

FACILITY AUDIT REPORT
CAMPBELL HALL
#018

OCTOBER 12, 1992

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Division of Resource Management
Department of Physical Facilities
The Ohio State University

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GENERAL BUILDING INFORMATION

CAMPBELL HALL #018

BUILDING ADDRESS: 1787 Neil Avenue

GROSS SQ. FT.: 92,562

NET ASSIGNABLE SQ. FT.: 58,212

MECHANICAL/CUSTODIAL AREA SQ. FT.: 9,901

YEAR OF CONSTRUCTION: 1916

YEAR OF LAST RENOVATION: 1962 Addition

NUMBER OF STORIES/BASEMENT: 3 floors plus basement under the west wing

AIR CONDITIONING (Percentage): 90 %

CURRENT USE: Offices and Laboratories for the College of Human Ecology

TYPE OF CONSTRUCTION: Reinforced concrete frame, masonry skin

ESTIMATED REPLACEMENT COST: \$12,496,000

BUILDING APPEARANCE: Brick & cut stone exterior with early 20th century interior that has been redecorated & modernized in some areas.

HANDICAPPED ACCESSIBILITY: Wheelchair access ramp is located at the south entrance door. Entrance door is narrow and elevator is located at the southwest corner of the building.

OVERALL BUILDING CONDITION: Functionally satisfactory

NUMBER OF EXIT STAIRWAYS: four (4)

* Replacement Cost assigned September 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

CAMPBELL HALL #018

HEATING: Source POWER PLANT

Type Heating System HOT WATER

Steam (Line size, valve location) 2 1/2" SS, 1 1/2", RM #66

Building Htg Water (line size, valve location) 4" HWS, 4"HWR,

VENTILATION SYSTEM:

1-DUAL DUCT HIGH VELOCITY, 1-MULTIZONE SYSTEM, 1-REHEAT SYSTEM, 1-FAN COIL

COOLING: 123 TON CENTRIFUGAL (WEST), YORK (1962)

Bldg % 90 % Chillers 134 TON CENTRIFUGAL (EAST), YORK (1962)

Window Units NONE Thru-the-wall NONE Direct exp. units 4 UNITS

HVAC CONTROL SYSTEM:

DIRECT DIGITAL CONTROLS FOR AIR HANDLERS, DAMPERS, AND CHILLERS

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

1. CIRCUIT # 102/206 250 13,200/ 120/240 VOLTS TUNNEL FROM RM 066M

(THERE ARE SIX (6) TRANSFORMERS, EACH WITH 250 KVA CAPACITY)

PLUMBING:

Water (size, valve location) 4", RM #66

Gas (size, valve location) 2 1/2", RM #66

Domestic Hot Water (size, valve location) 2" DHWS, 1" DHWR, RM #66

Compressed Air (size, location) 1" AIR IN TUNNEL, & COMPRESSOR RM #66M

SEWERS: Storm 1 @ 8" Sanitary NONE Combination 1 @ 4", 1 @ 6", 1 @ 8"

METERS:

Gas (size, location) NONE

Water (size, location) NONE

Electric (size, location) LOCATED WITH TRANSFORMERS IN TUNNEL @ RM 066

ALARM SYSTEMS:

Fire Alarm YES Panel Location RM #066

Fire Pump NO Pump Location N/A

Sprinklers NO Panel Location N/A

Other Alarms NONE

ELEVATORS:

Number ONE Type (passenger, freight) PASSENGER

Manufacturer OTIS Size 4000 LBS., 75 FPM

EMERGENCY GENERATOR:

Size NONE Location

KEY BOX LOCATION: EAST CENTRAL DOORS, NEIL AVENUE ENTRANCE

ASBESTOS SURVEY (1986):

SOME LABORATORY WALL PARTITIONS APPEAR TO BE CONSTRUCTED WITH TRANSITE, AND PIPE INSULATION IN RMS 63, 246, 66M, 66A, 25M, 130, & 460M.

CAMPBELL HALL NARRATIVE

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.

Audit goals and methodology are described in greater detail in the "Building Audit Methodology" section of this report.

HISTORY

Campbell Hall consists of the original building constructed in 1916 and an addition that was built in 1962. It has been referred to as the Home Economics Building. In 1962 when the addition was built an air conditioning system was added to the original 1916 building, and a new roof was installed. Several of the classrooms and offices have been remodeled over the past 10 years to add suspended ceilings, new lights, and to up-grade the electrical service and HVAC systems. In 1989 the two chillers were cross-connected to improve the efficiency of operation. A new cooling tower was installed in 1990 and masonry repairs were made to the front entrance in 1991.

The College of Human Ecology is currently in the final design stages to add another addition to the building and to enclosed the center parking area. This building addition will provide space for the display and storage of the textiles collection that is currently located in the basement of Campbell Hall. The enclosed courtyard will provide office space and a lounge area.

