

FACILITY AUDIT REPORT
WISEMAN HALL, #157
and
COMPREHENSIVE CANCER CENTER, #363
JULY 1995

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**EXECUTIVE SUMMARY AND PROJECT LIST FOR
WISEMAN HALL and COMPREHENSIVE CANCER CENTER**

Wiseman Hall is a 35-year-old building and still structurally sound. It was originally constructed as Health Center Research Laboratories and four years later renamed Wiseman Hall. In 1968 an addition to the north and a second floor was completed to house animals and research labs, for a gross square footage of 79,842 SF. Finally, in 1980 a 31,794 SF addition of two more floors above the south end of the original building was completed to house the Comprehensive Cancer Research Center. This addition was given a separate building number in 1981 and is now listed as building #363.

The roof and the plumbing are the main concerns with the building. The roof is original and is well past its expected life and will need to be replaced in the next few years. Plumbing waste and condensate pipe stoppages and pipe leaks are increasing in occurrence. There is an unfunded project identified to upgrade the center elevator to conform to present day ADA requirements. The exterior of the building is in need of general maintenance to assure another 25 years of service. Aside from the roof replacement and elevator upgrade requested at this time, the building should only require those major maintenance items noted below over the next ten years.

PROPOSED MAINTENANCE PROJECTS

A. Corrective Maintenance Projects: Control No.

1. Remove dried caulking, and caulk all joints around all windows and doors including the store fronts. Clean and seal all exterior limestone panels and perimeter trim. Repair curtain wall jamb strips and caulk joints as required.	\$ 12,000	2827
2. Replace ceiling tiles and grid in halls	\$ 11,375	2828
3. Clean ceiling registers and light fixtures	\$ 7,000	2829
4. Clean all sanitary, storm and acid waste piping .	\$ 6,000	2830
5. Replace composite flooring in room 165 and patch all loose or open areas	\$ 7,000	2831
6. Replace condensate piping in room 200M.	\$ 45,000	2417
7. Replace all the BUR roofs on 2nd, 4th and 5th levels	\$400,000	2239
SUB-TOTAL	\$488,375	

B. Building Improvement/Addition Projects:

1. Upgrade the center elevator	\$ 80,000	1570
SUB-TOTAL	\$ 80,000	

C. Building Component Replacements expected within the next 5 to 10 years:

1. Replace Chiller in room 520M in 5 to 10 years ...	\$125,000	2832
2. Replace misc. exhaust fans and/or motors.....	\$ 10,000	2833
SUB-TOTAL	\$135,000	
Total Cost for all Projects	\$703,375	

GENERAL BUILDING INFORMATION

BRUCE K. WISEMAN HALL #157 and COMPREHENSIVE CANCER CENTER #363

BUILDING ADDRESS: 400 and 410 WEST 12th AVE.

GROSS SQ. FT.: 113,508

NET ASSIGNABLE SQ. FT.: 81,803

MECHANICAL/CUSTODIAL AREA SQ. FT.: 18,996

YEAR OF CONSTRUCTION: 1960

YEAR OF LAST RENOVATION: 1968, 1980, HVAC 1994

NUMBER OF STORIES/BASEMENT: FOUR WITH PENTHOUSE, NO BASEMENT

AIR CONDITIONING (Percentage): 95%

CURRENT USE: BLDG 157 ANIMAL RESEARCH LABS, LABS AND OFFICES FOR WISEMAN HALL AND BLDG 363 CANCER RESEARCH LABS AND OFFICES.

TYPE OF CONSTRUCTION: REINFORCED CONCRETE FRAME, MASONRY SKIN

ESTIMATED REPLACEMENT COST: 18,756,000 *

WHEELCHAIR ACCESSIBILITY: ACCESS FROM THE SOUTHEAST DOOR, MAIN ENTRANCE TO ELEVATORS AND ALL FLOORS.

OVERALL BUILDING CONDITION: SATISFACTORY **

NUMBER OF EXIT STAIRWAYS: FIVE

AREA SHOP RESPONSIBILITY: SOUTH

* Replacement Cost assigned November 1994 by The Office of University Resource Planning & Institutional Analysis.

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

BUILDING SYSTEMS INFORMATION

WISEMAN HALL #157, BRUCE K., and COMPREHENSIVE CANCER CENTER #363

HEATING:

Source 6" HPS FROM STEAM LOOP IN AT TUNNEL ROOM 1004M
Type Heating System HOT WATER FROM STEAM HEAT EXCHANGERS 200M 201M & 520M
Steam (Line size, valve location) 6" HPS LINE IN RM 200M WITH DESUPERHEATER
Building Htg Water (line size, valve location) 4" IN 200M, N201M AND 520M

VENTILATION SYSTEM: 100% OUTSIDE AIR ON ALL MAIN AIR HANDLING UNITS

COOLING:

Bldg % 95 Chillers FOUR AT APPROXIMATELY 700 TONS
Window Units NONE Thru-the-roof TWO ROOF Direct exp. units TEN UNITS

HVAC CONTROL SYSTEM: VARIES PNEUMATIC AND DDC

ELECTRIC:	Source	Size(KVA)	Primary/Secondary	Switchgear & Main Disc. (Rm)
1.	BUCKEYE 103/301	750	13,800 / 208/120	3000 AMP 1004M
2.	BUCKEYE 103/301	500	13,800 / 480/277	2000 AMP ROOF S/W
3.	BUCKEYE 103/301	750	13,800 / 208/120	3000 AMP 520M

PLUMBING:

Water (size, valve location) 6" TO ROOM 149B CHASE SOUTHWEST CORNER
Gas (size, valve location) 4" AT METER AT NORTHWEST CORNER OF ELEVATOR
Domestic Hot Water (size, valve location) 2 EA 2" IN 201M AND 520M
Compressed Air (size, location) 1" IN RM 200M AND 1-1/2" IN RM 520M

