FACILITY AUDIT REPORT
HAMILTON HALL, Bldg 038
DECEMBER 1994

Prepared by:
Augustus J.R. Van Buren
Division of Resource Management
Department of Physical Facilities
The Ohio State University

Table of Contents

EXECUTIVE SUMMARY AND PROJECT LIST FOR
RIGHTMIRE HALL

Hamilton Hall was constructed in 1924 as the Medical Science building. In 1925, a substantial addition was added to the north side of the building. In 1927, another substantial addition was added to the west side of the 1925 addition. Since that time four smaller additions were added in 1938, 1951, 1958 and in 1962. The building has been associated with the medical profession for its entire history. It currently houses the Physiology Department, the Cell Biology Department, the Pathology Department and the Medical Biochemistry Department. The 80-year-old structure has four floors, a basement area and two mechanical penthouses on the roof. A two-phased major renovation in 1988 and in 1990 gave the building a completely new H.V.A.C. system, new plumbing, new electrical and new finishes throughout the building.

As the building has received two major renovations in the last six years, the building and its mechanical components are in very good condition. Finishes are relatively new and in very good condition throughout the building. The only item that needs attention is the acoustical lining in the duct work. The lining has caused a dust problem in several labs and is being investigated by the architect's office for a possible solution.

PROPOSED MAINTENANCE PROJECTS:

A. Corrective Maintenance Projects: **Control #**
No projects identified

B. Building Improvement/Addition Projects:
No projects identified

C. Projected Component Replacement Projects:
No projects identified

Total cost for estimated projects

December 1994

GENERAL BUILDING INFORMATION

RIGHTMIRE HALL #038

BUILDING ADDRESS: 1645 NEIL AVE.

GROSS SQ. FT.: 133,451

NET ASSIGNABLE SQ. FT.: 102,233

MECHANICAL/CUSTODIAL AREA SQ. FT.: 24,945

YEAR OF CONSTRUCTION: 1924

YEAR OF LAST RENOVATION: 1990

NUMBER OF STORIES/BASEMENT: FOUR STORIES, BASEMENT & MECHANICAL PENTHOUSE

AIR CONDITIONING (Percentage): 85%

CURRENT USE: LAB & OFFICE SPACE FOR THE MED SCIENCE DEPARTMENTS

TYPE OF CONSTRUCTION: CAST-IN-PLACE CONCRETE WITH MASONRY VENEER

ESTIMATED REPLACEMENT COST: $24,721,000 *

WHEELCHAIR ACCESSIBILITY: THE FRONT ENTRANCE ON THE EAST SIDE IS EQUIPPED WITH AN AUTOMATIC DOOR OPENER. A RAMP LEADS FROM THE SIDE WALK TO THE FRONT ENTRANCE. ALL FLOORS ARE ACCESSIBLE BY ELEVATOR.

OVERALL BUILDING CONDITION: SATISFACTORY**

NUMBER OF EXIT STAIRWAYS: 3

* Replacement Cost assigned November, 1991 by The Office of Campus Planning and Space Utilization.

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

BUILDING SYSTEMS INFORMATION

HEATING:
Source STEAM FROM THE POWER PLANT
Type Heating System HOT WATER
Steam (Line size, valve location) 2" AT THE TUNNEL, COND. RETURN AT TUN.
Building Htg Water (line size, valve location) 6" FROM CONVERTER IN RM O35

VENTILATION SYSTEM: VARIABLE AIR VOLUME, CONSTANT VOLUME, TERMINAL REHEATS

COOLING:
Bldg % 85% Chillers TWO 400 TON CENTRIFUGAL TRANE UNITS, 1989
Window Units NONE Thru-the-wall NONE Direct exp. units NONE

HVAC CONTROL SYSTEM: DIRECT DIGITAL CONTROL

ELECTRIC:

	Source	Size(KVA)	Primary/Secondary	Switchgear & Main Disc. (Rm)
1.	BUCKEYE 102/206	2000	13,200/(480/277)	RM OO1
2.	BUCKEYE 102/206	1000	13,200/(208/120)	RM O35

PLUMBING:
Water (size, valve location) 6" AT THE TUNNEL
Gas (size, valve location) 1" AT THE TUNNEL
Domestic Hot Water (size, valve location) 1 1/2" FROM CONV. IN RM O35
Compressed Air (size, location) 1" LOCAL COMPRESSOR IN RM 035

SEWERS: Storm 8" NORTH, 6" WEST Sanitary 8" NO.,8" E.,15"N/W

METERS:
Gas (size, location) 1" AT THE TUNNEL
Water (size, location) 6" AT THE TUNNEL
Electric (size, location) RM OO1 2000 KVA, RM 035 1000KVA

