATING: (\$ 880,700) x (43 %) = \$378,700

Possible	Condition	Component
Value	Value Multiplier	Value

ROOFING

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Roof Covering:	N/A	Sat	Att
Built-up _____	[X]	[]	[]
Built-up w/gravel <u>LIMITED TO AREA OVER ELEVATORS</u>	[]	[X]	[]
Asphalt Shingle _____	[X]	[]	[]
Copper <u>17,200 SF, 1940,1957, STANDING LOCK SEAM</u>	[]	[X]	[]
Glass (Skylight) _____	[X]	[]	[]
Slate <u>27,000 SF, 1940, 1957</u>	[]	[]	[X]
Spanish Tile _____	[X]	[]	[]
Metal _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Flashing:

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

d. Gravel Stop & Edge Strips:

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

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

f. Parapets:

Concrete _____	[X]	[]	[]
Brick <u>GABLE ENDS</u>	[]	[X]	[]
Block _____	[X]	[]	[]
Precast _____	[X]	[]	[]
Other <u>LIMESTONE COPING</u>	[]	[X]	[]

g. Insulation:

Type _____	[X]	[]	[]
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B. COMMENTS

THERE IS SOME EVIDENCE OF PAST LEAKS AT JOINTS IN THE ATTIC. MAINTENANCE PERSONNEL COMMENTED THAT THERE HAVE BEEN VERY FEW PROBLEMS WITH THE ROOF. THERE ARE A NUMBER OF MISSING/BROKEN SLATES PARTICULARLY AROUND THE FOURTH FLOOR DORMERS THAT SHOULD BE REPLACED. SOME OF THE GUTTERS REQUIRE REPAIRS

C. COMPONENT RATING: (\$ 798,800) x (72 %) = \$ 575,100
 Possible Condition Component
 Value Value Multiplier Value

PARTITIONS & DOORS

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Partition Framing:

	N/A	Sat	Att
Concrete Block _____	[]	[X]	[]
Glazed Block _____	[]	[X]	[]
Wood Stud _____	[]	[X]	[]
Metal Stud _____	[]	[X]	[]
Structural Tile _____	[]	[X]	[]
Rated _____	[X]	[]	[]
Other _____	[X]	[]	[]

b. Special partitions and Walls:

Toilet <u>MARBLE</u> _____	[]	[X]	[]
Screen Walls _____	[X]	[]	[]
Gate _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Wall Material:

Plaster <u>STRUCTURAL TILE PLASTERED IN DORM ROOMS</u> _____	[]	[X]	[]
Plaster Board <u>ON STUDS</u> _____	[]	[X]	[]
Glass <u>GLASS BLOCK WALL (LIMITED USE)</u> _____	[]	[X]	[]
Plywood _____	[X]	[]	[]
Paneling <u>LIMITED USE</u> _____	[]	[X]	[]
Trim & Wainscot <u>LIMITED USE</u> _____	[]	[X]	[]
Tile/Glazed <u>USED THROUGHOUT - MOST NEVER PAINTED</u> _____	[]	[X]	[]
Other _____	[X]	[]	[]

d. Interior Doors & Frames:

Met Door/Met Frame _____	[]	[X]	[]
Wood Door/Wood Frame _____	[X]	[]	[]
Wood Door/Metal Frame <u>DOORS ARE WORN FROM YEARS OF USE</u> _____	[]	[]	[X]
Glazing _____	[X]	[]	[]
Rollup _____	[X]	[]	[]
Sliding _____	[X]	[]	[]
Other _____	[X]	[]	[]

e. Hardware:

Door Closers _____	[]	[X]	[]
Lock Sets _____	[]	[X]	[]
Kick/Push Plates _____	[]	[X]	[]
Thresholds _____	[]	[X]	[]
Panic Devices _____	[]	[X]	[]
Security & Detection _____	[X]	[]	[]
Automatic Openers _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

DOOR FINISHES ARE WORN OUT. PARTITIONS ARE IN GOOD CONDITION. MOST OF THE GLAZED BLOCK WALLS HAVE NOT BEEN PAINTED.