SEWERS:

Storm ONE EACH 6", 8" AND 12" ON WEST SIDE Sanitary 6: S/W CORNER

METERS:

Gas (size, location) 4" WEST SIDE BEHIND ELEVATOR
Water (size, location) 6" SPLIT TO METERS IN ROOM 163 AND MECHANICAL ROOMS
Electric (size, location) ON EACH OF THE TRANSFORMERS

ALARM SYSTEMS:

Fire Alarm MANUAL Panel Location SOUTH MAIN ENTRANCE AND ROOM 164 WEST
Fire Pump YES Pump Location N201M AND ROOM 171M WEST OF RM 149B
Sprinklers NO Panel Location N/A
Other Alarms SECURITY SYSTEM, HVAC SYSTEM,

ELEVATORS:

Number THREE Type (passenger, freight) 1 PASS, 2 PASS/FREIGHT
Manufacturer OTIS Size 76x64, 56x80, 51x80 INCHES

EMERGENCY GENERATOR: Size 250 KW & 275 KW Location RM 1032M & 520M RESPECT.

ASBESTOS SURVEY (1986):

PIPE AND EQUIPMENT INSULATION IN MECHANICAL ROOMS AND SOME LABS.

WISEMAN HALL and COMPREHENSIVE CANCER CENTER NARRATIVE

HISTORY

Wiseman Hall was constructed in 1959 and occupied in 1960 with a gross area of 62,255 SF. It was originally built for offices and labs. In 1967 a building addition of 17,587 SF was added on the north side to house an animal research facility and in 1980 a third and fourth floor of 31,794 SF was added and called The Comprehensive Cancer Center, Building #363. In 1992 a small addition to house the MRI lab was added onto the northwest corner of Wiseman Hall for a total area of 114,636 SF.

Over the years several renovations to about all of the labs have taken place to meet the changing demands of the research center. In 1994 the latest renovation project included two chiller replacements and cooling tower modifications. Also, upgrades to the HVAC distribution system, lab hood exhaust system and air handling units serving the first, second, third and fourth floors were completed at that time. Control upgrades and DDC remote readout to meet the present day HVAC needs were also completed.

In an interview with various occupants of the building, it was learned that the occupants are satisfied with the basic condition and performance of the building systems. Miscellaneous concerns of building appearances were expressed and noted in the report.

A review of the work orders indicated that there are an average number of emergency calls. However, more than normal routine maintenance problems with Wiseman Hall are beginning to show up in the areas of roof leaks, plumbing, lighting and door hardware.

The building is functioning as designed, at this time, and has held up well over the 35 years since built, 28 years since the first and second floor addition and 15 years since the third and fourth floor addition. Several common areas have not been renovated since originally built and some interior building components have exceeded their life expectancy. Several exterior components have failed and will need to be repaired over the next five years.

These items when completed will protect the structural and exterior elements, enhance building performance and create a satisfying visual environment for students, faculty, staff and visitors.

Occupancy of building #157 and #363 as reported by The Office of University Resource Planning & Institutional Analysis in the C-1 Building Space Assignment Reports dated December 31, 1994 for a Net Assignable Area of 81,803 SF is as follows; General research 36.1%, Mechanical 23.2%, Animal Research 16.4%, Cancer Research 12.4%, General Administration 6.0% and Custodial 5.9%.

PRIMARY SYSTEMS

This structure consists of reinforced concrete grade beams, caissons, waffle type floors, columns and beams to form the basic skeletal components of this 4-story building. The first floor substructure was not visible except for portions of the exterior perimeter grade beams and appears to be in good condition. There are no major signs of settlement or movement in the building foundation or structural columns and supports. The concrete floors, roofs and beams appear to be in good condition.

A brick veneer was installed on concrete block to form the exterior walls. Openings along the east side from the first floor to the bottom of the roof form openings for the aluminum windows and limestone panel curtain walls. Store front windows to the first floor cantilevered roof line with glazed block underneath are located on the southeast corner. Also, store front window sections are along the total length of the second floor south wall of the original building and below the curtain wall of the addition above.

Limestone panels on the south entrance wall and at the second floor roof line complete the south and east architectural elements which accent the lower two stories.

A glass curtain wall in front from the second floor store front windows to the fourth floor roof is made up of anodized aluminum heads, sills, jambs and mullions to hold double pane fixed windows in place. The sides of the upper two floors (bldg. #363) are brick veneer while the rear is stuccoed. The penthouse walls are insulated steel siding.

Overall the exterior brick veneer is in good condition. Some cracking at exterior corners due to settlement and/or expansion on the southeast and southwest needs to be patched, sealed and monitored over the next several years. Other small areas need to be cleaned, tuckpointed and sealed where water staining, loose mortar, cracking and/or settlement has occurred.

The limestone panels on the southeast corner at the front entrance of the building have loose mortar joints or cracked panels due to settlement and/or lack of expansion joints.

All roof areas are of the concrete deck waffle type, with a Built-up-roof (BUR) consisting of felt layers with hot tar and pea gravel on insulation board. However, this is the original roof and it has failed in several places and is proposed to be replaced at this time. Some miscellaneous flashing problems with the gravel stop/fascia were noted, which need to be repaired at this time. There were no leaks in the rubber roof over the MRI Lab room N113.

INTERIOR SYSTEMS

The reinforced concrete skeleton is enclosed with concrete block to form interior walls, stairwells, halls and rooms. The partitions, doors, hardware, walls, floors, and ceilings have held-up well after 35 years of use. Hardware repairs will increase as the building ages, and some doors will need to be adjusted and/or planed to shut properly.

Some ceilings and rooms in common areas need to be repainted but are in good condition, while some of the light fixtures, registers, grills and diffusers in these areas need cleaning. The age and condition of the metal ceiling tile would justify a replacement rather than cleaning or spot replacement.