ALARM SYSTEMS:
Fire Alarm YES Panel Location RM O01
Fire Pump NO Pump Location N/A
Sprinklers LIMITED Panel Location N/A
Other Alarms SMOKE DETECTORS IN AIR HANDLERS AND AT THE ELEVATORS

ELEVATORS:
Number 3 Type (passenger, freight) 2-PASSENGER, 1-FREIGHT
Manufacturer 2-OTIS & 1 DOVER Size 88"X 60", 68"X 62", 94"X 64"

EMERGENCY GENERATOR: Size 625 KVA Location RM 001A

KEY BOX LOCATION: AT EAST ENTRANCE

ASBESTOS SURVEY (1986):
THE BUILDING WAS RENOVATED AFTER THE PEI SURVEY AND MOST OF THE ASBESTOS WAS REMOVED FROM THE BUILDING. SOME ASBESTOS REMAINS IN THE PIPI CHASES.

RIGHTMIRE HALL BUILDING NARRATIVE

HISTORY

Hamilton Hall construction was completed in 1924. It was built to house the Medical Science facilities associated with the University Hospital. In 1989 and in 1990 Phase 1 and Phase 2 completed major renovations to the building in order to accommodate the Departments of Physiology, Cell Biology, Pathology and Medical Biochemistry. The building consists mainly of lab space, including a morgue, with limited classroom facilities.

Facility use by category is: 60% laboratories and related uses, 16% office and related uses and 24% mechanical/custodial/ toilet uses.

PRIMARY SYSTEMS

The structure is supported by continuous concrete footers at the perimeter and individual concrete footings and piers under the steel and concrete columns used throughout the building. The floors and the roof structure are also composed of reinforced cast-in-place concrete except the pitched roof section that is supported by a wooden deck. The exterior walls consist of structural tiles with a brick veneer. There are no indications of structural problems at this time.

The building is covered with a single-ply elastomer roofing material except the pitched roof section on the north side of the building that has a slate covering. The roof is in good condition as the slate roof was repaired when the elastomer roof was installed in 1989.

The exterior consists of brick veneer and is in good condition. The building has fixed glass double-glazed windows throughout. The total exterior glass area is less than 3% of the surface area. There have been no problems reported with windows or the exterior doors.

SECONDARY SYSTEMS

Interior partition walls are predominantly composed of metal stud and drywall. Surface finishes are generally in good condition and consist of paint and vinyl wall covering in the corridors and the stairwells. The restroom walls are also covered with a vinyl wall treatment.

The primary floor covering in the building is vinyl tile with carpeting in a few private offices. The lab areas have a resilient vinyl floor cover. The floors are in good condition.

The ceilings are predominantly suspended acoustical tile and, because of the recent renovations, are in good condition.

SERVICE SYSTEMS

Hamilton Hall is equipped with two passenger elevators and one freight elevator. Because of the recent renovation, the elevators meet ADA requirements.

Most of the building is heated by perimeter radiant heating panels. Heat in the mechanical rooms and at the entrances is provided by unit heaters. The building is cooled by a variable air air volume system as well as a constant volume system, with cooling capacity supplied by two 400-ton chillers. Cooling capacity is supported by

two 400-ton cooling towers.

Because of the numerous lab activities in the building, the five air handlers supply 100% outside air. A dedicated emergency generator can provide power for the emergency lighting.

Heating hot water for the building is provided by a steam converter located in the mechanical room at the tunnel. The heating and the cooling systems were replaced during the 1989/90 renovation.

ELECTRICITY

Power is supplied by two transformers. The primary voltage for these transformers is 13,200 Volts. One transformer has a capacity of 2000 KVA and one has 1000 KVA capacity. The transformers have secondary voltages of 480/277 and 208/120. Utility Division utilization records indicate that the 2000 KVA transformer is utilized at 45% and the 1000 KVA transformer is 49% utilized. There appears to be adequate supply of electric power available to the building.

The building lighting system is predominantly 2-tube fluorescent fixtures which are clean and in good condition throughout. There is an adequate distribution of convenience outlets in the building and adequate supply of power.

SAFETY STANDARDS

The building is equipped with portable fire extinguishers and standpipes with valves located in the stairwells. There are sprinklers in limited areas on the first floor. Smoke detectors are located in the HVAC ductwork and at the elevators. The building has lighted exit signs and has an emergency lighting system in the stairwells. There is one diesel fueled emergency generator to provide power in case of an emergency.

The main entrance at the east side of the building is equipped with an electric opener for the handicapped. All floors are handicapped accessible from the elevators.