The current facility use is approximately 4% library, 15% classroom, 15% mechanical/custodial, 31% office, and 35% laboratory.

PRIMARY SYSTEMS

The 1916 section of the building is cast-in-place reinforced concrete structure veneered with brick and cut stone exterior. The foundation consists of poured concrete footers and walls. The floor of the basement is poured concrete. The crawl space area has exposed earth floor. The structure of the 1916 section of the building appears to be in good condition.

The 1962 section of the building has concrete piles with caps to support the columns. The columns consist of steel beams encased in concrete and steel beams to support the metal decking and concrete floor. Overall alignment appeared to be good and no structural deflection was observed.

The exterior closure of the 1916 building has been renovated at some time in the past 15 years. The mortar joints and caulking are in fair condition. The front entrance to the building had the limestone steps and front rebuilt in 1991. This project included caulking the limestone columns and the marble steps on the inside of the building. The 1962 section of the building also has a brick veneer that is in fair condition. The ivy vines were recently killed that were growing

on the building, but the remains need to be cleaned from the brick.

The windows in the 1916 building are a metal double hung style that have been painted several times. These windows were installed in the 1930s and several of them do not open. The windows in the 1962 section are aluminum frame awning style that function adequately. All the windows are single glazed glass with metal frames that provide very little thermal insulation value. We are proposing a project to replace these windows with a double glazed insulated type window.

Both sections of the building have flat roofs. The 1916 section has a cast-in place concrete roof deck and the 1962 section has a metal deck with lightweight concrete. The built-up-roofing of both sections is 30 years old. There were no current roof leaks observed. There are several areas that are blistered and the felts are exposed. There is a lot of debris on the roof that indicated some patching has been done. We are proposing a project to replace these roof covers because of the age and condition.

SECONDARY SYSTEMS

The interior partitions are primarily painted plastered walls and glazed block walls. The 1916 section with plaster walls has had several areas recently remodeled and the walls and finishes are in good condition. The 1962 section has glazed block walls that are very dirty and should be cleaned.

The ceilings are primarily suspended 2'X 4' acoustical tile that was added to the 1916 area and part of the original construction in the 1962 area. The 1962 section has very dirty ceiling tiles and some that have been damaged. We are proposing a project to have the ceiling tiles replaced and grids cleaned. The fluorescent light fixtures and registers that are installed in the ceilings are dirty and need to be cleaned.

The flooring is primarily vinyl tile that has been maintained and is in fair condition. Several of the office areas have had carpet installed. The stairwells in the 1916 section have a terrazzo floor and the restrooms have terrazzo and ceramic tiles on the floor.

SERVICE SYSTEMS

The plumbing systems in each section of the building do not appear to have been renovated since they were originally installed. The restroom fixtures are very old. The 1916 building still has the original marble toilet partitions and terrazzo floor. The original building design did not include a men's restrooms. This has been alleviated by converting a few of the women's restroom. It will be necessary in the near future to install new plumbing fixtures and replace the supply and waste lines to the restrooms. The laboratories that have kitchen and laundry equipment installed have been recently remodeled.

The HVAC systems were installed in 1962 when the two chillers were installed. Some modifications have been made to the HVAC systems to accommodate the remodeling projects and to conserve energy. However, the major components for the system are 30 years old. The two chillers were cross-connected in 1989 to allow one chiller to operate and cool the building at low demand. The chiller located in the crawl space (east) has been shutting down because of low oil

pressure and needs to be repaired.

The building addition that is currently in the design stages will be partially cooled with chilled water from these existing 30 year old chillers. There is a proposed project that has not been funded to rebuild one of the existing chillers. It would appear that the installation of a new more energy efficient chiller to supply chilled water for the entire building plus the proposed addition would be a better investment than rebuilding a 30 year old chiller. The location of the two existing chillers has limited access and will be very difficult to physically replace. When the atrium is installed and the interior parking lot eliminated, it will become economically prohibitive to replace the chiller located in Rm 066M.

Four DX systems have been installed to provide cooling to special use areas of the building. These systems all appear to be in good condition. The elevator was installed in 1962 and is used to carry freight as well as passengers. An emergency telephone has been installed and wheelchair accessible controls have been added. The elevator has functioned adequately, but could use a modernization and upgrade package. A new elevator will supplement the existing one when the new addition is added.

ELECTRICITY

The building is supplied by six transformers located in the basement of the 1916 building. Primary electric service was upgraded when the new transformers were installed during the PCB project. These transformers are not very well protected from maintenance personnel working in the utility tunnel area. There is currently plastic caution tape used to warn people of the conditions. A more permanent cage should be installed around the transformers.