The floors are primarily asphalt tile that has been well maintained, however, some areas noted have a composite epoxy flooring system that needs to be repaired in several places. The equipment rooms have exposed concrete that has been sealed with epoxy coating that needs to be repaired in some places.

SERVICE SYSTEMS

The major service systems: natural gas, domestic water, sanitary waste, acid waste, compressed air, vacuum, distilled water and oxygen systems all appeared to be functioning properly.

The elevators were operating properly and maintenance records did not indicate any major problems. The center elevator serving all five floors needs to be upgraded to meet ADA requirements.

The plumbing drainage system did not appear to have any problems, however, maintenance records indicate that stoppages are occurring more frequently in main drains and a complete cleaning of all sanitary, storm and acid waste systems is recommended. There was good water pressure at faucets. Most of the piping appears to be copper and should hold up over the next ten years, however, the joints were soldered with lead solder at that time and lead testing may be required. The domestic Hot Water Heaters have recently been converted to instantaneous type heaters while still using the old hot water storage tanks. The restrooms fixtures were functioning properly and no replacements are needed, however, maintenance records indicate that sanitary waste pipe stoppages and domestic water faucet leaks are occurring more frequently.

Since the piping and faucets are 35 years old and almost to the end of their useful life, cleaning and/or replacement should be planned for within the next ten years.

The Hot Water Heating system supplies convectors located on the outside walls under windows, fan coil units at entrances, hot deck heating and preheat coils in some air handling units and reheat coils in other areas.

Hot water is heated and pumped through a Medium Pressure Steam (MPS) to hot water heat exchanger located in the mechanical rooms. The Medium Pressure Steam is piped to the heat exchanger from a pressure reducing station with desuperheater in room 200M and tapped into the High Pressure Steam loop located in front of the building and entering the tunnel crawl area from the east. This system was in operation to supply hot water to the hot decks and water heaters and appears to be operating properly. A request to repair condensate steam piping on this system has been proposed.

The cooling system consists of 300, 200, 190 and 45 Ton chillers cooled by Marley open type cooling towers and an air cooled condenser (45 ton). Various chilled water pumps supply water to seven air handling units, miscellaneous lab coils and lab equipment condensers.

The seven major air handling units supply air to grills and diffusers throughout the building. Two units are multizone constant air volume (MZCV) units. One unit is a dual duct high velocity (DDHV) unit and two are variable air volume (VAV) units. The remainder of the units are constant air volume (CAV). Ten zones requiring special controls have single zone split system units. The MRI Lab utilizes a roof top heating/cooling unit. The cooling and ventilation system appeared to be operating properly, although outside air grills need to be cleaned.

Exhaust fans located throughout the building remove air from restrooms, common areas, classrooms and mechanical rooms. Specific fans for removing lab hood exhaust are located on the second and fourth floor roofs while two exhaust fans

remove and scrub return air from the third and fourth floor labs (bldg 363). Before the air is exhausted to the outside, the air passes over a heat reclaim coil and a glycol solution is pumped to a fresh air intake coil which tempers the outside supply air coming in. All these units appear to be in fairly good condition, operating properly and well maintained.

ELECTRICAL

The electrical power to Wiseman Hall and the Cancer Center is provided by one each 750 KVA 208/120 volt transformers fed from the buckeye substation circuits 103/301. One 500 KVA 480/277 volt transformer, on the second floor roof, supplies power to equipment in the first floor operating rooms. The 750 KVA transformers and switchgear are located in rooms 1004M and 520M of the penthouse, fused switches from the transformer feed lighting panels, motor control panels (MCC) in rooms 200M, 201M, 1004M and 520M and circuit breaker power distribution panels. The MCC panels contain fused switches which distribute power to mechanical equipment in or near the room. Panel sizes vary throughout the building depending on the load. At about 13.4 watts per square foot the building appears to have an adequate power supply.

The building has fluorescent light fixtures throughout while incandescent lighting is used for accent lighting. Many areas have had the newer 32 watt fixtures installed during room renovation or normal replacement.

SAFETY STANDARDS

The building safety systems consist of a fire pump that supplies a standpipe located in each stair well for fire department use. Limited smoke detectors mostly in the 1976 addition and manual pull stations at exits provide local fire annunciation from the panel in hall 164 and at the front entrance. Individual labs and several rooms are secured using local keying to limit access, while the building is controlled by a key card security system and is remotely alarmed.

An emergency generator and uninterrupted power source supplies power to lighted exit signs and emergency lights in the hallways and stairwells. Automatic door openers have been installed at the main south entrance. The elevators provide access to all floors of the building.

ASBESTOS

The Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report: Inventory of Friable Asbestos Containing Material in Buildings of the Ohio State University (Main and Branch Campuses) and the Recommendations for Corrective Action by PEI Associates, Sept. 1986, identifies asbestos containing materials in rooms N102, N114, 103A, 148, 156, 161, 163, 165, 1001, 1004M, 200M, 201M, and 520M. Most of this is pipe, tank, equipment and heat exchanger insulation in the mechanical rooms. A sizable portion was removed during the 1994 HVAC renovation project and smaller sections removed during repairs, however, much of the original remains on the heating system piping.

BUILDING PERIMETER

The sidewalk on the east and north side of the building is in good condition. The south sidewalk has four sections with cracks and holes in it and needs to be repaired. The asphalt and concrete dock area on the west side is in good condition, however, minor repairs and sealing are required on the older sections

of the dock. The lawn area on the south and east side has bare spots and the grass is entirely missing between the curb and sidewalk on the south/east side of the building. There is no mulch around the shrubbery. There is a drainage problem at the north side and should be graded or have drains installed. Entrances to the building are well lighted and area and flood lighting appears to be distributed properly.