C. COMPONENT RATING: (\$3,154,000) X (76 %) = \$2,397,000
 Possible Condition Component
 Value Value Multiplier Value

WALL FINISHES

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint _____	[]	[X]	[]
b. Wall Coating _____	[X]	[]	[]
c. Wall Coverings _____	[X]	[]	[]
d. Paneling			
Prefinished _____	[]	[X]	[]
Plank _____	[X]	[]	[]
e. Cork _____	[X]	[]	[]
f. Wallpaper _____	[X]	[]	[]
g. Ceramic Tile _____	[X]	[]	[]
h. Trim & Wainscot <u>LIMITED USE</u> _____	[]	[X]	[]
i. Decoration _____	[X]	[]	[]
j. Glass <u>DECORATIVE GLASS BLOCK WALL</u> _____	[]	[X]	[]
k. Other _____	[X]	[]	[]

B. COMMENTS

WALL FINISHES ARE PRIMARILY PAINTED CONCRETE, PAINTED CONCRETE BLOCK AND PAINTED PLASTER. WALL SURFACES ARE GENERALLY WELL MAINTAINED.

C. COMPONENT RATING: (\$553,000) X (85 %) = \$ 470,000
 Possible Condition Component
 Value Value Multiplier Value

FLOOR FINISHES

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Carpet:			
Rolled <u>HALLWAYS AND DORM ROOMS, DORM CARPETS ARE WORN</u>	[]	[]	[X]
Tile _____	[X]	[]	[]
b. Composition:			
Epoxy _____	[X]	[]	[]
Synthetic _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Concrete Topping:			
Clear Sealant <u>STORAGE AREAS</u>	[]	[X]	[]
Abrasive _____	[X]	[]	[]
Epoxy <u>RECENTLY INSTALLED IN SHOWER FLOORS</u>	[]	[X]	[]
Aggregate _____	[X]	[]	[]
d. Resilient:			
Vinyl Tile <u>USED THROUGHOUT-GENERALLY COVERED WITH CARPET</u>	[]	[X]	[]
Linoleum _____	[X]	[]	[]
Vinyl <u>RECENTLY INSTALLED IN RESTROOMS</u>	[]	[X]	[]
Rubber _____	[X]	[]	[]
Cork _____	[X]	[]	[]
e. Ceramic Tile _____	[X]	[]	[]
f. Masonry _____	[X]	[]	[]
g. Terrazzo <u>STAIRWAY LANDINGS</u>	[]	[X]	[]
h. Wood _____	[X]	[]	[]
i. Metal _____	[X]	[]	[]

B. COMMENTS

CARPET IN HALLWAYS IS THREE YEARS OLD AND IN ACCEPTABLE CONDITION. CARPET IN RESIDENCE'S ROOMS IS GENERALLY WORN REQUIRING REPLACEMENT. BATHROOM FLOORS HAVE NEW VINYL AND THE SHOWER FLOORS HAVE BEEN RESURFACED.

C. COMPONENT RATING: (\$1,843,000) X (76 %) = \$1,400,000
 Possible Condition Component
 Value Value Multiplier Value

MECHANICAL/PLUMBING

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Services Available:	N/A	Sat	Att
Cold Water <u>BUILDING IS SERVICED BY 3 - 4" LINES</u>	[]	[X]	[]
Hot Water <u>SUPPLIED BY CENTRAL STEAM CONVERTER-PARK HALL</u>	[]	[X]	[]
Acid Waste _____	[X]	[]	[]
Oxygen _____	[X]	[]	[]
Natural Gas _____	[X]	[]	[]
Vacuum _____	[X]	[]	[]
Distilled Water _____	[X]	[]	[]
Compressed Air _____	[X]	[]	[]
Other _____	[X]	[]	[]
b. Piping & Fittings:			
Cast Iron <u>PIPING IS AGING BUT FUNCTIONAL</u>	[]	[X]	[]
Copper Tubing <u>SUPPLY AND SOME DRAIN LINES</u>	[]	[X]	[]
Plastic _____	[X]	[]	[]
Steel <u>GALVANIZED</u>	[]	[X]	[]
Glass _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Water Heaters:			
Electric _____	[X]	[]	[]
Gas _____	[X]	[]	[]
Oil _____	[X]	[]	[]
Steam Converter <u>3 IN PARK HALL SUPPLY SEVERAL BUILDINGS</u>	[]	[X]	[]
Other _____	[X]	[]	[]
d. Drainage:			
Storm Drains _____	[X]	[]	[]
Sanitary Drainage _____	[X]	[]	[]
Combined Storm/San. <u>2 @ 12", 1 @ 8"</u>	[]	[X]	[]
Floor Drains _____	[X]	[]	[]
e. Fixtures:			
Water Closets _____	[]	[X]	[]
Urinals _____	[]	[X]	[]
Lavatories _____	[]	[X]	[]
Showers _____	[]	[X]	[]
Kitchen Sinks _____	[X]	[]	[]
Service Sinks _____	[]	[X]	[]
Drinking Fountains _____	[X]	[]	[]
Electric Water Coolers _____	[]	[X]	[]
f. Sprinkler Systems:			
Wet <u>TRASH ROOM ONLY</u>	[]	[X]	[]
Dry _____	[X]	[]	[]
g. Standpipe Systems:			
Wet <u>SERVES HOSE CABINETS LOCATED IN EACH WING</u>	[]	[X]	[]
Dry _____	[X]	[]	[]
Valves _____	[X]	[]	[]
Hose Cabinets _____	[]	[X]	[]