Several new breaker panels have been installed for remodeling of specific areas. Interviews with maintenance personnel indicate that the building has not had any recent problems with electric distribution. The new addition will include the installation of a new electric distribution equipment. Utility department data indicates that the current building is using about 50% of the transformer capacity at peak load.

SAFETY STANDARDS

The building is equipped with a manual fire alarm system. There are fire hoses installed in the 1916 section and fire hose cabinets in the 1962 section. The emergency lighting system does not operate and a new system has been ordered. Wheelchair access is provided by a ramp at the south entrance. The elevator is located at the southwest corner of the building. It has been equipped with wheelchair accessible controls and an emergency telephone.

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 transite wall partitions in Rms 55A, 67, 151, 171, 166, 201, 265, 315, & 347 and pipe insulation located Rms 63, 246, 66M, 66A, 25M, 130, & 460M.

BUILDING PERIMETER

The area to the south of Campbell Hall has a fenced in playground for the preschool program and some open space with several large trees. The front (east) and rear (west) sides of the building also has several trees and some shrubs. Some of these trees are overhanging the building and cause the drains to get clogged when the leaves and seeds fall. The ivy was removed from the building but is beginning to grow back in some areas. The northwest corner of the building where the building addition is being added has had several plantings removed. This appears to have been done to provide access in preparation of the new building being designed.

The sidewalks on the east and south sides of the building have been covered with asphalt and are in good condition. The rear sidewalk is concrete and has developed a few cracks that should be repaired when construction of the addition is completed. The interior courtyard areas have not been maintained. The shrubs are overgrown and several of the patio stones are not level or are cracked. These courtyard areas need to be cleaned-up and repaired.

CONCLUSION

Campbell Hall has had several rooms and areas of the building remodeled over the past 10 years. There is currently underway a \$600,000 project that will renovate laboratory space on the 2nd & 3rd floor. Building components that will need to be replaced in the future are the BUR roofs, restroom fixtures, windows, entrance doors, air handlers in the 1916 building, electric centrifugal chillers, and modernization of the elevator. While these building components are currently functioning satisfactorily, it will be necessary to replace them in the next 5 to 8 years.

PROPOSED MAINTENANCE PROJECTS

CAMPBELL HALL #18

A. Corrective Maintenance Projects:

- 1. Modernize and upgrade elevator installed in 1962.....\$ 65,000
 - 2. Replace dimmers & lighting control system for auditorium.....\$ 25,000 *
 - 3. Replace built-up roof on both sections of the building (29,717 SF).....\$208,000
 - 4. Replace wood entrance doors (12 doors) and metal stairwell doors (8 doors) with new metal doors, hardware, & locks.....\$ 20,250
- Sub-Total 318,250

B. Building Improvements/Addition Projects:

- 1. Replace windows in both sections of the building (292 windows).....\$250,000

C. Projected (over the next 10 years) Component Replacement Projects:

- 1. Replace 150 Ton York chiller with a new more efficient style electric chiller.....\$160,000
 - 2. Clean air handler units and duct system in the 1916 section of the building.....\$ 8,500
 - 3. Replace ceiling tile and clean metal grid system in the 1962 section.....\$ 18,000
 - 4. Replace restroom plumbing fixtures and redecorate restrooms.....\$ 63,000
- Sub-Total 249,500

Total cost for all estimated projects = \$ 817,750

* These projects are currently on our departmental R&R project list as a proposed projects.

MAINTENANCE PROJECTS

(Less than \$5,000)

CAMPBELL HALL #011

1. Caulk joints in coping & cap on the 1916 building.
2. Trim shrubs, clean grounds and replace broken patio stones in courtyard.
3. Replace floor tile installed on wall under chalk board in room 335.
4. Remove debris and trash located in crawl space of 1916 building.
5. Install electric panel cover located behind east chiller.
6. Install cage around transformer area to protect workers.
7. Install new emergency and exit light system to replace failed system.*
8. Remove the vines that have grown back on the brick veneer in the rear and in the courtyard.
9. Repair 150 Ton chiller located in east crawl space.
10. Trim trees and eliminate branches that over hang the roof or rub the building.

* A replacement system is currently on order.