INTERIOR

1. Caulk interior windows on west side.
Workorder #01-5064-177673-72
2. Replace window seals on the west windows.
Workorder #01-5064-177673-72
3. Paint metal pan ceilings in 1967 addition.
Workorder #01-5064-177857-67
4. Repair magnetic door holders to fire panel 3 ea.
Workorder #01-5064-177678-73
5. Repair crack in tile block wall center elevator.
Workorder #01-5064-177681-60

EXTERIOR

1. Replace wood trim on north tank shed west side of building.
Workorder #01-5064-177679-71
2. Tuckpoint brick where required and seal app. 80 SF.
Workorder #01-5063-014398-51
3. Trim trees and shrubs on south side of Wiseman hall.
Workorder #01-5063-014399-55
4. Backfill around low areas on east side where water is trapped behind sidewalks.
Workorder #01-5063-014398-51
5. Paint exterior metal doors, apply etch and prime at room 161.
Workorder #01-5064-177857-67
6. Clean all roof drains app 10 drains.
Workorder #01-5064-177857-67
7. Seal the seam on all the gravel stop on fifth floor.
Workorder #01-5064-177678-73
8. Repair and replace the wall cap below the east wall second window.
Workorder #01-5063-014398-51
9. Repair and/or replace sidewalks in front of the building.
Workorder #01-5063-014398-51
10. Repair the chain linked gate hinges at the west elevator.
APO responsibility
11. Repair the chain linked fence northwest of the east loading dock.
Workorder #01-5063-014398-51
12. Install area drainage on the north side of the building backfill with pea gravel and tie to the northeast drain at the east loading dock.
Workorder #01-5063-014398-51
13. Shim gas meter and/or raise meter pad to support meter.
APO responsibility
14. Clean concrete overhang in the front of the building and seal after roof replacement.
Workorder #01-5063-014398-51
15. Clean all intake louvers.
Workorder #01-5064-177857-67
16. Clean and paint metal sheds and docks.
Workorder #01-5064-177681-60
17. Repair gravel stop leaks onto brick walls at second floor level.
Workorder #01-5064-177678-73
18. Repair spalling areas and cracks on docks and seal.
Workorder #01-5063-014398-51

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 157 & #363 FACILITY NAME: WISEMAN HALL and CANCER CENTER
 DATE: 07/30/95 INSPECTOR: JAO
 YEAR CONSTRUCTED: 1960, ADDITION IN 1967 AND 1980
 GROSS SQ FT: 113,508 NET SQ FT: 81,803
 REPLACEMENT COST \$ 18,756,000 *

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	11.11	2,083,792	0.89	1,854,575
Columns and Beams	9.95	1,866,222	0.89	1,660,938
Exterior Walls	5.89	1,104,728	0.75	828,546
Windows & Doors	1.59	298,220	0.63	187,879
Roofing	3.89	729,608	0.50	364,804
Partitions & Drs.	7.49	1,404,824	0.82	1,151,956
Wall Finishes	3.16	592,690	0.68	403,029
Floor Finishes	4.86	911,542	0.67	610,733
Ceilings & Finish	5.08	952,805	0.44	419,234
Conveying	3.77	707,101	0.67	473,758
Plumbing	15.63	2,931,563	0.63	1,846,885
Heating	6.20	1,162,872	0.67	779,124
Cooling & Vent.	8.40	1,575,504	0.88	1,386,444
Elec. Ser. & Dist	1.23	230,699	0.70	161,489
Lighting & Power	8.40	1,575,504	0.67	1,055,588
Safety Standards	3.36	630,202	0.73	460,047
TOTALS	100.01	18,756,000	0.73	13,645,029

III. BUILDING RATING SUMMARY

Overall Building Rating = 73%

* Replacement Cost assigned January 1994 by The Office of University Resource Planning & Institutional Analysis without the furnishings and fixed equipment allocation.

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

FOUNDATIONS

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Footings:			
Individual Footings & Piers _____	[X]	[]	[]
Continuous Footings _____	[X]	[]	[]
Grade Beams <u>MISC. LOCATIONS & BETWEEN FIRST FLOOR COLUMNS</u>	[]	[X]	[]
Piles _____	[X]	[]	[]
Caissons <u>UNDER ALL BUILDINGS AT COLUMN LOCATIONS</u>	[]	[X]	[]
b. Foundation Wall Materials:			
Steel _____	[X]	[]	[]
Concrete Cast-in-place <u>PERIMETER GRADE BEAMS</u>	[]	[X]	[]
Concrete Block _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Waterproofing and Underdrain:			
Coating <u>NOT VISIBLE</u>	[]	[X]	[]
Membrane _____	[X]	[]	[]
Board _____	[X]	[]	[]
Drain Tile _____	[X]	[]	[]
d. Slab on Grade (floor):			
Plain _____	[X]	[]	[]
Reinforced <u>FIRST FLOOR</u>	[]	[]	[X]
e. Special Substructures:			
<u>PARTIAL TUNNEL FOR STEAM AND ACID NEUTRALIZATION TANK</u>	[]	[X]	[]

B. COMMENTS:

- 1 BASIC STRUCTURAL COMPONENTS APPEAR TO BE IN GOOD CONDITION
- 2 NOTICED SOME SETTLEMENT (APP 1") IN HALL FLOOR ADJACENT TO ROOM 101A THIS APPEARED TO BE LOCALIZED WHERE THE 60 AND 67 BUILDINGS MEET.

C. COMPONENT RATING: (\$1,417,414) (89 %) = \$ 1,261,498
 Possible Condition Component
 Value Multiplier Value

COLUMNS AND BEAMS

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. Columns and Beams:

	N/A	Sat	Att
Concrete-in-place <u>THROUGH ORIGINAL BUILDING AND ADDITIONS</u>	[]	[X]	[]
Precast Concrete _____	[X]	[]	[]
Steel _____	[X]	[]	[]
Steel Fireproofing _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other <u>GRADE BEAMS SPAN BETWEEN COLUMNS</u>	[]	[X]	[]

b. Floors:

Concrete Slab <u>WAFFLE TYPE ON ALL ADDITIONS AND EXISTING</u>	[]	[X]	[]
Precast Slab _____	[X]	[]	[]
Metal Deck _____	[X]	[]	[]
Metal Deck w/concrete fill _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Roof System:

Flat <u>LESS THAN 1/4" PER FOOT</u>	[]	[X]	[]
Pitched _____	[X]	[]	[]
Concrete <u>REINFORCED WAFFLE TYPE</u>	[]	[X]	[]
Steel _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1 WHERE VISIBLE, ELEMENTS APPEARED IN GOOD CONDITION.