B. COMMENTS:

RESIDENCE AND DINING HALL MAINTENANCE PERSONNEL REPORTED THAT THEY HAVE RECENTLY REPLACED ALL RESTROOM FIXTURES THROUGHOUT THE BUILDING. THE PIPING SYSTEM IS FUNCTIONAL BUT AGING AND SUBJECT TO PRESSURE PROBLEMS. IT WILL REQUIRE REPLACEMENT WITHIN THE NEXT 5 TO 10 YEARS.

C. COMPONENT RATING: (\$1,516,000) x (77 %) = \$1,167,000
 Possible Condition Component
 Value Value Multiplier Value

MECHANICAL/HEATING

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Heat Source:	N/A	Sat	Att
Central Plant Steam <u>USED IN HEATING HOT WATER CONVERTERS</u>	[]	[X]	[]
Central Plant Hot Water <u>2 - 6" SUPPLY LINES @ TUNNEL</u>	[]	[X]	[]
Boilers: Type _____	[X]	[]	[]
Size _____	[X]	[]	[]
Furnace: Type _____	[X]	[]	[]
Size _____	[X]	[]	[]
Heat Pump: Type _____	[X]	[]	[]
Size _____	[X]	[]	[]

b. System Type:			
Steam _____	[X]	[]	[]
Hot Water _____	[]	[]	[X]
Air <u>HALL & BATH MAKE-UP AIR HEATED</u>	[]	[X]	[]
Multizone _____	[X]	[]	[]
Dual Duct _____	[X]	[]	[]
Terminal Reheat _____	[X]	[]	[]
Variable Volume _____	[X]	[]	[]
Other <u>HOT WATER COIL IN AIR HANDLER FOR MAKE-UP AIR</u>	[]	[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 AGING AND INEFFICIENT BUT REPORTED TO BE FUNCTIONAL. THE ONLY PROVISION FOR VENTILATION TO DORMITORY ROOMS ARE THE WINDOWS AND LOUVERS IN THE DOORS. PORTIONS OF THE BUILDING WERE REPORTED TO BE DIFFICULT TO HEAT THE SYSTEM HAS A TENDENCY TO FILL WITH SEDIMENT.

C. COMPONENT RATING: (\$1,843,000) X (60 %) = \$1,106,000
 Possible Condition Component
 Value Value Multiplier Value

COOLING & VENTILATING

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. System:			
Type <u>BLDG NOT AIR CONDITIONED, EXHAUST SYSTEM ONLY</u>	[X]	[]	[]
Capacity _____	[X]	[]	[]
b. Chillers:			
Centrifugal _____	[X]	[]	[]
Reciprocating _____	[X]	[]	[]
Absorption _____	[X]	[]	[]
c. Cooling Towers:			
Type _____	[X]	[]	[]
Capacity _____	[X]	[]	[]
d. Condensers: _____	[X]	[]	[]
e. Space Equipment:			
Direct Expansion -			
Window units <u>LIMITED USE</u>	[]	[X]	[]
Thru-the-wall _____	[X]	[]	[]
Single zone <u>LIEBERT SYSTEM FOR COMPUTER RESOURCE CNTR</u>	[]	[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 _____	[X]	[]	[]
Multizone _____	[X]	[]	[]
f. Special Systems:			
Type _____	[X]	[]	[]
Capacity _____	[X]	[]	[]
g. Control Systems:			
Pneu _____	[X]	[]	[]
Electric _____	[X]	[]	[]
Electronic _____	[X]	[]	[]
h. Fans:			
Exhaust <u>RESTROOMS AND HALLWAYS ARE EXHAUSTED</u>	[]	[X]	[]
Recirculating <u>AIR HANDLER IN ATTIC FOR MAKE-UP AIR SYSTEM</u>	[]	[X]	[]

