

FACILITY AUDIT REPORT

FONTANA LABORATORY

#151

APRIL 30, 1998

FONTANA LABORATORY

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Division of Resource Management

FONTANA LABORATORY
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EXECUTIVE SUMMARY FOR FONTANA LABORATORIES

Fontana Laboratories now houses laboratories of the Departments of Materials Science and Engineering and Chemical Engineering. Fontana Laboratory was constructed in 1963/64 and originally occupied in October of 1964 by Metallurgical and Mineralogical disciplines with a gross area of 32,604 SF. The four story building with basement was built for classrooms, offices and laboratories. Laboratories and rooms have been remodeled several times over the years to meet the changing requirements of the department. Fontana Laboratory was added to the east side of Koffolt Laboratory. The halls on all floors are common and some utilities are shared between the two buildings. A larger more efficient chiller was installed to supply chilled water to Fontana Laboratories and Koffolt Lab. Several of the building components are approaching the end of their expected life cycle and will need to be replaced over the next five to ten years. Within the next five years the roof, windows, chiller, DDHV air handling unit, fan coil units, controls and some electrical distribution equipment will need to be replaced. The building is due for a complete renovation within the next ten years.

PROPOSED MAINTENANCE PROJECTS

FONTANA LABORATORIES #145

A. Corrective Maintenance Projects:

		Control No
1. <i>Replace the ceiling tiles.....</i>	\$ 5,350	1737
2. <i>Clean and seal the brick and limestone.</i>	\$ 14,000	3455
3. <i>Replace the galvanized domestic hot water service.</i>	\$ 25,000	3454
4. <i>Replace 180' of galvanized cold water piping.</i>	\$ 15,500	3318
Sub Total.....	\$ 59,850	

B. Building Improvement/Addition Projects:

1. <i>Replace 99 exterior windows.</i>	\$ 85,580	1738
2. <i>Install a dedicated isolated ground circuit in 37M.</i>	\$ 10,000	3456
Sub Total.....	\$ 95,580	

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

1. <i>Replace the DDHV air conditioning unit in room 501M and the DDHV boxes in the rooms.</i>	\$ 315,000	3457
2. <i>Replace the BUR roofs.</i>	\$ 45,600	1736
3. <i>Replace the 210 Ton R-11 chiller, pumps and tower.</i>	\$ 345,000	1739
4. <i>Replace the 16 fan coil air conditioned units.</i>	\$ 45,500	1740
5. <i>Replace the steam distribution piping.</i>	\$ 25,000	3458
6. <i>Replace miscellaneous exhaust fans.</i>	\$ 30,000	3459
7. <i>Replace the balance of the galvanized water distribution piping.</i>	\$ 71,500	3460
8. <i>Replace the hall metal pan ceilings with aluminum grid.</i>	\$ 16,000	3461
Sub Total.....	\$ 893,600	
Total Cost for all Projects.....	\$ 1,049,030	

**RENOVATION PROJECTS IN PROGRESS OR COMPLETED SINCE THE
LAST AUDIT**

Projects:

Control No

1. *Renovate basement rooms for Electron Optics.*\$ 665,000 315-95-913

GENERAL BUILDING INFORMATION

FONTANA LABORATORY #151

BUILDING ADDRESS: *116 WEST 19th AVENUE*

GROSS SQ. FT.: *32,604*

NET ASSIGNABLE SQ. FT.: *28,997*

MECHANICAL/CUSTODIAL AREA SQ. FT.: *3,495*

YEAR OF CONSTRUCTION: *1963/64*

YEAR OF LAST RENOVATION: *none*

NUMBER OF STORIES/BASEMENT: *four stories with basement and roof penthouse*

AIR CONDITIONING (Percentage): *80%*

CURRENT USE: *The Department of Materials Science and Engineering*

TYPE OF CONSTRUCTION: *Reinforced Concrete Structure with Masonry Skin*

ESTIMATED REPLACEMENT COST: *\$ 4,832,000 **

COST PER GROSS SQUARE FEET: *\$148.20*

WHEELCHAIR ACCESSIBILITY: *From the MacQuigg Laboratory corridor and elevator to the corridors of this building.*

OVERALL BUILDING CONDITION: *Satisfactory ***

NUMBER OF EXIT STAIRWAYS: *One (1)*

NUMBER OF OTHER EXITS: *One (1)*

AREA SHOP RESPONSIBILITY: *Northeast*

* *Replacement Cost assigned September 1997 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

FONTANA LABORATORY #151

HEATING:

Source – *Power plant*

Type Heating System – *Steam from Koffolt Lab*

Main Steam Feed (Line size, valve location) – *4” MPS from room 28M Koffolt*

Building Htg. Water (line size, valve location) - *none*

VENTILATION SYSTEM: *Air Handling Unit with powered exhaust*

COOLING:

BLDG. % 80, Chiller: *Trane 210 Ton, R-11, 1963*

Window Units: *none*, Thru-the-wall: *none*, Direct expansion units: *none*

HVAC CONTROL SYSTEM: *Electric and pneumatic controls with DDC upgrade*

ELECTRIC:

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

107/307 1000 13,200/ 208/120 feed from Koffolt Lab to room 37M

PLUMBING SERVICES:

Water (size, valve location) – *6” room 37M, 4” to standpipe*

Gas (size, valve location) – *1.25” from room 28M Koffolt*

Domestic Hot Water (size, valve location) – *1.25” DHWS, .75” DHWR from room 28M Koffolt*

Compressed Air (size, location) – *1.5” from room 28M Koffolt*

SEWERS:

Storm - *1@6”*, Sanitary - *1@6”*, Combined Storm/San- *on exterior*

METERS:

Gas (size, location) – *N/A*

Water (size, location) – *N/A*

Electric (location) - *room 9M of Koffolt Lab*

ALARM SYSTEMS:

Fire Alarm, Remote Panel Location at Room *43A in MacQuigg Lab*

Fire Pump @ 750 GPM, Riser , Pump Location, Room *150F MacQuigg*

Sprinkler, Valve Location Room , 100%, Partial, Limited

Horns/Strobes, Bells in Halls, Rooms

Other Alarms –

ELEVATORS:

Number-*none*, Type (passenger, freight)-
Manufacturer – *Size-*

EMERGENCY GENERATOR:

Size- *none*

ASBESTOS SURVEY (1986): *Asbestos containing materials were identified in the penthouse in some hot water pipe and heat exchanger insulation.*

FONTANA LABORATORY NARRATIVE

HISTORY

Fontana Laboratory now houses laboratories of the Departments of Materials Science and Engineering and Chemical Engineering. Fontana Laboratory was constructed in 1963/64 and occupied in October 1964 by Metallurgical and Mineralogical disciplines with a gross area of 32,604 GSF. Metallurgical and Ceramic Engineering groups were merged into the Department of Materials Science and Engineering. The Mineralogical laboratories have since been moved. The four story building with basement and roof penthouse was originally built for classrooms, offices and laboratories. Fontana Laboratory was originally built as an extension to Koffolt Laboratory. In 1965/66 MacQuigg Laboratory was constructed on the northeast corner connecting Fontana Lab to Watts Hall. Fontana Lab was modified to connect all floors and some services to MacQuigg Lab. Laboratories and rooms have been remodeled several times over the years to meet the changing requirements of the building.

The building appears to be functioning as designed, at this time, and has held up well over the 34 years since built. However, many building components are approaching the end of their expected life cycle and will need to be replaced over the next five to ten years. These items when completed will protect and enhance the building performance and create a satisfying visual environment for students, faculty, staff and visitors.

A review of the work orders indicated that there are a normal number of emergency and maintenance calls to the building.

In an interview with the building coordinator, it was learned that the occupants are basically satisfied with the overall condition and performance of the building systems. There is great concern that the aging air handling and electrical systems will be able to meet present and future research requirements. Other concerns are with the lab sinks and hot water supplies in the building.

Occupancy of the building, reported by The Office of University Resource Planning & Institutional Analysis in the C-1 Building Space Assignment Report dated September 1997 for a Net Assignable Area of 28,997 SF, is as follows; Sponsored Research 24.4%, Department Research 24.3%, Instruction/support 10.8%, Administrative and Staff offices 9.8%, Classrooms 2.1%, Mechanical 12.1% Custodial/Toilet 0%, and Circulation 16.6%.

PRIMARY SYSTEMS

The structural components of this building consist of reinforced concrete perimeter and interior spread footers and foundation walls to the first floor and reinforced concrete columns and beams that support the one way concrete floors and roof.

These form the basic skeletal components of this four-story building with basement. The penthouse consists of steel columns and beams that support the steel roof joists and metal deck roof structure.

There are no major signs of settlement or movement in the building foundation or structural columns and supports.

A brick veneer was installed on concrete block to form the exterior walls. Openings in the brick for window walls and entrance doors are accented with limestone or brick that form the head, sill and jambs. Cut limestone panels are used for wall, entrance and roof trim. The penthouse has insulated metal siding.

The exterior masonry brick is in good condition. Expansion joints were originally installed between the three buildings and all appear to be in good condition. The brick and limestone needs to be cleaned and sealed. The penthouse metal siding needs to be painted.

The single glazed windows are aluminum double hung types that are installed in the aluminum window wall with serpentine panels between windows. The window wall extends from the first floor to the roof trim. Some of the caulking has dried and shrunk in head, sill and jamb joints of several windows and should be touched up. The aluminum double hung windows need to be replaced with thermally insulated window units. The south main entry double door is aluminum with glass and is in fair condition. The aluminum stair door to the southeast is in fair condition.

The lower roof area of the building is of the concrete deck type, with light weight fill, insulation board, and built up roof installed with hot tar and gravel. The penthouse roof consist of steel beams and purlins with a steel deck, insulation and a built up roof installed with hot tar and gravel. All of the roofs are 34 years old and need to be replaced. The aluminum cap and counterflashing around the perimeter and the gravel stop on the penthouse roof is in fair condition but should be replaced with the roof.

INTERIOR SYSTEMS

The reinforced concrete floors and columns of this building are enclosed with concrete block or concrete block and 1" clay ceramic glazed blocks that form interior walls, halls, rooms and stairwells. The majority of the rooms in the building have concrete block up to the ceiling. The main entrance has marble walls. Remodeled areas in the building are separated with metal studs and drywall. The partitions and walls are all in good to fair condition depending on the area. Some fine line cracking in tile walls has occurred at openings in the walls as expected. Some cracking in the east hall tile walls has occurred on two floors and needs to be repaired.