The building has various local security systems to prevent unauthorized access to some laboratory areas.

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, identified asbestos containing materials in pipe insulation in rooms in basement, first, second third and fourth floors.Most of the asbestos has been removed during recent renovations; however, some asbestos remains in the pipe chases.

BUILDING PERIMETER

The sidewalk on the east side of the building has a strip of sunken asphalt about a foot wide along the entire length of the walkway next to Niel Ave. The north walkway is asphalt covered and needs to be patched in places. The concrete walk at the north/east entrance has cracks that need to be repaired. There is some cracked

concrete at the base of the north/west steps. Some shrubs have sunk into settled soil around the building and need to be replanted. The entrances and approaches to the building are well lighted and secure.

MAINTENANCE PROJECTS (LESS THAN $5000)

1. Resurface the asphalt sidewalks on the north of the building.
2. Replant some bushes on the east and north side of the building.
3. Repair the concrete steps and walk at the north/east entrance to the building.
4. Repair concrete at the base of the north/east entrance.

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 038 FACILITY NAME: HAMILTON HALL
DATE: 12/30/94 INSPECTOR: AJR
YEAR CONSTRUCTED: 1924,RENOVATED IN 1989 & 1990
GROSS SQ FT: 133,451 NET SQ FT: 102,233
REPLACEMENT COST $ 24,721,000 *

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	3.0	741,630	.82	608,137
Columns and Beams	10.9	2,694,589	.84	2,263,455
Exterior Walls	6.3	1,557,423	.90	1,401,681
Windows & Doors	1.8	444,978	.96	427,179
Roofing	1.9	469,699	.88	413,335
Partitions & Drs	5.2	1,285,492	.96	1,234,072
Wall Finishes	2.4	593,304	.87	516,174
Floor Finishes	5.2	1,285,492	.96	1,234,072
Ceilings & Finish	5.4	1,334,934	.94	1,254,838
Conveying	1.3	321,373	.94	302,091
Plumbing	17.1	4,227,291	.96	4,058,199
Heating	6.6	1,631,586	.95	1,550,007
Cooling & Vent.	13.1	3,238,451	.93	3,011,759
Elec. Ser. & Dist	2.6	642,746	.95	610,609
Lighting & Power	16.0	3,955,360	.94	3,718,038
Safety Standards	1.2	296,652	.92	272,920
TOTALS	100.00	24,721,000		22,876,566

III. BUILDING RATING SUMMARY

Overall Building Rating = 92.5%

* 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 # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Footings:	N/A	Sat	Att
Individual Footings & Piers UNDER COLUMNS	[ ]	[X]	[ ]
Continuous Footings UNDER PERIMETER WALLS	[ ]	[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 BELOW GRADE	[ ]	[X]	[ ]
Board	[X]	[ ]	[ ]
Drain Tile 4" PERIMETER TILE	[ ]	[X]	[ ]
d. Slab on Grade (floor):			
Plain	[X]	[ ]	[ ]
Reinforced SLAB ON GRADE	[ ]	[X]	[ ]
e. Special Substructures:			
	[X]	[ ]	[ ]

B. COMMENTS:

NO PROBLEMS WERE OBSERVED OR REPORTED.

C. COMPONENT RATING: ($1,260,800) (82 %) = $1,033,800

Possible Value	Condition Value	Multiplier	Component Value

COLUMNS AND BEAMS

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Columns and Beams:	N/A	Sat	Att
Concrete-in-place PREDOMINANTLY THROUGHOUT	[ ]	[X]	[ ]
Precast Concrete	[X]	[ ]	[ ]
Steel PENTHOUSE AREAS	[ ]	[X]	[ ]
Steel Fireproofing	[ ]	[X]	[ ]
Wood	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
b. Floors:			
Concrete Slab	[ ]	[X]	[ ]
Precast Slab	[X]	[ ]	[ ]
Metal Deck	[X]	[ ]	[ ]
Metal Deck w/concrete fill	[X]	[ ]	[ ]
Wood	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Roof System:			
Flat	[ ]	[X]	[ ]
Pitched NORTH PART	[ ]	[X]	[ ]
Concrete DECK	[ ]	[X]	[ ]
Steel BEAMS TO SUPPORT WOOD DECK	[ ]	[X]	[ ]
Wood DECK UNDER THE PITCHED SECTION	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

NO PROBLEMS WERE OBSERVED OR REPORTED

C. COMPONENT RATING: ($2,793,500) (84 %) = $ 2,346,500

Possible Value	Condition Value	Multiplier	Component Value

EXTERIOR WALLS

FAC # 308 DATE 4/15/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Walls:	N/A	Sat	Att
Concrete	[X]	[ ]	[ ]
Masonry STRUCTURAL TILES WITH BRICK VENEER	[ ]	[X]	[ ]
Metal Siding	[X]	[ ]	[ ]
Wood Siding	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

b. Finishes:			
Stucco	[X]	[ ]	[ ]
Paint	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

THE WALLS WERE SAND BLASTED, TUCKED AND SEALED DURING THE RECENT RENOVATION. THE WALLS ARE IN GOOD CONDITION.