B. COMMENTS:

THE RESIDENCE HALL IS NOT AIR CONDITIONED. THE DINING COMMONS WHICH WAS NOT EVALUATED IN THIS AUDIT HAS CENTRAL AIR CONDITIONING. IT SHOULD BE NOTED THAT THE MAJORITY OF THE BUILDING HAS A CLEAR HEIGHT OF LESS THAN 8'6" WHICH WOULD MAKE A CENTRAL AIR CONDITIONING SYSTEM DIFFICULT TO DESIGN AND MAINTAIN SHOULD ONE BE INSTALLED.

C. COMPONENT RATING: (\$184,300) X (84 %) = \$154,800
 Possible Condition Component
 Value Value Multiplier Value

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

(a) Service:

Substation BUCKEYE, FEEDER CIRCUITS - 102/206
Primary Voltage 13,200 VOLTS
Transformer:
Manufacture Type KVA Secondary Voltages
GENERAL ELECTRIC SILICONE 500 208Y/120

(b) Distribution System:

Panelboard (type) CIRCUIT BREAKER
Voltage 208/120
Amperage 2 MAIN DISTRIBUTION PANELS @ 800 AMPS EACH
Conduit GALVANIZED STEEL OR ALUMINUM
Conductor COPPER
Wire (type) VARIES
Armored Cable N/A
Other

(c) Emergency System:

General or (type & capacity) NONE

B. COMMENTS:

PEAK DEMAND READINGS FROM THE PHYSICAL FACILITIES UTILITY DIVISION INDICATE A MAXIMUM UTILIZATION OF APPROXIMATELY 50%.

C. COMPONENT RATING: (\$368,700) x (90 %) = \$331,800
 Possible Condition Component
 Value Value Multiplier Value

ELECTRICAL/LIGHTING & POWER

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

a. Lighting (lamp type):

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Fluor <u>CORRIDORS, PUBLIC AREAS AND BATHROOMS</u>	[]	[X]	[]
Incand <u>RESIDENT ROOMS</u>	[]	[X]	[]
HID <u>EXTERIOR SECURITY LIGHTING</u>	[]	[X]	[]
Other _____	[X]	[]	[]

b. Receptacles & Switches:

Type & Capacity <u>120 VOLT DUPLEX</u>	[]	[]	[X]
--	-----	-----	-----

c. Special:

Baseboard Heat _____	[X]	[]	[]
Lightning Protection _____	[X]	[]	[]
Communication & Alarm <u>TELEPHONE, PAGING AND SECURITY</u>	[]	[X]	[]
Data Systems _____	[X]	[]	[]

B. COMMENTS:

OUTLETS ARE GROUNDED THROUGH THE CONDUIT. ALL PANEL SPACES ARE UTILIZED. SYSTEM IS AT ITS LIMIT.

C. COMPONENT RATING: (\$1,843,000) X (65 %) = \$1,198,000
 Possible Condition Component
 Value Value Multiplier Value

SAFETY STANDARDS

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
(a) Exits:			
Stair Construction:			
concrete _____	[]	[X]	[]
steel _____	[]	[X]	[]
wood _____	[X]	[]	[]
Number of exits <u>11</u>	[]	[X]	[]
(b) Fire Rating:			
Construction Type: I___ II <u>X</u> III___ IV___ V___ VI			
Building Height: <u>64 ft., BASEMENT AND 5 STORIES</u>			
(c) Extinguishing Systems:			
Portable <u>FIRE EXTINGUISHERS AT EACH HOSE CABINET</u>	[]	[X]	[]
Standpipe <u>EACH WING - SUPPLY HOSE CABINETS</u>	[]	[X]	[]
Hose Cabinets <u>EACH FLOOR AND WING</u>	[]	[X]	[]
Sprinklers <u>LOCATED IN TRASH ROOM ONLY</u>	[]	[X]	[]
Suppression _____	[X]	[]	[]
Other _____	[X]	[]	[]
(d) Detection & Alarm Systems:			
Manual Alarm <u>PULL STATIONS AT EXITS</u>	[]	[X]	[]
Annunciator <u>LOCATED AT RESIDENCE HALL DESK</u>	[]	[X]	[]
Smoke Detectors <u>CORRIDORS & DORM ROOMS THROUGHOUT</u>	[]	[X]	[]
(e) Lighting Systems:			
Exit Signs _____	[]	[X]	[]
Exit Lighting _____	[X]	[]	[]
Emergency Lighting <u>STAIR LIGHTING AND EXIT SIGNS</u>	[]	[X]	[]
Emergency Generator _____	[X]	[]	[]