The majority of the doors in this building are wood doors in metal frames and are in good to fair condition. Steel fire doors in steel frames are used at mechanical rooms, halls to Koffolt Lab and the stairwell. The metal fire doors in this building are in fair condition. There are two aluminum store fronts at the main entry to rooms 141 and 143 with a single door and side windows. There is also an aluminum vestibule at the main entry with double doors and side windows. Some door and/or door hardware problems are showing up in maintenance calls.

The floors in this building are asbestos asphalt tiles, terrazzo, carpet in some offices and clear sealant in several labs. The equipment rooms have exposed concrete floors that have been sealed with a clear sealant. The floors throughout the building are in good condition and have been well maintained. The asbestos floors in the halls and some rooms should be removed and replaced if the building is remodeled. The stairs and landings are metal framed with concrete terrazzo fill and are in good condition. The main entry has a terrazzo surface to the hall.

The original ceilings in the building consisted of a suspended wood grid with 1x1 acoustical ceiling tiles or are exposed ceilings in most labs. The ceilings in remodeled areas of this building consist of a suspended aluminum 2x4 grid system with mineral fiber tiles. The 1x1 acoustical tile ceilings are in fair condition. Some ceiling tiles need to be cleaned or painted where roof and/or duct condensation leaks have occurred or have been soiled with dirt from diffusers. The hall ceilings should be replaced.

The partitions, doors, walls, and ceilings vary in their condition rating depending on the location in the building and what remodeling has been completed.

SERVICE SYSTEMS

The major service systems, domestic cold and hot water, standpipe system, natural gas, compressed air, vacuum, sanitary and acid waste and storm drainage all appeared to be in good to fair condition and functioning at this time. The plumbing drainage system did not appear to have any problems. Duriron and glass pipe drainage fittings were used on the acid waste drainage system. The acid waste system drains to the neutralization tank located in room 037M. The domestic cold and hot water piping appears to have copper pipe at the service end and is in good condition. The main water supply and standpipe system appears to be galvanized steel pipe that may need to be replaced within the next five to ten years as water flows diminish. The Domestic Hot Water system is connected to the central campus loop entering in room 03M and has a hot water return pump and piping. The piping for the domestic hot water systems did not appear to have any leaks at this time, but there was inadequate water pressure at the lab faucets on all of the floors. The galvanized hot water piping needs to be replaced. The gas and compressed air piping is black steel pipe and did not appear to have any problems.

The 4" HPS line that feeds Fontana Lab is tapped off of the Central High Pressure Steam loop that feeds Koffolt Lab. A 4" HPS line from room 03 in Koffolt Lab feeds HP steam to the pressure reducing station in room 539M that serves the heating systems in Fontana Lab. There was no desuperheater in the line after the pressure reducing station. Another 4" HPS line from room 539M in Fontana Lab feeds HP steam to the heating systems in MacQuigg Lab. The LPS steam in Fontana Lab feeds a heating hot water heat exchanger in room 539M that supplies wall convectors located on the outside walls at windows, fan coil units at entrances and unit heaters. The heating system was operating at the time of the site visits. The heating systems in the building are aging and approaching the end of their expected life cycle and need to be replaced.

An 1963 Trane 210 Ton, R-11, centrifugal chiller located in room 539M supplies the DDHV air handling unit, fan coil units in Fontana and Koffolt Labs and three CV air handling units also located in Koffolt Lab. Six inch chilled water piping ties the 210 ton chiller with the 300 ton chiller in MacQuigg Lab. A Marley cooling tower cools condensing water for the chiller. The DDHV air handling unit, chiller and 16 fan coil units are well past the end of their useful life and will require replacement in the next five years. The replacement chiller needs to be sized to complement the chilled water loop between the four buildings, any additional cooling loads and the building piping loop. Controls for the heating and cooling system are pneumatic and electric and have been tied into the modified DDC system that monitors the four attached buildings.

There are 33 exhaust fans located in the penthouse and in various rooms that remove air from restrooms, common areas, labs and hoods. Some lab hood supply air fans and the return air fan are also located in room 539M. The return air is a corridor return system with grills located on each floor.

ELECTRIC

The McCracken substation circuits number 107/307 feed the 1000 KVA 208/120 volt transformer located on the northeast side of the building in room 32M that supplies the electrical service to Koffolt and Fontana Laboratories. Switchgear located in room 37M feeds the MCC panel in room 539M and the lighting and power distribution panels located throughout the building. Panel sizes vary throughout the building depending on the load. At about 8.1 watts per square foot the building just has an adequate power supply in most circuits. Any addition of large equipment to Koffolt Laboratory or Fontana Laboratory would require an upgrade to the electrical transformer, feeds and distribution system. The switch gear in rooms 37M and 539M is 34 years old and past their expected life cycle and should be replaced. Some areas have been remodeled with extensive electrical and electronic equipment that needs an isolated ground circuit. A dedicated isolated ground circuit needs to be installed in room 37M. Most electrical panels appear to be at full capacity and need to be replaced with larger panels.

The building has the newer 32 watt surface and recessed fluorescent tube light fixtures throughout most of the building. A program to replace the balance of the incandescent fixtures in equipment and storerooms with 32 watt fluorescent fixtures would save energy. There are an adequate number of convenience and lab outlets throughout the building.