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 018 FACILITY NAME: CAMPBELL HALL
 DATE: 9-28-92 INSPECTOR: RDL
 YEAR CONSTRUCTED: 1916
 GROSS SQ FT: 92,562 NET SQ FT: 58,212
 REPLACEMENT COST \$ 12,496,000 X 0.90 = \$ 11,246,400

II. COMPONENT RATING

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST **	BUILDING COMPONENT REPLACEMENT COST	CONDITION VALUE MULTIPLIER FOR BLDG. COMPONENT	BUILDING COMPONENT CURRENT VALUE
Foundation	4.92	553,323	0.85	470,325
Columns and Beams	11.79	1,325,951	0.85	1,127,058
Exterior Walls	7.87	885,092	0.71	628,415
Windows & Doors	3.84	431,862	0.57	246,161
Roofing	2.54	285,659	0.41	117,120
Partitions & Drs.	8.23	925,579	0.71	657,161
Wall Finishes	2.50	281,160	0.54	151,826
Floor Finishes	4.77	536,453	0.74	396,975
Ceilings & Finish	6.78	762,506	0.70	533,754
Conveying	1.01	113,589	0.43	48,843
Plumbing	10.47	1,177,498	0.59	694,724
Heating	8.29	932,327	0.56	522,103
Cooling & Vent.	9.51	1,069,533	0.54	577,548
Elec. Ser. & Dist	1.64	184,441	0.73	134,642
Lighting & Power	11.03	1,240,478	0.62	769,096
Safety Standards	4.81	540,952	0.55	297,524
TOTALS	100.00	11,246,400	0.66	7,373,275

III. BUILDING RATING SUMMARY

Overall Building Rating = 66.0 %

* Replacement Cost assigned September, 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 # 018 DATE: 9-29-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Footings:			
Individual Footings & Piers <u>SUPPORT INTERIOR COLUMNS</u>	[]	[X]	[]
Continuous Footings <u>SUPPORTS EXTERIOR WALLS</u>	[]	[X]	[]
Grade Beams _____	[X]	[]	[]
Piles <u>PILINGS & CAPS USED TO SUPPORT COLUMNS</u>	[]	[X]	[]
Caissons _____	[X]	[]	[]
b. Foundation Wall Materials:			
Steel _____	[X]	[]	[]
Concrete Cast-in-place <u>FOOTINGS, PILINGS, & FOUNDATIONS</u>	[]	[X]	[]
Concrete Block _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Waterproofing and Underdrain:			
Coating _____	[X]	[]	[]
Membrane _____	[X]	[]	[]
Board _____	[X]	[]	[]
Drain Tile <u>FOUNDATION DRAIN INSTALLED ON EXTERIOR WALLS</u>	[]	[X]	[]
d. Slab on Grade (floor):			
Plain _____	[X]	[]	[]
Reinforced <u>4" CONCRETE REINFORCED WITH WIRE MESH</u>	[]	[X]	[]
e. Special Substructures:			
_____	[X]	[]	[]

B. COMMENTS:

1. NO SETTLEMENT OR CRACKS WERE OBSERVED IN THE FOUNDATION.

C. COMPONENT RATING: (\$553,323) X (0.85) = \$470,325
 Possible Condition Component
 Value Value Multiplier Value

COLUMNS AND BEAMS

FAC # 018 DATE: 9-30-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Columns and Beams:

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Concrete-in-place <u>USED FOR COLUMNS & FLOOR STRUCTURE</u>	[]	[X]	[]
Precast Concrete _____	[X]	[]	[]
Steel <u>USED WITH CONCRETE IN THE 1962 ADDITION</u>	[]	[X]	[]
Steel Fireproofing _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

b. Floors:

Concrete Slab <u>USED FOR FLOOR STRUCTURE & SLAB (1916)</u>	[]	[X]	[]
Precast Slab _____	[X]	[]	[]
Metal Deck _____	[X]	[]	[]
Metal Deck w/concrete fill <u>USED FOR 1962 BUILDING</u>	[]	[X]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Roof System:

Flat <u>METAL DECK WITH LIGHTWEIGHT CONCRETE (1962 BLDG.)</u>	[]	[X]	[]
Pitched _____	[X]	[]	[]
Concrete <u>CAST-IN-PLACE CONCRETE DECK (1916 BLDG.)</u>	[]	[X]	[]
Steel _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1. THERE WERE NO SIGNS OF ANY MOVEMENT OR CRACKS IN THE STRUCTURAL MEMBER.

C. COMPONENT RATING: $\left(\frac{\$1,325,951}{\text{Possible Value}} \right) \times \left(\frac{0.85}{\text{Condition Value Multiplier}} \right) = \frac{\$1,127,058}{\text{Component Value}}$