C. COMPONENT RATING: (\$1,269,421) (89 %) = \$ 1,129,785
 Possible Condition Component
 Value Value Multiplier Value

PARTITIONS & DOORS

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. Partition Framing:

	N/A	Sat	Att
Concrete Block <u>PERIMETER BACKING AND INTERIOR WALLS</u>	[]	[X]	[]
Glazed Block <u>IN HALLS AND SOME LABS AND RESTROOMS</u>	[]	[]	[X]
Wood Stud _____	[X]	[]	[]
Metal Stud <u>SOME ROOMS THAT WERE SPLIT</u>	[]	[X]	[]
Structural Tile _____	[X]	[]	[]
Rated _____	[X]	[]	[]
Other _____	[X]	[]	[]

b. Special partitions and Walls:

Toilet _____	[]	[X]	[]
Screen Walls _____	[]	[X]	[]
Gate _____	[X]	[]	[]

c. Wall Material:

Plaster _____	[X]	[]	[]
Plaster Board <u>IN ROOMS THAT WERE SPLIT</u>	[]	[X]	[]
Glass <u>STORE FRONTS IN SOME AREAS</u>	[]	[X]	[]
Plywood _____	[X]	[]	[]
Paneling _____	[X]	[]	[]
Trim & Wainscot _____	[X]	[]	[]
Tile/Glazed <u>IN SOME RESTROOMS</u>	[]	[X]	[]
Other <u>GLAZED BLOCK</u>	[]	[X]	[]

d. Interior Doors & Frames:

Met Door/Met Frame _____	[]	[X]	[]
Wood Door/Wood Frame _____	[X]	[]	[]
Wood Door/Metal Frame _____	[]	[]	[X]
Glazing _____	[]	[X]	[]
Rollup _____	[X]	[]	[]
Sliding _____	[X]	[]	[]
Other <u>TWO 6'x 7' FOR EQUIPMENT ACCESS</u>	[]	[X]	[]

e. Hardware:

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

B. COMMENTS:

1 SOME DOORS AND/OR DOOR HARDWARE NEED ADJUSTED OR REPLACED TO CLOSE PROPERLY, DOORS NOTED 231 (RACKED), 210 & 210A.

2 NOTICED THAT SOME GLAZED BLOCK WALLS HAVE SHEAR CRACKS WHERE THEY FORM A FIRE WALL AND WERE INSTALLED TO THE UPPER DECK, SINCE THEN THE CONCRETE HAS SHRUNK AND STRESSED THE BRITTLE GLAZED BLOCK, THIS WAS ON THE FIRST FLOOR NEXT TO THE CENTER ELEVATOR AND IN THE HALL NEXT TO ROOM N201M AT THE COLUMN.

C. COMPONENT RATING: (\$ 955,574) (82 %) = \$ 783,571
 Possible Condition Component
 Value Value Multiplier Value

WALL FINISHES

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint ON BLOCK _____	[]	[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 _____	[X]	[]	[]
i. Decoration _____	[X]	[]	[]
j. Glass _____	[]	[X]	[]
k. Other _____	[X]	[]	[]

B. COMMENTS

NONE

C. COMPONENT RATING: (\$ 403,153) (68 %) = \$ 274,144
 Possible Condition Component
 Value Value Multiplier Value

CEILING AND FINISHES

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. System Type:	N/A	Sat	Att
Exposed _____	[]	[X]	[]
Applied to Structure _____	[X]	[]	[]
Suspended <u>DRYWALL, METAL PAN AND MINERAL FIBER</u>	[]	[]	[X]
 b. Materials:			
Drywall _____	[]	[X]	[]
Plaster _____	[X]	[]	[]
Mineral Fiber Board _____	[]	[X]	[]
Metal Pan _____	[]	[]	[X]
Luminous Panels _____	[X]	[]	[]
Other _____	[X]	[]	[]
 c. Finishes:			
Paint _____	[]	[X]	[]
Fabric _____	[X]	[]	[]
Prefinished _____	[]	[X]	[]
Other _____	[X]	[]	[]
 d. Openings & Inserts:			
Air Distribution _____	[]	[X]	[]
Lighting Fixtures _____	[]	[X]	[]
Access Panels _____	[]	[X]	[]
Skylights _____	[X]	[]	[]
Fire Protection _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1 THE METAL PAN CEILING IN THE HALLS ARE DENTED FROM REINSTALLATION AFTER MAINTENANCE WORK AND SHOULD BE REPLACED WITH MINERAL FIBER BOARD.