SAFETY STANDARDS

Fontana Laboratories is equipped with a manual fire alarm system consisting of pull stations at exits that provide local fire annunciation from the panel in room 043A of MacQuigg Lab to all floors. A fire pump located in room 150F of MacQuigg Laboratory appears to feed the standpipes in this building.

There are lighted exit signs at each exit that have an emergency backup battery in each unit. Emergency lights with battery backup are located throughout the building in the corridors and in the stairwells.

ASBESTOS

The Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report titled "Inventory of Friable Asbestos Containing Material in Buildings of the Ohio State University (Main and Branch Campuses) and Recommendations for Corrective Action", prepared by PEI Associates and dated Sept. 1986, identifies asbestos containing piping materials in the penthouse in some hot water pipe and heat exchanger insulation. All asbestos piping and asbestos containing materials including floor tiles and mastic, lab equipment and building materials within the limits of the building need to be removed during any renovation or repairs.

PERIMETER

About 95 percent of the sidewalks around the building are in good condition. Some sidewalks on the south side have sections of cracked, settled or raised concrete. Sections of the sidewalks that have settled areas, cracked sections or tripping hazards need to be relevelled or replaced. There are low areas around the building that need to be backfilled to slope away from the building.

All of the shrubbery and trees need to be trimmed. The window well drains need to be cleaned.

Entrances to the building are well lighted and area, flood and street lighting appear to be distributed properly. The building signs are in good condition.

**Minor Maintenance Projects (Less Than \$5000) EXTERIOR
FONTANA LABORATORIES #151 APRIL 30, 1998**

- 1 Repair or replace the cracked, spalling, missing or settled curb and sidewalk sections on the south and east side of the building.
Workorder #01-5063-028219-51
- 2 Trim the trees and shrubs around the building.
Workorder #01-5063-028218-55
- 3 Remove the ivy from the east side of the building.
Workorder # 01-5063-028218-55
- 4 Clean the south window well drain and clean the drain piping to the main in the building.
Workorder #01-5064-303902-66
- 5 Repair the canopy roof leak at the southeast stair door.
Workorder #01-5064-303912-73
- 6 Clean and seal the limestone entrance at the south door.
Workorder #01-5061-002128-20
- 7 Caulk the front steps at the south side of the building.
Workorder #01-5061-002128-20

**Maintenance Projects (Less Than \$5000) INTERIOR
FONTANA LABORATORIES #151 APRIL 30, 1998**

- 1 Replace insulation removed from piping for repairs in the equipment rooms 539M.
Workorder #01-5064-303902-66
 - 2 Clean and paint stained diffuser and ceiling tiles and repair loose tiles at x105c and 205c.
Workorder #01-5064-303902-66
 - 3 Clean the return air grills in the halls on all floors.
Workorder #01-5064-303902-66
 - 4 Repair the leaking roof drain in room 539M.
Workorder #01-5064-303902-66
 - 5 Repair cracked ceramic tiles in hall walls at rooms 347, 343 and x305c and at room 443 and 438a.
Workorder #01-5061-002128-20
 - 6 Clean the underground sanitary and storm piping, all laterals should also be cleaned since the window well, footer drains and roof drains can contaminate these lines.
Workorder #01-5061-002128-20
-
1. Install backflow preventors on the domestic water feeds to the building.
 2. Install concrete pad and bike racks on the southeast side of the building.
Control #3453

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

Fac #151, Facility Name: **FONTANA LABORATORIES**, Date: 4/30/98
 Inspector: JAO, Year Constructed: 1964, Gross Sq. Ft: 32,604
 Net Sq. Ft: 28,997, Replacement Cost: \$ 4,832,000 *

II. COMPONENT RATING

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST **	BUILDING COMPONENT REPLACEMENT COST	BUILDING COMPONENT CONDITION VALUE MULTIPLIER	BUILDING COMPONENT CURRENT VALUE
Foundation	4.87	235,244	85	200,760
Columns and Beams	13.15	635,572	85	542,403
Exterior Walls	5.02	242,673	82	197,930
Ext. Windows & Doors	7.62	368,137	67	247,897
Roofing & Flashing	2.51	121,337	47	56,627
Partitions & Doors	10.03	484,521	73	352,655
Wall Finishes	2.49	120,511	76	91,730
Floor Finishes	4.71	227,816	71	161,001
Ceilings & Finishes	3.35	161,782	66	106,515
Conveying	0.00	0	0	0
Plumbing	12.91	624,016	64	399,400
Heating	8.20	396,201	64	253,588
Cooling and Vent.	6.32	305,405	47	142,529
Elect. Serv. & Dist.	1.62	78,415	64	50,189
Lighting and Power	10.92	527,442	90	474,746
Safety Standards	6.27	302,929	53	161,570
TOTALS	100.00	4,832,000	71	3,439,540

III. BUILDING RATING SUMMARY

Overall Building Rating = **71%**

* Replacement Cost assigned September 1997 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 #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>235,244</u>) x (<u>85%</u>) = \$ <u>200,760</u> <div style="display: flex; justify-content: space-around; font-size: small;"> Possible Value Condition Value Multiplier Component Value </div>