C. COMPONENT RATING: ($1,038,300) (90 %) = $ 934,500

Possible Value	Condition Value	Multiplier	Component Value

EXTERIOR WINDOWS & DOORS

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Windows type & number:	N/A	Sat	Att
Wood	[X]	[ ]	[ ]
Steel	[X]	[ ]	[ ]
Alum 782 FIXED, DOUBLE-GLAZED	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
b. Window glazing:			
Single pane	[X]	[ ]	[ ]
Double pane	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
c. Doors type & number:			
Wood 5 SETS OF WOODEN DOORS AT THE ENTRANCES	[ ]	[X]	[ ]
Steel 5 SINGLE UNITS, 1 ROLL-UP DOCK DOOR	[ ]	[X]	[ ]
Alum	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
d. Shading Devices:			
Types VENETIAN BLINDS	[ ]	[X]	[ ]

B. COMMENTS:

WINDOWS AND DOORS ARE ALL IN GOOD CONDITION.

C. COMPONENT RATING: ($ 815,800) (94 %) = $ 766,800

Possible Value	Condition Value	Multiplier	Component Value

ROOFING

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Roof Covering:	N/A	Sat	Att
Built-up	[X]	[ ]	[ ]
Built-up w/gravel	[X]	[ ]	[ ]
Asphalt Shingle OVER WEST DOOR CANOPY	[ ]	[X]	[ ]
Copper	[X]	[ ]	[ ]
Glass (Skylight)	[X]	[ ]	[ ]
Slate OVER NORTH SECTION, APPROXIMATELY 5600 SQ.FT.	[ ]	[X]	[ ]
Spanish Tile	[X]	[ ]	[ ]
Metal	[X]	[ ]	[ ]
Other SINGLE-PLY ELASTOMER COVERED WITH GRAVEL, 22,100SF	[ ]	[X]	[ ]
c. Flashing:			
Base & Counter METAL COUNTER FLASHING	[ ]	[X]	[ ]
Cap CONCRETE COPING ON THE PARAPET	[ ]	[X]	[ ]
Through Wall	[X]	[ ]	[ ]
Valley & Ridge	[X]	[ ]	[ ]
d. Gravel Stop & Edge Strips:			
Type	[X]	[ ]	[ ]
e. Drainage:			
Gutters w/ Exterior Downspouts AT THE PENTHOUSES	[ ]	[X]	[ ]
Scuppers w/ Exterior Downspouts AT LOWER WEST ROOF	[ ]	[X]	[ ]
Drains w/ Interior Storm Drains PREDOMINANTLY	[ ]	[X]	[ ]
f. Parapets:			
Concrete	[X]	[ ]	[ ]
Brick	[ ]	[X]	[ ]
Block	[X]	[ ]	[ ]
Precast	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
g. Insulation:			
Type 1" RIGID INSULATING	[ ]	[X]	[ ]

B. COMMENTS

THE ROOF WAS REPLACED IN 1989 WITH A SINGLE-PLY ELASTOMER EXCEPT ON THE NORTH SECTION OF THE ROOF WHERE SLATE TILES WERE REPLACED AS NEEDED. OVERALL THE ROOF IS IN GOOD CONDITION.