EXTERIOR WALLS

FAC # 018 DATE: 9-30-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Walls:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Concrete <u>CAST-IN-PLACE LOAD BEARING</u>	[]	[X]	[]
Masonry <u>BRICK VENEER EXTERIOR</u>	[]	[X]	[]
Metal Siding <u>ALUMINUM SIDING USED FOR WALK ENCLOSURE</u>	[]	[X]	[]
Wood Siding <u>PLYWOOD ENCLOSURE FOR WALKWAY TO AUDITORIUM</u>	[]	[]	[X]
Other _____	[X]	[]	[]
b. Finishes:			
Stucco _____	[X]	[]	[]
Paint <u>WINDOWS & LINTELS WERE RECENTLY PAINTED</u>	[]	[X]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1. FRONT ENTRANCE WAS RECENTLY REPAIRED BY REMOVING THE LIMESTONE STEPS AND RESETTING WITH NEW CAULKING AND RE-CAULKING THE FRONT LIMESTONE PANELS & COLUMNS.
2. WALKWAY TO AUDITORIUM FROM 2ND FLOOR HAS A LARGE HOLE IN THE SIDE AND SHOULD BE REPAIRED TO KEEP SQUIRRELS FROM ENTERING. THIS WALKWAY IS SCHEDULED TO BE REPLACED WHEN THE NEW ADDITION IS CONSTRUCTED.

C. COMPONENT RATING: (\$885,092) X (0.71) = \$628,415

Possible	Condition	Component
Value	Value Multiplier	Value

EXTERIOR WINDOWS & DOORS

FAC # 018 DATE: 9-30-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Windows type & number:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Wood _____	[X]	[]	[]
Steel _____	[X]	[]	[]
Alum <u>ALUMINUM FRAMES, AWNING STYLE WINDOWS (1962 BLDG)</u>	[]	[X]	[]
Other <u>CAST IRON FRAMES, DOUBLE HUNG WINDOWS (1916 BLDG)</u>	[]	[]	[X]
 b. Window glazing			
Single pane <u>GLAZING USED FOR BOTH TYPES OF WINDOWS</u>	[]	[]	[X]
Double pane _____	[X]	[]	[]
Other _____	[X]	[]	[]
 c. Doors type & number:			
Wood <u>PAINTED WOOD DOORS WERE INSTALLED IN 1916 BLDG.</u>	[]	[]	[X]
Steel <u>METAL DOORS INSTALLED IN THE 1962 ADDITION</u>	[]	[X]	[]
Alum _____	[X]	[]	[]
Other _____	[X]	[]	[]
 d. Shading Devices:			
Types <u>BLINDS WERE USED FOR THE CLASSROOMS</u>	[]	[X]	[]

B. COMMENTS:

1. SEVERAL OF THE CAST IRON WINDOWS IN THE 1916 BUILDING HAVE BEEN SEALED SHUT FROM THE MANY COATS OF PAINT APPLIED.
2. WOOD ENTRANCE DOORS HAVE BEEN REPAIRED WITH STEEL BRACKETS AT THE CORNERS SEVERAL TIMES.

C. COMPONENT RATING: $\frac{(\$431,862)}{\text{Possible Value}} \times \frac{(0.57)}{\text{Condition Value Multiplier}} = \frac{\$246,161}{\text{Component Value}}$

ROOFING

FAC # 018 DATE: 9-29-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Roof Covering:	N/A	Sat	Att
Built-up _____	[X]	[]	[]
Built-up w/gravel <u>FLAT ROOF (INSTALLED IN 1962) (29,717 SF)</u>	[]	[]	[X]
Asphalt Shingle _____	[X]	[]	[]
Copper _____	[X]	[]	[]
Glass (Skylight) _____	[X]	[]	[]
Slate _____	[X]	[]	[]
Spanish Tile _____	[X]	[]	[]
Metal <u>COVERS THE ENCLOSED WALKWAY TO AUDITORIUM (203 SF)</u>	[]	[]	[X]
Other _____	[X]	[]	[]

b. Flashing:

Base <u>BASE FLASHING IS FELT</u>	[]	[X]	[]
Counter <u>COPPER (1916 BLDG) & STAINLESS STEEL (1962 BLDG)</u>	[]	[X]	[]
Cap <u>PRECAST CONCRETE (1962 BLDG) & LIMESTONE PANELS (1916)</u>	[]	[]	[X]
Through Wall _____	[X]	[]	[]
Valley & Ridge _____	[X]	[]	[]

c. Gravel Stop & Edge Strips:

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

Gutters _____	[X]	[]	[]
Drains <u>LOCATED IN CENTER OF ROOF AREAS, SOME SLOPE</u>	[]	[X]	[]
Scuppers <u>1962 ADDITION, LOCATED IN PARAPET</u>	[]	[X]	[]
Downspouts _____	[X]	[]	[]

f. Parapets:

Concrete _____	[X]	[]	[]
Brick <u>USED FOR PARAPET WALLS (SOME SPALLING OF BRICK)</u>	[]	[]	[X]
Block _____	[X]	[]	[]
Precast _____	[X]	[]	[]
Other _____	[X]	[]	[]

g. Insulation:

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

1. SEVERAL EXPOSED FELTS, BLISTERS, & DETERIORATION OF THE ROOF COVER.
2. CAP & COPING NEEDS TO BE CAULKED AT JOINTS.
3. DEBRIS NEEDS TO BE REMOVED FROM ROOF. DRAIN SCREENS ARE CLOGGED FROM LEAVES FALLING ON ROOF AREA.
4. BRICK ON THE INSIDE OF THE PARAPET IS SPALLING AND SOME MORTAR IS LOOSE.