SYSTEM DESCRIPTION

Sat Att

- a. Footings:**
- [X] [] Interior Footings/Piers *spread footers*
- [] [] Interior Footings/Bearing Walls
- [X] [] Perimeter Footings..... *spread footers*
- [] [] Grade Beams
- [] [] Piles
- [] [] Caissons.....
- b. Foundation Wall Materials:**
- [X] [] Concrete Cast-in-place
- [] [] Concrete Block
- [] [] Stone
- [] [] Brick
- [] [] Other.....
- c. Waterproofing and Underdrain:**
- [X] [] Coating *on exterior concrete walls*
- [] [] Membrane.....
- [] [] Board
- [X] [] Drain Tile..... *at exterior footer*
- d. Slab on Grade:**
- [] [] Plain.....
- [X] [] Reinforced
- e. Ground/Basement Floor Slab:**
- [] [] Plain.....
- [X] [] Reinforced
- f. Special Substructures:**
- [] []

COMMENTS:

none

COLUMNS AND BEAMS

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 635,572) x (85%) = \$ 542,403
Possible Condition Component
Value Value Multiplier Value

SYSTEM DESCRIPTION

Sat Att

a. Columns and Beams:

- Reinforced Concrete *on building*
- Precast Concrete.....
- Steel *used in the penthouse*
- Fireproofing
- Wood.....
- Other

b. Floor Joists:

- Concrete *reinforced concrete plane slab*
- Steel
- Wood
- Other

d. Floor Decks:

- Concrete Slab *reinforced concrete plane slab*
- Precast Slab.....
- Metal Deck w/concrete fill.....
- Wood

e. Roof Joists:

- Concrete *reinforced concrete plane slab*
- Steel *roof joists and metal deck*
- Wood

f. Pitched Roof System:

- Pitch []3/12, []4.5/12, []10/12.....
- Dormers
- Steel Purlins
- Wood Rafters
- Fireproofing
- Underlayment.....
- Insulation.....
- Ventilation
- Other

g. Flat Roof System:

- Slope *0.25" per foot*
- Concrete Deck..... *with lightweight fill*
- Precast Slab.....

- [] Metal Deck w/concrete fill*1" over penthouse*
- [] Metal Deck w/insulation.....
- [] Wood Deck.....
- [] Insulation*1.5" high density*
- [] Other.....

COMMENTS:

none

EXTERIOR WALLS

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>242,673</u>) x (<u>82%</u>) = \$ <u>197,980</u>						
<table style="margin: auto; border: none;"> <tr> <td style="text-align: center; padding: 0 10px;">Possible</td> <td style="text-align: center; padding: 0 10px;">Condition</td> <td style="text-align: center; padding: 0 10px;">Component</td> </tr> <tr> <td style="text-align: center; padding: 0 10px;">Value</td> <td style="text-align: center; padding: 0 10px;">Value Multiplier</td> <td style="text-align: center; padding: 0 10px;">Value</td> </tr> </table>	Possible	Condition	Component	Value	Value Multiplier	Value
Possible	Condition	Component				
Value	Value Multiplier	Value				

SYSTEM DESCRIPTION

Sat Att

a. Walls:

- [] Concrete [X]CIP []PRECAST.....*to the first floor*
- [] Concrete Block/brick.....
- [X] Brick []MASONRY [X]VENEER
- [] Veneer.....
- [] Window/Curtainwall *from first floor to the roof*
- [] Metal Siding *aluminum on the penthouse*
- [] Other

b. Wall Lintels Over Openings:

- [] Concrete []PRECAST []CIP.....
- [] Limestone
- [] Brick Masonry
- [] Steel
- [] Wood
- [] Other

c. Wall Trim:

- [X] Limestone *window sills, panels and entrance trim*
- [] Brick
- [] Marble.....
- [] Wood
- [] Other

d. Finishes:

- [] Plain.....
- [] Stucco
- [] Paint.....
- [] Parging.....
- [] Exposed Aggregate
- [] Drivit.....
- [] Other

e. Exterior Wall Backing System:

- [] Concrete.....
- [] Concrete Block
- [] Brick Masonry
- [] Ceramic Glazed Clay Tiles.....

[] [] Metal Studs.....
[] [] Wood Studs

COMMENTS:

All of the brick and limestone needs to be cleaned and sealed.

The entrance limestone panels need to be cleaned and sealed.

EXTERIOR WINDOWS AND DOORS

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>368,137</u>) x (<u>67%</u>) = \$ <u>247,897</u>

Possible	Condition	Component
Value	Value Multiplier	Value

SYSTEM DESCRIPTION

Sat Att

a. Window materials:

- [] [] Wood
- [] [] Steel
- [X] [] Alum *on double hung windows*
- [] [] PVC
- [] [] Other

b. Windows type & number:

- [] [X] Double Hung..... 99
- [] [] Awning
- [] [] Casement
- [] [] Pivoted.....
- [] [] Sliding.....
- [] [] Fixed.....
- [] [] Other

c. Window glazing:

- [] [X] Single pane
- [] [] Double pane.....

d. Window Wall and/or Store Front:

- [] [] Store Front
- [X] [] Vestibule..... *at main entrance*
- [X] [] Single pane.....
- [] [] Double pane.....
- [X] [] Other *green serpentine panels*

e. Door Materials:

- [] [] Wood
- [] [] Steel
- [X] [] Alum *entrance doors*

f. Doors type & number:

- [] [] Vestibule Double
- [X] [] Double *one aluminum doors*
- [] [] Exit.....
- [X] [] Stair Exit..... *one aluminum*
- [] [] Garage.....
- [] [] Special

g. Hardware:

- Automatic opener
- Push Bar Openers wt Closures
- Key Cards

COMMENTS:

The single glazed windows need to be replaced with more energy efficient double glazed windows.