C. COMPONENT RATING: ($1,087,700) (88 %) = $ 957,200

Possible Value	Condition Value	Multiplier	Component Value

PARTITIONS & DOORS

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Partition Framing:			
Concrete Block BASEMENT AREA	[ ]	[X]	[ ]
Glazed Block	[X]	[ ]	[ ]
Wood Stud	[X]	[ ]	[ ]
Metal Stud	[ ]	[X]	[ ]
Structural Tile	[X]	[ ]	[ ]
Rated	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
b. Special partitions and Walls:			
Toilet METAL	[ ]	[X]	[ ]
Screen Walls	[X]	[ ]	[ ]
Gate	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Wall Material:			
Plaster	[X]	[ ]	[ ]
Plaster Board	[ ]	[X]	[ ]
Glass IN THE ADMINISTRATIVE AREA	[ ]	[X]	[ ]
Plywood	[X]	[ ]	[ ]
Paneling AT THE MAIN ENTRANCE	[ ]	[X]	[ ]
Trim & Wainscot	[X]	[ ]	[ ]
Tile/Glazed IN RESTROOMS	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
d. Interior Doors & Frames:			
Met Door/Met Frame MECHANICAL ROOMS	[ ]	[X]	[ ]
Wood Door/Wood Frame	[X]	[ ]	[ ]
Wood Door/Metal Frame USED THROUGHOUT BUILDING	[ ]	[X]	[ ]
Glazing COLD ROOMS ONLY	[ ]	[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 VARIOUS LABS AND OFFICES	[ ]	[X]	[ ]
Automatic Openers HANDICAPPED ACCESS AT FRONT ENTRANCE	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

MAJOR RENOVATIONS OVER THE LAST IN 1989 AND 1990 MOST OF THE DOORS AND SOME OF THE PARTITIONS.

C. COMPONENT RATING: (2,051,800) (94 %) = $1,928,700

Possible Value	Condition Value	Multiplier	Component Value

WALL FINISHES

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION	N/A	Sat	Att
a. Paint	[ ]	[X]	[ ]
b. Wall Coating	[X]	[ ]	[ ]
c. Wall Coverings IN THE CORRIDORS AND STAIRWELLS	[ ]	[X]	[ ]
d. Paneling			
Prefinished AT THE MAIN ENTRANCE	[ ]	[X]	[ ]
Plank	[X]	[ ]	[ ]
e. Cork	[X]	[ ]	[ ]
f. Wallpaper	[X]	[ ]	[ ]
g. Ceramic Tile IN RESTROOMS	[X]	[ ]	[ ]
h. Trim & Wainscot	[X]	[ ]	[ ]
i. Decoration	[X]	[ ]	[ ]
j. Glass	[X]	[ ]	[ ]
k. Other	[X]	[ ]	[ ]

B. COMMENTS

BECAUSE OF RECENT RENOVATIONS, THE WALL FINISHES ARE IN GOOD CONDITION.

C. COMPONENT RATING: ($ 889,900) (85 %) = $ 756,500

Possible Value	Condition Value	Multiplier	Component Value

FLOOR FINISHES

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Carpet:			
Rolled IN PRIVATE OFFICES	[ ]	[X]	[ ]
Tile	[X]	[ ]	[ ]
b. Composition:			
Epoxy	[X]	[ ]	[ ]
Synthetic	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Concrete Topping:			
Clear Sealant IN MECHANICAL ROOMS	[ ]	[X]	[ ]
Abrasive	[X]	[ ]	[ ]
Epoxy	[X]	[ ]	[ ]
Aggregate	[X]	[ ]	[ ]
d. Resilient:			
Vinyl Tile THROUGHOUT THE BUILDING	[ ]	[X]	[ ]
Linoleum	[X]	[ ]	[ ]
Vinyl RESILIENT FLOORING IN THE LABS	[ ]	[X]	[ ]
Rubber STAIRWAY LANDING TREADS	[ ]	[X]	[ ]
Cork	[X]	[ ]	[ ]
e. Ceramic Tile IN RESTROOM AREAS	[ ]	[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: ($1,334,900) (94 %) = $1,254,800

Possible Value	Condition Value	Multiplier	Component Value

CEILINGS AND FINISHES

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. System Type:	N/A	Sat	Att
Exposed IN MECHANICAL ROOMS AND PENTHOUSES	[ ]	[X]	[ ]
Applied to Structure	[X]	[ ]	[ ]
Suspended MINERAL FIBER	[ ]	[X]	[ ]
b. Materials:			
Drywall	[X]	[ ]	[ ]
Plaster	[X]	[ ]	[ ]
Mineral Fiber Board THROUGHOUT MOST OF THE BUILDING	[ ]	[X]	[ ]
Metal Pan	[X]	[ ]	[ ]
Luminous Panels	[X]	[ ]	[ ]
Other	[X]	[ ]	[ ]
c. Finishes:			
Paint IN MECHANICAL ROOMS	[ ]	[X]	[ ]
Fabric	[X]	[ ]	[ ]
Prefinished SUSPENDED CEILING	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
d. Openings & Inserts:			
Air Distribution	[ ]	[X]	[ ]
Lighting Fixtures	[ ]	[X]	[ ]
Access Panels	[ ]	[X]	[ ]
Skylights	[X]	[ ]	[ ]
Fire Protection	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

B. COMMENTS:

THE CEILINGS AND FINISHES ARE IN GOOD CONDITION.