C. COMPONENT RATING: $(\underline{\$285,659}) \times (\underline{0.41}) = \underline{\$117,120}$

Possible	Condition	Component
Value	Value Multiplier	Value

WALL FINISHES

FAC # 018 DATE: 9-30-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint <u>1916 BUILDING HAS BEEN RECENTLY PAINTED</u>	[]	[X]	[]
b. Wall Coating _____	[X]	[]	[]
c. Wall Coverings <u>SOME CORRIDOR AREAS</u>	[]	[X]	[]
d. Paneling			
Prefinished _____	[X]	[]	[]
Plank _____	[X]	[]	[]
e. Cork _____	[X]	[]	[]
f. Wallpaper _____	[X]	[]	[]
g. Ceramic Tile <u>RESTROOMS OF 1962 ADDITION</u>	[]	[X]	[]
h. Trim & Wainscot _____	[X]	[]	[]
i. Decoration _____	[X]	[]	[]
j. Glass _____	[X]	[]	[]
k. Other <u>GLAZED BLOCK WAS USED IN THE 1962 ADDITION (DIRTY)</u>	[]	[]	[X]

B. COMMENTS

1. GLAZED BLOCK IN THE 1962 ADDITION IS VERY DIRTY. WASHING THE WALLS WITH SOAP AND WATER WOULD IMPROVE SATISFACTORILY.

C. COMPONENT RATING: $\frac{(\$281,160)}{\text{Possible Value}} \times \frac{(0.54)}{\text{Condition Value Multiplier}} = \frac{\$151,826}{\text{Component Value}}$

FLOOR FINISHES

FAC # 018 DATE: 9-30-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Carpet:			
Rolled <u>INSTALLED IN A FEW OFFICES & SEMINAR ROOMS</u>	[]	[X]	[]
Tile _____	[X]	[]	[]
b. Composition:			
Epoxy _____	[X]	[]	[]
Synthetic _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Concrete Topping:			
Clear Sealant <u>MECHANICAL ROOMS & JANITORS CLOSETS</u>	[]	[X]	[]
Abrasive _____	[X]	[]	[]
Epoxy _____	[X]	[]	[]
Aggregate _____	[X]	[]	[]
d. Resilient:			
Vinyl Tile <u>USED FOR CORRIDORS, CLASSROOMS, & OFFICES</u>	[]	[]	[X]
Linoleum _____	[X]	[]	[]
Vinyl _____	[X]	[]	[]
Rubber _____	[X]	[]	[]
Cork _____	[X]	[]	[]
e. Ceramic Tile <u>USED FOR RESTROOMS</u>	[]	[X]	[]
f. Masonry _____	[X]	[]	[]
g. Terrazzo <u>USED FOR STAIRWELL LANDINGS & STAIR TREADS</u>	[]	[X]	[]
h. Wood _____	[X]	[]	[]
i. Metal _____	[X]	[]	[]