ROOFING

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 121,337) x (47%) = \$ 56,627

Possible Value	Condition Value Multiplier	Component Value
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SYSTEM DESCRIPTION

Sat Att

a. Roof Covering:

- [] [] Built-up []asphalt []Coal Tar []Modified
- [] [X] Built-up w/gravel []asphalt [X]Coal Tar *5,926 SF*
- [] [] Asphalt Roll.....
- [] [] Asphalt Shingle.....
- [] [] Copper
- [] [] EPDM
- [] [] Other

b. Flashing:

- [X] [] Materials: []Cu []Galv [X]Al []EPDM []SS []PVC
- [X] [] Base & Counter *431 LF*
- [X] [] Cap..... *equipment and penthouse 186 LF*
- [X] [] Reglet.....*in walls 74 LF*
- [] [] Valley & Ridge

c. Gravel Stop & Edge Strips:

- [] [] Type []SS []Galv [X]Al []Cu []PVC *242 LF*

d. Drainage:

- [] [] Gutters w/ Exterior Downspouts
- [] [] Scuppers w/o Exterior Downspouts
- [] [X] Drains w/ Interior Storm Drains *drains*
- [X] [] Emergency Overflow.....*over the edge*

e. Parapets:

- [] [] Concrete.....
- [] [] Brick
- [] [] Precast
- [X] [] Other.....*limestone coping*

f. Parapet Caps:

- [] [] Metal []SS []Galv [X]Al []Cu []PVC *196 LF*
- [] [] Tile
- [X] [] Limestone*part of coping 196 LF*
- [] [] Precast
- [] [] Other

h. Roof accessories:

- Lightning Protection
- Roof Curbs
- Equipment Frames.....
- Pitch Pockets
- Other

COMMENTS:

The roofs are 34 years old and need to be replaced.

New counterflashing needs to be installed.

The leaking roof drain in room 539M needs to be repaired.

PARTITIONS AND DOORS

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>484,521</u>) x (<u>73%</u>) = \$ <u>352,655</u>						
<table style="margin: auto; border: none;"> <tr> <td style="text-align: center; padding: 0 10px;">Possible</td> <td style="text-align: center; padding: 0 10px;">Condition</td> <td style="text-align: center; padding: 0 10px;">Component</td> </tr> <tr> <td style="text-align: center; padding: 0 10px;">Value</td> <td style="text-align: center; padding: 0 10px;">Value Multiplier</td> <td style="text-align: center; padding: 0 10px;">Value</td> </tr> </table>	Possible	Condition	Component	Value	Value Multiplier	Value
Possible	Condition	Component				
Value	Value Multiplier	Value				

SYSTEM DESCRIPTION

Sat Att

a. Partition Framing:

- [X] [] Concrete Block
- [] [] Clay Tile Block.....
- [X] [] Glazed Clay Tile Block.....*1" glazed clay tile*
- [] [] Masonry
- [] [] Wood Stud
- [X] [] Metal Stud.....
- [] [] Other

b. Special partitions and Walls:

- [X] [] Demountable.....*steel, walls, doors and windows*
- [] [] Toilet.....
- [] [] Screen Walls
- [] [] Glass
- [] [] Gate.....
- [] [] Other

c. Wall Material:

- [] [] Plaster
- [X] [] Drywall
- [] [] Glass
- [] [] Wood Paneling
- [] [] Composite Paneling.....
- [] [] Steel Panels.....
- [X] [] Tile/Glazed
- [] [] Other

d. Interior Doors & Frames:

- [X] [] Met Door/Met Frame.....*fire doors*
- [] [] Wood Door/Wood Frame
- [X] [] Wood Door/Metal Frame.....
- [X] [] Glazing.....
- [] [] Roll-up.....
- [] [] Sliding.....
- [X] [] Other

e. Hardware:

- [X] [] Door [X]Knobs []Levers.....

- Door Closures.....
- Kick/Push Plates.....
- Security & Detection.....
- Automatic Openers.....
- Fire Door Magnets.....
- Other.....

COMMENTS:

Some door and/or door hardware needs to be repaired where needed.

WALL FINISHES

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 120,511) x (76%) = \$ 91,730

Possible	Condition	Component
Value	Value Multiplier	Value

SYSTEM DESCRIPTION

Sat Att

a. Wall Finishes:

- | | | |
|-------------------------------------|-------------------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Paint |
| <input type="checkbox"/> | <input type="checkbox"/> | Vinyl Wall Coverings |
| <input type="checkbox"/> | <input type="checkbox"/> | Prefinished Paneling |
| <input type="checkbox"/> | <input type="checkbox"/> | Cork..... |
| <input type="checkbox"/> | <input type="checkbox"/> | Wallpaper |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ceramic Glazed Tile <i>8x16 in halls and stairwells</i> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Marble <i>at entrance</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Stone..... |
| <input type="checkbox"/> | <input type="checkbox"/> | Trim & Wainscot |
| <input type="checkbox"/> | <input type="checkbox"/> | Decoration |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Glass..... <i>at office store fronts</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Other..... |

COMMENTS:

Some of the glazed tile has cracked badly in several halls and needs to be repaired.