C. COMPONENT RATING: ($1,409,100) (92 %) = $1,296,400

Possible Value	Condition Value	Multiplier	Component Value

CONVEYING

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Elevators:			
Number THREE	[ ]	[X]	[ ]
Type 2 PASSENGER-OTIS, 1 FREIGHT-DOVER	[ ]	[X]	[ ]
Speed 200 FOR PASS. AND 75 FOR FREIGHT	[ ]	[X]	[ ]
Capacity (lbs) 4,000 AND 2,500 FOR PASS.,4,000 FREIGHT	[ ]	[X]	[ ]
Dimensions 88"X 60" AND 68"X 62" PASS. 94"X 64" FR.	[ ]	[X]	[ ]
Door Operation:			
Center	[X]	[ ]	[ ]
To Side	[ ]	[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 ELEVATORS ARE IN GOOD CONDITION.

C. COMPONENT RATING: ($ 716,900) (92 %) = $ 659,600

Possible Value	Condition Value	Multiplier	Component Value

MECHANICAL/PLUMBING

FAC # 038 DATE 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Services Available:	N/A	Sat	Att
Cold Water 6" AT THE TUNNEL	[ ]	[X]	[ ]
Hot Water FROM STEAM CONVERTER	[ ]	[X]	[ ]
Acid Waste NEUTRALIZING TANKS LOCATED ON NORTH SIDE	[ ]	[X]	[ ]
Oxygen	[X]	[ ]	[ ]
Natural Gas 2" AT THE TUNNEL	[ ]	[X]	[ ]
Vacuum CENTRAL SYSTEM LOCATED IN THE BASEMENT	[ ]	[X]	[ ]
Distilled Water LOCATED IN THE PENTHOUSE MECH. RM.	[ ]	[X]	[ ]
Compressed Air LOCAL COMPRESSOR IN RM. 035M	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
b. Piping & Fittings:			
Cast Iron WASTE AND VENTS	[ ]	[X]	[ ]
Copper Tubing DOMESTIC HOT WATER AND COMPRESSED AIR	[ ]	[X]	[ ]
Plastic	[X]	[ ]	[ ]
Steel HEATING HOT WATER & CHILLED WATER, STAND PIPES	[ ]	[X]	[ ]
Glass 4" ACID WASTE LINE AND VENTS	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
c. Water Heaters:			
Electric	[X]	[ ]	[ ]
Gas	[X]	[ ]	[ ]
Oil	[X]	[ ]	[ ]
Steam Converter LOCATED IN RM. 035M	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
d. Drainage:			
Storm Drains 8" & 6"	[ ]	[X]	[ ]
Sanitary Drainage 8" & 15"	[ ]	[X]	[ ]
Combined Storm/San.	[X]	[ ]	[ ]
Floor Drains THROUGHOUT IN LABS	[ ]	[X]	[ ]
e. Fixtures:			
Water Closets 30	[ ]	[X]	[ ]
Urinals 16	[ ]	[X]	[ ]
Lavatories 26	[ ]	[X]	[ ]
Showers EMERGENCY SHOWERS AND EYE BATHS IN CORRIDORS	[ ]	[X]	[ ]
Kitchen Sinks 1	[ ]	[X]	[ ]
Service Sinks 10	[ ]	[X]	[ ]
Drinking Fountains	[X]	[ ]	[ ]
Electric Water Coolers 10	[ ]	[X]	[ ]
f. Sprinkler Systems:			
Wet	[ ]	[X]	[ ]
Dry	[X]	[ ]	[ ]
g. Standpipe Systems:			
Wet FOR HOSE CABINETS IN STAIRWELLS	[ ]	[X]	[ ]
Dry	[X]	[ ]	[ ]
Valves 10	[ ]	[X]	[ ]
Hose Cabinets NO HOSES	[ ]	[X]	[ ]

B. COMMENTS:

THE PLUMBING SYSTEM IS VERY EXTENSIVE TO SUPPORT THE LABS IN THE BLDG. A TYPICAL WORK STATION HAS AVAILABLE WATER, GAS, VACUUM AND WATER FROM A REVERSE OSMOSIS SYSTEM.