B. COMMENTS

1. TILE AT ENTRANCES FROM STAIRWELLS IS WORN AND DAMAGED FROM WATER. SELECTIVE REPLACEMENT IS NEEDED.

C. COMPONENT RATING: $(\underline{\$536,453}) \times (\underline{0.74}) = \underline{\$396,975}$

Possible	Condition	Component
Value	Value Multiplier	Value

COOLING & VENTILATING

FAC # 018 DATE: 9-28-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. System:			
Type <u>4 DIFFERENT SYSTEMS; DDHV, MZ, REHEAT, & FAN COIL</u>	[]	[X]	[]
Capacity _____	[X]	[]	[]
b. Chillers:			
Centrifugal <u>2 YORK CENTRIFUGAL CHILLERS, TOTAL 257 TONS</u>	[]	[]	[X]
Reciprocating _____	[X]	[]	[]
Absorption _____	[X]	[]	[]
c. Cooling Towers:			
Type <u>2 COOLING TOWERS, HAVENS (WEST) & MARLEY (EAST)</u>	[]	[X]	[]
Capacity <u>APPROXIMATELY 300 TONS</u>	[]	[X]	[]
d. Condensers: <u>4 CONDENSER UNITS FOR DX SYSTEMS</u>	[]	[X]	[]
e. Space Equipment:			
Direct Expansion -			
Window units _____	[X]	[]	[]
Thru-the-wall _____	[X]	[]	[]
Single zone <u>4 DIFFERENT SYSTEMS</u>	[]	[X]	[]
Other _____	[X]	[]	[]
Air/Water -			
2-pipe fan coil <u>SUPPLIES RM #100 (DAY CARE CENTER)</u>	[]	[X]	[]
Unit ventilators <u>LOCATED IN STAIRWELLS</u>	[]	[X]	[]
Terminal Reheat <u>RM #063B, SINGLE ZONE SYSTEM</u>	[]	[X]	[]
Variable volume _____	[X]	[]	[]
Dual Duct <u>1962 ADDITION IS COOLED BY DDHV</u>	[]	[X]	[]
Multi-zone <u>1916 BLDG. IS COOLED BY A MULTI-ZONE SYSTEM</u>	[]	[]	[X]
f. Special Systems:			
Type <u>RM #362A IS A BYPASS SYSTEM WITH HUMIDIFIER</u>	[]	[X]	[]
Capacity _____	[X]	[]	[]
g. Control Systems:			
Pneu <u>ORIGINAL VALVES AND DAMPER CONTROLS</u>	[]	[X]	[]
Electric _____	[X]	[]	[]
Electronic <u>DDC CONTROLS WERE INSTALLED AND CONTROL CYCLES</u>	[]	[X]	[]
h. Fans:			
Exhaust <u>24 EXHAUST FANS</u>	[]	[X]	[]
Recirculating <u>16 RECIRCULATING FANS</u>	[]	[X]	[]

B. COMMENTS:

1. THE NEW BUILDING ADDITION WILL BE SUPPLIED WITH CHILLED WATER FROM THE EXISTING CHILLERS THAT ARE 30 YEARS OLD. WE CAN EXPECTED THAT WE WILL HAVE TO INSTALL A NEW CHILLER IN THE NEXT 3 TO 8 YEARS.
2. SEVERAL MODIFICATIONS HAVE BEEN MADE TO AIR HANDLERS. A NEW AIR DISTRIBUTION SYSTEM WILL HAVE TO BE INSTALLED IN THE FUTURE.

C. COMPONENT RATING:
$$\frac{(\$1,069,533)}{\text{Possible Value}} \times \left(\frac{0.54}{\text{Condition Value Multiplier}} \right) = \frac{\$577,548}{\text{Component Value}}$$

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 018 DATE: 9-28-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

(a) Service:

Substation CIRCUIT # 102/206

Primary Voltage 13,200 VOLTS

Transformer:

<u>Manufacture</u>	<u>Type</u>	<u>KVA</u>	<u>Secondary Voltages</u>
<u>GE P499246</u>	<u>SILICONE</u>	<u>250</u>	<u>120/240 VOLTS</u>
<u>GE P499247</u>	<u>SILICONE</u>	<u>250</u>	<u>120/240 VOLTS</u>
<u>GE P499248</u>	<u>SILICONE</u>	<u>250</u>	<u>120/240 VOLTS</u>
<u>GE P499249</u>	<u>SILICONE</u>	<u>250</u>	<u>120/240 VOLTS</u>
<u>GE P499250</u>	<u>SILICONE</u>	<u>250</u>	<u>120/240 VOLTS</u>
<u>GE P499251</u>	<u>SILICONE</u>	<u>250</u>	<u>120/240 VOLTS</u>

(b) Distribution System:

Panelboard (type) CIRCUIT BREAKERS & FUSE BOXES

Voltage 13,200 VOLTS

Amperage 600 AMP SWITCHGEAR BREAKERS (9 CIRCUITS)

Conduit STEEL AND ALUMINUM

Conductor COPPER

Wire (type) #1 & #2 RH AND 500 MCM

Armored Cable N/A

Other N/A

(c) Emergency System:

General or (type & capacity) NONE

B. COMMENTS:

1. ROOM 125A HAS A VERY OLD FUSE BOX THAT PROTECTS THE CLASS BELL AND EXIT LIGHTING CIRCUITS.
2. NEW EXIT LIGHTING SYSTEM HAS BEEN ON ORDER FOR SEVERAL MONTHS.

C. COMPONENT RATING:
$$\left(\frac{\$184,441}{\text{Possible Value}} \right) \times \left(\frac{0.73}{\text{Condition Value Multiplier}} \right) = \frac{\$137,642}{\text{Component Value}}$$

ELECTRICAL/LIGHTING & POWER

FAC # 018 DATE: 9-30-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Lighting (lamp type):	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Fluor <u>FLUORESCENT FIXTURES ARE THE PRIMARY TYPE LIGHTING</u>	[]	[X]	[]
Incand <u>ENTRANCE AREAS AND MECHANICAL ROOMS</u>	[]	[]	[X]
HID <u>USED FOR OUTSIDE SECURITY LAMPS</u>	[]	[X]	[]
Other _____	[X]	[]	[]
b. Receptacles & Switches			
Type & Capacity <u>GROUNDING SYSTEM</u>	[X]	[]	[]
c. Special:			
Baseboard Heat _____	[X]	[]	[]
Lightning Protection _____	[X]	[]	[]
Communication & Alarm _____	[X]	[]	[]
Data Systems _____	[X]	[]	[]

B. COMMENTS:

1. SEVERAL ELECTRIC PANELS IN MECHANICAL ROOMS HAVE THE FRONT COVERS REMOVED AND ELECTRICAL CONNECTIONS EXPOSED. EXIT LIGHTING PANEL IN ROOM 25M HAS A SIGN THAT IT HAS BEEN UNDER REPAIR SINCE 10-24-91.