C. COMPONENT RATING: (\$ 648,106) (44 %) = \$ 285,167
 Possible Condition Component
 Value Value Multiplier Value

CONVEYING

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. Elevators:

				N/A	Sat	Att
Number	<u>THREE</u>	<u>ONE</u>	<u>ONE</u>	<u>ONE</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Type	<u>OTIS</u>	<u>OTIS</u>	<u>OTIS</u>	<u>OTIS</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Speed	<u>100</u>	<u>75</u>	<u>125</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Capacity (lbs)	<u>3000</u>	<u>4000</u>	<u>2500</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dimensions	<u>56" x 80"</u>	<u>76" x 64"</u>	<u>51" x 80"</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Door Operation:						
Center	<u>X</u>		<u>X</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
To Side		<u>X</u>			<input checked="" type="checkbox"/>	<input type="checkbox"/>

b. Lifts and Hoists:

Number	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c. Moving Stairs and Walks:

Number	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d. Conveyors:

Number	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

e. Pneumatic Tubes:

Number	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. COMMENTS:

1 THE OTIS ELEVATOR IN THE CENTER OF THE BUILDING HAS BEEN RECOMMENDED FOR REPLACEMENT PER CONTROL NUMBER 1570.

C. COMPONENT RATING: (\$ 480,977) (67 %) = \$ 322,255
 Possible Condition Component
 Value Value Multiplier Value

MECHANICAL/PLUMBING

FAC # 157/363 DATE 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. Services Available:	N/A	Sat	Att
Cold Water <u>6" INTO ROOM 149B AND 165</u>	[]	[X]	[]
Hot Water <u>2 EA 2" IN ROOM 201M AND 520M</u>	[]	[X]	[]
Acid Waste <u>TO TANKS IN 250M AND THE TUNNEL ROOM 1004M</u>	[]	[X]	[]
Oxygen <u>SEVERAL CAGES ON NORTHWEST SIDE OF BUILDING</u>	[]	[X]	[]
Natural Gas <u>FROM WEST SIDE OF BUILDING</u>	[]	[X]	[]
Vacuum <u>PUMPS LOCATED IN ROOMS 200M AND 520M</u>	[]	[X]	[]
Distilled Water <u>STILL IN 520M AND TANKS IN 201M</u>	[]	[X]	[]
Compressed Air <u>LOCATED IN 520M AND 200M</u>	[]	[X]	[]
Other <u>LOW PRESSURE STEAM IN 520M TO THIRD AND FOURTH</u>	[]	[X]	[]
b. Piping & Fittings:			
Cast Iron <u>ON SANITARY AND STORM</u>	[]	[X]	[]
Copper Piping <u>ON VACUUM, LAB AIR, HOT & COLD WATER</u>	[]	[X]	[]
Copper Tubing <u>ON CONTROL AIR</u>	[]	[X]	[]
Plastic <u>ON DI WATER</u>	[]	[X]	[]
Steel <u>ON CHILLED, HEATING, GAS, FIRE AND STEAM SERVICES</u>	[]	[X]	[]
Glass <u>ON ACID WASTE</u>	[]	[X]	[]
Other _____	[]	[X]	[]
c. Water Heaters:			
Electric _____	[X]	[]	[]
Gas _____	[X]	[]	[]
Oil _____	[X]	[]	[]
Steam Converter <u>INSTANTANEOUS ROOM 201M AND 520M</u>	[]	[X]	[]
Other _____	[X]	[]	[]
d. Drainage:			
Storm Drains <u>6", 8", 12" FROM ROOF AREAS</u>	[]	[X]	[]
Sanitary Drainage <u>6" TO EAST SIDE OF BUILDING</u>	[]	[X]	[]
Combined Storm/San. _____	[X]	[]	[]
Floor Drains <u>IN RESTROOMS, LABS AND EQUIPMENT ROOMS</u>	[]	[X]	[]
e. Fixtures:			
Water Closets <u>23</u>	[]	[X]	[]
Urinals <u>6</u>	[]	[X]	[]
Lavatories <u>23</u>	[]	[]	[X]
Showers <u>6</u>	[]	[X]	[]
Kitchen Sinks <u>1</u>	[]	[X]	[]
Service Sinks <u>6</u>	[]	[X]	[]
Drinking Fountains _____	[]	[X]	[]
Electric Water Coolers <u>6</u>	[]	[X]	[]
f. Sprinkler Systems:			
Wet _____	[X]	[]	[]
Dry _____	[X]	[]	[]
g. Standpipe Systems:			
Wet _____	[]	[X]	[]
Dry _____	[X]	[]	[]
Valves <u>LOCATED IN STAIR WELLS</u>	[]	[X]	[]
Hose Cabinets <u>NEXT TO STAIR WELLS</u>	[]	[X]	[]

B. COMMENTS:

- 1 FAUCETS IN SEVERAL RESTROOMS & FAUCETS IN SEVERAL LABS WERE LEAKING AND NEED REPAIRED.
- 2 GAS METER PAD SETTLED AND NEEDS RAISED OR SHIMMED.
- 3 REPAIR WATER METER IN ROOM 165.

C. COMPONENT RATING: **(\$1,994,075)** **(63 %) = \$ 1,256,267**
 Possible Condition Component
 Value Value Multiplier Value

MECHANICAL/HEATING

FAC # 157/363 DATE: 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. Heat Source:	N/A	Sat	Att
Central Plant Steam <u>6" HPS LINE FROM SOUTHEAST CORNER</u>	[]	[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 <u>HPS REDUCED TO MPS AND DESUPERHEATED IN ROOM 200M</u>	[]	[]	[X]
Hot Water <u>MPS TO HOT WATER CONVERTER IN 200M, 201M & 520M</u>	[]	[]	[X]
Air _____	[]	[X]	[]
<u>Multizone IN ROOM 200M</u>	[]	[X]	[]
<u>Dual Duct IN ROOM 1004M</u>	[]	[X]	[]
<u>Terminal Reheat ON CONSTANT VOLUME BOXES AC-1 & 2</u>	[]	[X]	[]
<u>Variable Volume AC-1 CONVERTED</u>	[]	[X]	[]
Other _____	[X]	[]	[]

c. Space Equipment:			
Radiators _____	[X]	[]	[]
Convectors <u>AT WINDOWS</u>	[]	[X]	[]
2-Pipe Fan Coil <u>AT MOST ENTRANCES</u>	[]	[X]	[]
Unit Heaters <u>BOTH STEAM AND HOT WATER</u>	[]	[X]	[]
Other _____	[X]	[]	[]

d. Control Type:			
Pneu _____	[]	[X]	[]
Electric _____	[]	[X]	[]
DDC _____	[]	[X]	[]
Manual Valves _____	[X]	[]	[]