C. COMPONENT RATING: ($4,425,100) (94 %) = $ 4,159,600

Possible Value	Condition Value	Multiplier	Component Value

MECHANICAL/HEATING

FAC # 038 DATE: 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Heat Source:	N/A	Sat	Att
Central Plant Steam 2" HIGH PRESS. & COND.RT. AT TUNNEL	[ ]	[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	[X]	[ ]	[ ]
Dual Duct	[X]	[ ]	[ ]
Terminal Reheat LIMITED USE	[ ]	[X]	[ ]
Variable Volume ON 3 OF THE 5 AIR HANDLERS	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

c. Space Equipment:			
Radiators RADIANT PANELS AT THE EXTERIOR WINDOWS	[ ]	[X]	[ ]
Convectors	[X]	[ ]	[ ]
2-Pipe Fan Coil	[X]	[ ]	[ ]
Unit Heaters AT ENTRANCES AND IN THE PENTHOUSES	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]

d. Control Type:			
Pneu ACTUATORS	[ ]	[X]	[ ]
Electric UNIT HEATERS	[ ]	[X]	[ ]
DDC	[ ]	[X]	[ ]
Manual Valves	[X]	[ ]	[ ]

B. COMMENTS:

THE BUILDING HEATING WATER IS PROVIDED BY THE STEAM CONVERTOR LOCATED IN THE MECHANICAL LOCATED AT THE TUNNEL.

C. COMPONENT RATING: ($1,705,700) (93 %) = $1,586,300

Possible Value	Condition Value	Multiplier	Component Value

COOLING & VENTILATING

FAC # 038 DATE: 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. System:			
Type VARIABLE AIR VOLUME	[ ]	[X]	[ ]
Capacity 800 TON	[ ]	[X]	[ ]
b. Chillers:			
Centrifugal TWO 400 TON TRANE UNITS, INSTALLED IN 1989	[ ]	[X]	[ ]
Reciprocating	[X]	[ ]	[ ]
Scroll compressors	[X]	[ ]	[ ]
c. Cooling Towers:			
Type TWO MARLEY UNITS	[ ]	[X]	[ ]
Capacity 800 TONS	[ ]	[X]	[ ]
d. Condensers:	[X]	[ ]	[ ]
e. Space Equipment:			
Direct Expansion -			
Window units	[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	[X]	[ ]	[ ]
Multizone	[X]	[ ]	[ ]
f. Special Systems:			
Type	[X]	[ ]	[ ]
Capacity	[X]	[ ]	[ ]
g. Control Systems:			
Pneu ACTUATORS	[ ]	[X]	[ ]
Electric	[X]	[ ]	[ ]
Electronic DDC	[ ]	[X]	[ ]
h. Fans:			
Exhaust 43 EXHAUST FANS	[ ]	[X]	[ ]
Recirculating 5 AIR HANDLERS	[ ]	[X]	[ ]

B. COMMENTS:

DIRECT DIGITAL CONTROL WAS INSTALLED AT THE TIME OF THE RENOVATION. TWO 400 TON TRANE UNITS PROVIDE ADEQUATE COOLING CAPACITY FOR THE BUILDING AND 100% MAKE UP AIR TO THE LABS.

C. COMPONENT RATING: ($1,952,900) (91 %) = $ 1,777,200

Possible Value	Condition Value	Multiplier	Component Value

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 038 DATE: 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

(a) Service:

Substation BUCKEYE
Primary Voltage 13,200 VOLTS
Transformer:

Manufacture	Type	KVA	Secondary Voltages
WESTING HOUSE	OIL	2000	480/277
GENERAL ELEC.	DRY	1000	208/120

(b) Distribution System:

Panelboard (type) CIRCUIT BREAKERS
Voltage 480/277 AND 208/120 DISTRIBUTION SYSTEM
Amperage APPROXIMATELY 3,400
Conduit STEEL AND ALUMINUM
Conductor COPPER
Wire (type) VARIES
Armored Cable LIMITED USE
Other N/A

(c) Emergency System:

General or (type & capacity) KOHLER, DEISIL, 625 KVA

B. COMMENTS:

THERE ARE TWO TRANSFORMERS THAT SERVICE HAMILTON HALL. THE SERVICE AVAILABLE IS ADEQUATE FOR THE DEMANDS OF THE BUILDING OCCUPANTS. THE PEAK DEMAND READINGS INDICATES THAT UTILIZATION IS APPROXIMATELY 32% OF CAPACITY.

C. COMPONENT RATING: ($ 222,500) (95 %) = $ 211,400

Possible Value	Condition Value	Multiplier	Component Value

ELECTRICAL/LIGHTING & POWER

FAC # 038 DATE:12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

a. Lighting (lamp type):	N/A	Sat	Att
Fluor PREDOMINANT 2 TUBE FIXTURES	[ ]	[X]	[ ]
Incand	[X]	[ ]	[ ]
HID EXTERIOR LIGHTS	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
b. Receptacles & Switches:			
Type & Capacity GROUNDED DUPLEX, 120 VOLT	[ ]	[X]	[ ]
c. Special:			
Baseboard Heat	[X]	[ ]	[ ]
Lightning Protection	[ ]	[X]	[ ]
Communication & Alarm SOME LABS HAVE ACCESS CONTROL	[ ]	[X]	[ ]
Data Systems EXTENSIVE LAN SYSTEM	[ ]	[X]	[ ]

B. COMMENTS:

THERE IS AMPLE CAPACITY TO SUPPLY THE DEMANDS OF THE LABS THROUGHOUT THE BUILDING.