C. COMPONENT RATING: $\frac{(\$1,240,478)}{\text{Possible Value}} \times \left(\frac{0.62}{\text{Condition Value Multiplier}} \right) = \frac{\$769,096}{\text{Component Value}}$

BUILDING PERIMETER EVALUATION

FAC # 018 DATE: 9-28-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
1. Structural Access:			
Driveway <u>LOCATED ON THE NORTH SIDE OF BUILDING</u>	[]	[X]	[]
Loading Dock <u>LOCATED IN COURTYARD, BUMPERS NEED REPLACED</u>	[]	[]	[X]
Sidewalks			
Front <u>ASPHALT WALK ALONG NEIL AVENUE</u>	[]	[X]	[]
Side <u>SOUTH SIDE IS AN ASPHALT WALK, SOME UNEVENNESS</u>	[]	[]	[X]
Rear <u>WEST SIDE CONCRETE WALK, A FEW CRACKS</u>	[]	[X]	[]
Steps			
Front <u>LIMESTONE & MARBLE WERE RELAYED IN 1991</u>	[]	[X]	[]
Side <u>SOUTH SIDE HAS 2 STEPS DOWN TO ENTRANCE DOOR</u>	[]	[X]	[]
Rear _____	[X]	[]	[]
Handicap Ramp <u>SOUTHEAST ENTRANCE, RAMP TO NARROW DOORWAY</u>	[]	[X]	[]
2. Lawn and Landscaping:			
Lawn <u>LOCATED IN THE FRONT (EAST SIDE)</u>	[]	[X]	[]
Shrubs <u>OVERGROWN, NORTHWEST CORNER THEY HAVE BEEN REMOVED</u>	[]	[]	[X]
Trees <u>OVERHANG BUILDING, LEAVES CLOG DRAINS ON THE ROOF</u>	[]	[]	[X]
Undesirable Insect <u>NONE OBSERVED</u>	[X]	[]	[]
Bedding Material <u>IVY AND MULCH</u>	[]	[X]	[]
Watering System _____	[X]	[]	[]
3. General Site Information:			
Signage <u>LOCATED ON NEIL AVENUE NEXT TO ENTRANCE</u>	[]	[X]	[]
Address Identification <u>LOCATED ON BUILDING SIGN</u>	[]	[X]	[]
Security Lights <u>LOCATED ON ROOF FOR SIDES & REAR</u>	[]	[X]	[]
Street Lights <u>LOCATED ALONG NEIL AVENUE</u>	[]	[X]	[]
Drainage <u>ALONG NEIL AVENUE AND IN PARKING AREAS</u>	[]	[X]	[]
Storm Drains <u>LOCATED IN PARKING AREAS & DRIVEWAYS</u>	[]	[X]	[]

B. COMMENTS:

1. OVERHEAD WALKWAY ON NW CORNER OF THE BUILDING HAS BEEN HIT AND DAMAGED BY A TRUCK. THIS WALKWAY WILL BE REMOVED WHEN THE NEW ADDITION IS ADDED AND THE COURTYARD CLOSED.

**The Ohio State University
Department of Physical Facilities
BUILDING AUDIT METHODOLOGY**

1. BUILDING AUDIT PROGRAM OBJECTIVE

To provide a building-by-building inventory, including maintenance deficiencies that currently exist, for the OSU buildings that 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" sheets provide data on the utilities to the buildings and the type of systems in each building.

4. COST ESTIMATES

Costs are for budgeting purposes only and are based on The Means Standard Construction Cost data, engineer's 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 in regard to occupant safety.

(5) Cost estimates are in current year dollars and include contractor mark-ups, construction administration costs, and architectural/engineering costs where applicable. Escalation factors must be applied for future work. Combining of projects should serve to decrease costs. These estimates are strictly for purposes of budgeting, and final pricing will be required when the specific scope of work for the project is defined.

(6) The building inspections are defined to include the following:

(a) Includes general repainting and redecorating, wholesale replacement of building and system components. Ongoing maintenance, replacement and renovation projects are not included.

(b) Includes exterior building walls and attached items.

(c) Includes the entrance steps up 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 DUCK 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