B. COMMENTS:

- 1 THE DESUPERHEATER CONDENSATE PUMPS IN ROOM 200M ARE LEAKING.
- 2 THE CONDENSATE PUMPS IN ROOM 201M AND 520M ARE LEAKING.
- 3 THE PRESSURE REDUCING STATIONS IN ROOMS 201M AND 200M ARE BEING REBUILT AND MUCH OF THE CONDENSATE PIPING IN ROOM 200M IS BEING REPLACED PER PROJECT NUMBER 5016-001677.
- 4 COMPLETE REPAIRS ON THE HOT WATER CONVERTERS AND PUMP CIRCULATION SYSTEM

C. COMPONENT RATING: (\$ 790,996) (67 %) = \$ 529,967
 Possible Condition Component
 Value Value Multiplier Value

COOLING & VENTILATING

FAC # 157/363 DATE: 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

a. System:	N/A	Sat	Att
Type <u>VAV, CAV, DDHV AND MZCV</u>	[]	[X]	[]
Capacity <u>735 TONS TOTAL</u>	[]	[X]	[]
b. Chillers:			
Centrifugal <u>200 TON 200M, 300 TON 201M, 190 R-113 TON 520</u>	[]	[X]	[]
Reciprocating <u>45 TON R-22 520M WITH HOT WATER RECOVERY</u>	[]	[X]	[]
Absorption _____	[X]	[]	[]
c. Cooling Towers:			
Type <u>THREE MARLEY'S</u>	[]	[X]	[]
Capacity <u>AT 200, 300 AND 190 TON</u>	[]	[X]	[]
d. Condensers: 45 TON			
e. Space Equipment:			
Direct Expansion -			
Window units _____	[X]	[]	[]
Thru-the-wall _____	[X]	[]	[]
Single zone <u>IN VARIOUS ROOMS</u>	[]	[X]	[]
Single zone con. vol. <u>IN VARIOUS ROOMS</u>	[]	[X]	[]
Other _____	[X]	[]	[]
Air/Water -			
2-pipe fan coil _____	[]	[X]	[]
Unit ventilators <u>MAKE-UP AIR HANDLER RM 520M & 200M</u>	[]	[X]	[]
Terminal reheat <u>ON AC-1 & 2</u>	[]	[X]	[]
Variable volume <u>AC-1</u>	[]	[X]	[]
Constant volume <u>TWO RM 201M, ONE RM 200M, TWO RM 520M</u>	[]	[X]	[]
Dual Duct <u>IN ROOM 1004M</u>	[]	[X]	[]
Multizone <u>IN ROOM 201M</u>	[]	[X]	[]
f. Special Systems:			
Type <u>CONSTANT VOLUME HEAT RECOVERY OF EXHAUST AIR RM 520M</u>	[]	[X]	[]
Capacity <u>120 GPM</u>	[]	[X]	[]
Type <u>45 TON HOT WATER HEAT RECOVERY COMPRESSOR RM 520M</u>	[]	[X]	[]
Capacity <u>45 TON</u>	[]	[X]	[]
g. Control Systems:			
Pneu _____	[]	[X]	[]
Electric _____	[]	[X]	[]
Electronic _____	[]	[X]	[]
h. Fans:			
Exhaust <u>ON I250M SPACE AND ROOF'S FOR HOOD EXHAUST</u>	[]	[X]	[]
Recirculating <u>ON AUH'S</u>	[]	[X]	[]

B. COMMENTS:

- 1 THE 200 AND 300 TON R-22 CHILLERS WERE INSTALLED IN 1994, WHILE THE 190 TON R-113 AND 45 TON R-22 WERE INSTALLED IN THE 1979 ADDITION.
- 2 IN 1994 SEVERAL MODIFICATIONS WERE COMPLETED ON ALL FOUR FLOORS INCLUDING COIL REPLACEMENT, PIPING UPGRADES, DUCT MODIFICATIONS, CONTROL DDC UP GRADES AND TESTING AND BALANCING OF THE COMPLETE HVAC AND EXHAUST AIR SYSTEM SERVICING LABS AND HOODS.
- 3 SEAL HP DUCT LEAKS IN ROOM 520M.
- 4 ALL OUTSIDE AIR INTAKES WERE PARTIALLY PLUGGED AND ALL NEED CLEANED.

C. COMPONENT RATING: (\$1,071,672) (88 %) = \$ 943,071
 Possible Condition Component
 Value Value Multiplier Value

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 157/363 DATE: 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

(a) Service:

Substation BUCKEYE 103/301 CIRCUITS

Primary Voltage 13,800 VOLTS

Transformer:

Manufacture	Type	KVA	Secondary Voltages
<u>GE</u>	<u>OIL</u>	<u>750</u>	<u>208/120 RM 1004M</u>
<u>GE</u>	<u>DRY</u>	<u>500</u>	<u>480/277 ROOF S/W</u>
<u>HEVIDUTY</u>	<u>DRY</u>	<u>750</u>	<u>208/120 RM 520M</u>

(b) Distribution System:

Panelboard (type) CIRCUIT BREAKER

Voltage 208/120

Amperage VARIES BETWEEN 200 AND 400 AMPS

Conduit STEEL

Conductor COPPER

Wire (type) VARIES

Armored Cable ON LIGHT DROPS

Other UNINTERRUPTED POWER SUPPLY IN ROOM 201M

(c) Emergency System:

General or (type & capacity) DIESEL 250 KW RM 1032M

General or (type & capacity) DIESEL 275 KW RM 520M

B. COMMENTS:

1 THE 500 KVA TRANSFORMER ON THE ROOF SERVES THE SPECIAL EQUIPMENT IN THE OPERATING ROOMS ON THE FIRST FLOOR.

2 ALL MECHANICAL EQUIPMENT IS OPERATED OFF 208 VOLT POWER.

3 THE TWO GENERATORS HAVE FUEL OIL TANKS WHICH ARE BURIED AND REQUIRE YEARLY TESTING AND DOCUMENTATION.

C. COMPONENT RATING: (\$ 156,923) (70 %) = \$ 109,846
Possible Condition Component
Value Value Multiplier Value

BUILDING PERIMETER EVALUATION

FAC # 157/363 DATE: 07/30/95 INSPECTOR: JAO

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
1. Building Access:			
Driveway <u>NORTHWEST ASPHALT</u>	[]	[X]	[]
Loading Dock <u>TWO OF CONCRETE AND CONCRETE BLOCK</u>	[]	[X]	[]
Sidewalks			
Front <u>CONCRETE</u>	[]	[]	[X]
Side <u>EAST CONCRETE</u>	[]	[X]	[]
Rear <u>NORTH CONCRETE</u>	[]	[X]	[]
Steps			
Front _____	[X]	[]	[]
Side _____	[X]	[]	[]
Rear <u>STEPS AND MATERIAL RAMP</u>	[]	[X]	[]
Handicap Ramp _____	[X]	[]	[]
2. Lawn and Landscaping:			
Lawn <u>NORTH, SOUTH AND EAST</u>	[]	[]	[X]
Shrubs <u>SOUTH</u>	[]	[]	[X]
Trees <u>SOUTH</u>	[]	[]	[X]
Undesirable Insect _____	[X]	[]	[]
Bedding Material <u>NONE / REQUIRED</u>	[]	[]	[X]
Watering System <u>EXTERIOR HOSE BIBBS</u>	[]	[]	[X]
3. General Site Information:			
Signage _____	[]	[X]	[]
Address Identification _____	[]	[X]	[]
Security Lights <u>ON WALLS AND ROOF</u>	[]	[X]	[]
Street Lights <u>ON 12th AVE</u>	[]	[X]	[]
Drainage _____	[]	[]	[X]
Storm Drains <u>AT DOCKS AND EAST SIDE</u>	[]	[X]	[]

B. COMMENTS:

- 1 CONCRETE WALK ON SOUTH SIDE FRONT NEEDS REPAIRED IN SOME SECTIONS.
- 2 LAWN NEEDS RESEDED ON SOUTHEAST CORNER AND TREES AND SHRUBS NEED TRIMMED.
- 3 THE LEAKING HOSE BIBB ON THE SOUTH WALL NEEDS REPAIRED.
- 4 LOW AREAS ON THE NORTH, SOUTH AND EAST NEED BACKFILLED OR GRADED TO THE EXISTING STORM DRAINS, THE NORTH SIDE NEEDS PERFORATED DRAIN TILE INSTALLED TO THE GUTTER DRAIN OR THE STORM DRAIN AT THE NORTHEAST.
- 5 GATE AT WEST ELEVATOR AND FENCE IN NORTHWEST CORNER NEEDS REPAIRED.

The Ohio State University
Department of Physical Facilities
BUILDING AUDIT METHODOLOGY

1. BUILDING AUDIT PROGRAM OBJECTIVE

To provide a building-by-building inventory, including maintenance deficiencies that currently exist, for the 172 OSU buildings that the Department of Physical Facilities is budgetary responsible. These audits will be used to establish repair and renovation projects, budget cost estimates for these projects, and overall levels of required maintenance funding.

2. BUILDING AUDIT APPROACH

A five-step procedure is used to meet the program objectives:

1. Collect Historical and Inventory Data on each building.
2. Interview Building Occupants.
3. Perform a Building Inspection.
4. Complete Building Evaluation Forms.
5. Issue Written Report.

3. DATA ORGANIZATION

The data collected is stored by hard copy with field notes in a building file established for each building. The report data is being stored in a database program that allows retrieval of specific data as it is needed. The "Building Evaluation" forms contain ratings for the condition of each building component and a description of any deficiencies for those components. The "Building Information" sheets provide data on the utilities to the buildings and the type of systems in each building.

4. COST ESTIMATES

Costs are for budgeting purposes only and are based on The Means Standard Construction Cost data, auditor experience, industry sources and OSU project cost data. Costs are reported current to the year of the audit. The building component values assigned in the "Building Evaluation" forms are not cost estimates. These values are calculated from the replacement cost provided by The Office of University Resource Planning & Institutional Analysis for each OSU building. This building replacement cost is allocated to each building component to provide an estimated value for each component. Project cost estimates will exceed the building component values in most situations because of tear-out, handling and site limitations that occur in building component replacement projects.

5. DATA USAGE

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

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

6. LIMITATIONS

- (1) All inspections are visual and do not include physical tests,

instrumentation or metering measurements, sampling, or monitoring.

(2) Only random typical offices or laboratories are entered. Typical spaces are deemed to be representative of average conditions throughout each building.

(3) The scope of the analysis does not include complete OSHA, energy, or physical impaired access study. Buildings and components are inspected for condition and general safety requirements rather than specialized code conformance.

(4) It is assumed that the buildings inspected were approved by the State of Ohio Division of Factory and Building Inspection at the time of construction. The recommendations listed in the reports are not an attempt to bring these existing buildings up to present day code standards. Rather, the intent is to eliminate obvious problems and to upgrade the buildings in a reasonable manner in regard to occupant safety.

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

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

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

(b) Includes exterior building walls and attached items.

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

(d) Blinds, drapes, light bulbs, and movable furniture are not included.

(e) Fixed equipment inside the buildings that is installed and maintained by a specific academic department or using agency is not included.

(f) Utility lines supplying the buildings are not included.

(g) The program needs of the using department are assumed to be satisfied. No consideration has been given to anticipate any changes in current occupant space needs.

ABBREVIATIONS

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

APPENDIX

Building Floor Plans

C-1 Building Space Assignments