C. COMPONENT RATING: ($2,002,400) (92 %) = $1,842,200

Possible Value	Condition Value	Multiplier	Component Value

SAFETY STANDARDS

FAC # 038 DATE:12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
(a) Exits:			
Stair Construction:			
concrete	[X]	[ ]	[ ]
steel WITH PREMOLDED TREAD	[ ]	[X]	[ ]
wood	[X]	[ ]	[ ]
Number of exits 7	[ ]	[X]	[ ]
(b) Fire Rating:			
Construction Type: I X II III IV V VI			
Building Height: 80 ft., 4 & BASEMENT stories			
(c) Extinguishing Systems:			
Portable CO2	[ ]	[X]	[ ]
Standpipe 4" WITH VALVES IN STAIRWELLS	[ ]	[X]	[ ]
Hose Cabinets NO HOSES	[ ]	[X]	[ ]
Sprinklers LIMITED USE	[ ]	[X]	[ ]
Suppression HALON IN RM 001	[ ]	[X]	[ ]
Other	[X]	[ ]	[ ]
(d) Detection & Alarm Systems:			
Manual Alarm	[ ]	[X]	[ ]
Annunciator IN RM 001	[ ]	[X]	[ ]
Smoke Detectors IN AIR HANDLERS, AT ELEVATORS	[ ]	[X]	[ ]
(e) Lighting Systems:			
Exit Signs	[ ]	[X]	[ ]
Exit Lighting SIGNS ARE LIGHTED	[ ]	[X]	[ ]
Emergency Lighting IN HALLWAYS AND STAIRS	[ ]	[X]	[ ]
Emergency Generator ONE DIESEL FUELED	[ ]	[X]	[ ]

B. COMMENTS:

THERE IS LARGE EMERGENCY GENERATOR LOCATED IN ROOM 001 TO PROVIDE BACK-UP ELECTRIC POWER.

C. COMPONENT RATING: ($1,013,600) (90 %) = $912,200

Possible Value	Condition Value	Multiplier	Component Value

BUILDING PERIMETER EVALUATION

FAC # 038 DATE: 12/30/94 INSPECTOR: AJR

A. SYSTEM DESCRIPTION

1. Building Access:	N/A	Sat	Att
Driveway ON WEST SIDE OF THE BUILDING	[ ]	[X]	[ ]
Loading Dock	[ ]	[X]	[ ]
Sidewalks			
Front CRACKED ALONG CURB AT NEIL AVE.	[ ]	[ ]	[X]
Side NORTH HAS CRACKS AND UNEVEN SPOTS	[ ]	[ ]	[X]
Rear	[ ]	[X]	[X]
Steps			
Front NORTH ENTRANCE HAS CRACKED CONCRETE	[ ]	[ ]	[X]
Side	[ ]	[X]	[ ]
Rear CRACKED CONCRETE AT BASE OF STEPS	[ ]	[ ]	[X]
Handicap Ramp AT EAST FRONT ENTRANCE	[ ]	[X]	[ ]
2. Lawn and Landscaping:			
Lawn	[ ]	[X]	[ ]
Shrubs ON NORTH AND EAST SIDE NEED TO BE REPLANTED	[ ]	[ ]	[X]
Trees	[ ]	[X]	[ ]
Undesirable Insect	[X]	[ ]	[ ]
Bedding Material NEEDS NEW MATERIAL	[ ]	[ ]	[X]
Watering System	[ ]	[X]	[ ]
3. General Site Information:			
Signage	[ ]	[X]	[ ]
Address Identification ON NORTH AND EAST SIDE	[ ]	[X]	[ ]
Security Lights	[ ]	[X]	[ ]
Street Lights	[ ]	[X]	[ ]
Drainage	[ ]	[X]	[ ]
Storm Drains	[ ]	[X]	[ ]

B. COMMENTS:

SETTLING OF SOIL NEXT TO THE BUILDING WILL REQUIRE SOME SHRUBS TO BE REPLANTED. THE ASPHALT WALK ON THE NORTH SIDE HAS CRACKS AND UNEVEN SURFACES THAT SHOULD BE RESURFACED.

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