B. COMMENTS:

BOHM-NBBJ FACILITY ASSESSMENT OF MAY 1992, IDENTIFIED THE FOLLOWING SAFETY ISSUES: STAIRS IN D AND H WINGS ARE NOT ENCLOSED IN 2 HR RATED CONSTRUCTION; DORM ROOM DOORS ARE NOT FIRE RATED; DOORS AT STAIRS DO NOT COMPLY WITH CODE (GLASS PANELS ARE TOO LARGE AND DOOR ASSEMBLY DOES NOT HAVE A 1-1/2 HR RATING); STORAGE AREA IN THE ATTIC SHOULD BE SPRINKLERED; FIRE SUPPRESSION SHOULD BE ADDED TO THE RECREATION ROOM. ALL ENTRANCES ARE WELL LIGHTED AS ARE WALKS SURROUNDING THE BUILDING.

C. COMPONENT RATING: (\$512,000) x (63 %) = \$322,600
 Possible Condition Component
 Value Value Multiplier Value

BUILDING PERIMETER EVALUATION

FAC # 095 DATE 4/22/93 INSPECTOR: JPH

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
1. Building Access:			
Driveway <u>ONE FOR EACH OF THE 2 DOCKS AT THE BUILDING</u>	[]	[X]	[]
Loading Dock <u>NORTH SIDE AND SOUTH SIDE OF BUILDING</u>	[]	[X]	[]
Sidewalks			
Front <u>NORTH - ASPHALT REQUIRES ATTENTION</u>	[]	[]	[X]
Side <u>SOME SUNKEN AREAS AND TRIPPING HAZARDS - EAST</u>	[]	[]	[X]
Rear <u>SPALLING BY COMMONS ENTRANCE</u>	[]	[]	[X]
Steps			
Front _____	[]	[X]	[]
Side _____	[]	[X]	[]
Rear _____	[]	[X]	[]
Handicap Ramp <u>EAST AND WEST ENTRANCES ON NORTH SIDE</u>	[]	[X]	[]
2. Lawn and Landscaping:			
Lawn <u>BARE SPOTS</u>	[]	[]	[X]
Shrubs <u>SOME ARE OVERGROWN</u>	[]	[]	[X]
Trees <u>MATURE TREES PREDOMINANTLY ON NORTH SIDE</u>	[]	[X]	[]
Undesirable Insect _____	[X]	[]	[]
Bedding Material _____	[X]	[]	[]
Watering System _____	[X]	[]	[]
3. General Site Information:			
Signage _____	[]	[X]	[]
Address Identification _____	[]	[X]	[]
Security Lights _____	[]	[X]	[]
Street Lights _____	[]	[X]	[]
Drainage _____	[]	[X]	[]
Storm Drains _____	[]	[X]	[]

B. COMMENTS:

MANY OF THE WALKS REQUIRE ATTENTION. THE CURB ALONG 12TH AVENUE REQUIRES REPAIRS IN SEVERAL LOCATIONS. MOST OF THE SHRUBS APPEAR TO BE AT AN AGE WHERE REPLACEMENT IS REQUIRED. SITE LIGHTING APPEARS TO BE ADEQUATE. THE SHRUBS HAVE BEEN TRIMMED OR CLEARED AT BUILDING ENTRANCES AND EXITS.

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

BUILDING AUDIT METHODOLOGY

1. GENERAL

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

2. BUILDING AUDIT PROGRAM OBJECTIVE

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

3. 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.

4. 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.

5. 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.

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

ABBREVIATIONS

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

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