FLOOR FINISHES

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>227,816</u>) (<u>71%</u>) = \$ <u>161,001</u>						
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Possible	Condition	Component				
Value	Value Multiplier	Value				

SYSTEM DESCRIPTION

Sat Att

- a. Carpet:**
- Rolled *in some offices*
- Tile.....
- b. Concrete Topping:**
- Clear Sealant.....*on equipment room and lab floors*
- Antislip
- Epoxy.....
- c. Resilient:**
- Vinyl Composition Tile.....
- Vinyl/Plastic Tile.....
- Asphalt Asbestos Tile.....
- Linoleum Tile
- Vinyl Roll
- Rubber
- d. Ceramic Tile** Mosaic Quarry Pavers
- f. Masonry** Marble Granite Slate Brick.....
- g. Terrazzo** Marble Granite ... *at entrance and stairs*
- h. Wood** Tiles T&G Hardwood Planking
- i. Pedestal** Vinyl Tiles Grills Supply Air Vent....
- j. Base Molding:**
- Vinyl.....
- Wood
- Terrazzo.....
- Ceramic Tile
- Masonry.....

COMMENTS:

The asphalt asbestos tiles need to be removed when the areas are remodeled.

Floor finishes are generally in good condition.

CEILINGS AND FINISHES

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>161,782</u>) x (<u>66%</u>) = \$ <u>106,515</u>						
<table style="margin: auto; border: none;"> <tr> <td style="padding: 0 10px;">Possible</td> <td style="padding: 0 10px;">Condition</td> <td style="padding: 0 10px;">Component</td> </tr> <tr> <td style="padding: 0 10px;">Value</td> <td style="padding: 0 10px;">Value Multiplier</td> <td style="padding: 0 10px;">Value</td> </tr> </table>	Possible	Condition	Component	Value	Value Multiplier	Value
Possible	Condition	Component				
Value	Value Multiplier	Value				

SYSTEM DESCRIPTION

Sat Att

a. System Type:

- [] Exposed *in equipment rooms and many labs*
- [] Applied to Structure.....
- [] Suspended Stud.....
- [] Suspended Steel Grid.....
- [] Suspended Aluminum Grid
- [] Suspended Sealed Grid.....
- [] Suspended Concealed Spline.....

b. Materials:

- [] Drywall
- [] Plaster
- [] Mineral Fiber Board *in remodeled rooms and halls*
- [] Fiberglas Board.....
- [] Cementitious Fiber Board.....
- [] Metal Pan Tile
- [] Other

c. Finishes:

- [] Paint.....
- [] Prefinished []Paint []Vinyl []Fabric
- [] Other

d. Openings & Inserts:

- [] Air Distribution.....
- [] Lighting Fixtures
- [] Access Panels.....
- [] Sprinklers.....
- [] Smoke Detectors.....
- [] Speakers.....
- [] Skylights
- [] Other

COMMENTS:

Many areas have the original 1x1 acoustic ceiling tiles. Several areas need to be cleaned, painted or reinstalled. The corridor ceilings need to be replaced.

CONVEYING

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ _____) x (_____ %) = \$ _____		
Possible Value	Condition Value Multiplier	Component Value

SYSTEM DESCRIPTION

Sat Att

a. Elevators:

- [] [] Number
- [] [] Type
- [] [] Speed
- [] [] Capacity (lbs.).....
- [] [] Dimensions
- [] [] Door Operation:.....
- [] [] Center
- [] [] To Side

b. Elevators:

- [] [] Number
- [] [] Type
- [] [] Speed
- [] [] Capacity (lbs.).....
- [] [] Dimensions
- [] [] Door Operation:.....
- [] [] Center
- [] [] To Side

c. Lifts and Hoists:

- [] [] Number
- [] [] Type

d. Moving Stairs and Walks:

- [] [] Number
- [] [] Type

e. Conveyors:

- [] [] Number
- [] [] Type

COMMENTS:

none

MECHANICAL/PLUMBING

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 624,016) x (64%) = \$ 399,400

Possible Value	Condition Value Multiplier	Component Value
-------------------	-------------------------------	--------------------

SYSTEM DESCRIPTION

Sat Att

a. Services Available:

- [] [X] Cold Water 6" main with 4" standpipe & 4" DCW
- [] [X] Backflow Valve
- [] [X] Hot Water 1.25" DHE & .75 DHWR from room 29M
- [X] [] Natural Gas 1.25" from room 29M
- [X] [] Compressed Air 1.5" from room 29M
- [X] [] Other vacuum 3" from room 29M
- [X] [] Other deionized water 1" from room 29M

b. Piping & Fittings:

- [X] [] Cast Iron.....
- [X] [] Duriron on acid waste mains
- [X] [] Copper Pipereplaced water piping
- [] [] Copper Tubing.....
- [X] [] Steel ... on standpipe, gas, air, vacuum and steam piping
- [] [X] Galv. Steelwater and waste and vent piping
- [X] [] Otherglass piping

c. Water Heaters:

- [] [] Gas
- [] [] Steam Converter/Tank.....
- [] [] Steam Instantaneous
- [X] [] Central Hot Water..... 1.25" DHWS from Koffolt lab

d. Drainage:

- [X] [] Storm Drains..... 6" to the south
- [X] [] Sanitary Drainage 6" to the south then a combined sewer
- [X] [] Floor Drains
- [] [] Sump Pumps

e. Fixtures: Number

- [] [] Water Closets.....
- [] [] Urinals
- [X] [] Lavatory Sinks
- [] [] Kitchen Sinks
- [] [] Service Sinks
- [] [] Showers
- [X] [] Electric Water Coolers 5

- f. Sprinkler Systems:**
- Wet
- Dry.....
- Carbon Dioxide
- Halon
- g. Standpipe Systems:**
- [X]Wet []Dry
- Fire Hose Valves [X]2.5" [X]1.25"
- Hose Cabinets, Hoses []Installed [X]Removed

COMMENTS:

A back flow valve needs to be installed in the domestic water line.

The galvanized steel cold and hot water piping may need to be replaced in the next five to ten years.

The main water valve for the domestic water piping is in room 37.

The sanitary and storm drainage are separated in the building and combine outside the building.

MECHANICAL/HEATING

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 396,201) x (64%) = \$ 253,588

Possible Value	Condition Value Multiplier	Component Value
-------------------	-------------------------------	--------------------

SYSTEM DESCRIPTION

Sat Att

a. Heat Source:

- [] Central Plant Steam 4" HPS from Koffolt Lab
- [] Central Plant Hot Water

b. System Type:

- [] Steam
- [] Hot Water
- [] Warm Air

c. Air Handling Units:

- [] Multizone []Preheat []Heating []Reheat
- [] Dual Duct [X]Preheat [X]Heating []Reheat
- [] Make-up Air []Preheat []Heating []Reheat.....
- [] Variable Volume Air []Preheat []Heating []Reheat.....
- [] Constant Volume Air []Preheat []Heating []Reheat.....
- [] Other

d. Air Filters:

- [] Prefilter[]Multi [X]DDAHU []MUAHU []VAVAHU [X]CAV
- [] Bagfilter[]Multi [X]DDAHU []MUAHU []VAVAHU []CAV
- [] Other

e. Space Equipment:

- [] Radiators
- [] Convectors
- [] Unit Heaters *at entrances*
- [] Reheat Coils.....
- [] DD Boxes
- [] CAV Boxes.....
- [] 2-Pipe Fan Coil.....
- [] Other

f. Control Type:

- [] [X]Pneu [X]Electric []DDC [X]DDC Upgrade.....

COMMENTS:

The original DDHV air handling units are 34 years old and will need to be replaced within the next five to ten years. The steam and heating hot water systems are 34 years old and will need to be replaced within the next five to ten years.

COOLING/VENTILATING

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>305,405</u>) x (<u>47%</u>) = \$ <u>142,529</u>						
<table style="margin: auto; border: none;"> <tr> <td style="padding: 0 10px;">Possible</td> <td style="padding: 0 10px;">Condition</td> <td style="padding: 0 10px;">Component</td> </tr> <tr> <td style="padding: 0 10px;">Value</td> <td style="padding: 0 10px;">Value Multiplier</td> <td style="padding: 0 10px;">Value</td> </tr> </table>	Possible	Condition	Component	Value	Value Multiplier	Value
Possible	Condition	Component				
Value	Value Multiplier	Value				

SYSTEM DESCRIPTION

Sat Att

- a. System/Capacity:**
- [] Water
- [] DX
- b. Chillers Year/ Manufacturer/Capacity/Refrigerant:**
- [] Centrifugal *1963 Trane 210 ton, R-11 chiller*
- [] Reciprocating.....
- [] Absorption
- [] Screw
- c. Condenser Side:**
- [] Type/Capacity [X]CW []DX *210 ton 1991 Marley tower*
- d. Air Handling Units:**
- [] Multizone []CW []DX []HUMD.....
- [X] Dual Duct [X]CW []DX []HUMD.....
- [] Make-up Air []CW []DX []HUMD.....
- [] Variable Volume []CW []DX []HUMD.....
- [] Constant Volume [X]CW [X]DX []HUMD..... *1 unit*
- [X] Other..... *16 fan coil units*
- e. Additional Air Filters:**
- [] Postfilter []Multi []DDAHU []MUAHU []VAVAHU []CAV
- [] Other []HEPA []BAG []CARTRIDGE []CHARCOAL
- f. Direct Expansion: Number**
- [] Window units
- [] Thru-the-wall.....
- [] Single zone *2 DX split systems*
- [] Other
- g. Distribution Boxes:**
- [] VAV []FC []REHEAT
- [] CAV []FC []REHEAT.....
- [X] DUAL DUCT []FC []REHEAT
- h. Special Systems:**
- [] Type.....
- [] Capacity.....
- i. Control Systems:**
- [] [X]Pneu [X]Electric []DDC [X]DDC Upgrade.....

j. Fans:

- [] Exhaust equipment *33 Exhaust Fans*
- [] Recirculated *one return air fan*

COMMENTS:

Exhaust fan units are 34 years old and many will need to be replaced within the next five to ten years.

The original DDHV air handling unit and DDVH boxes are 34 years old and will need to be replaced within the next five to ten years.

The 16 fan coil units need to be replaced.

ELECTRICAL SERVICE AND DISTRIBUTION

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>78,415</u>) x (<u>64%</u>) = \$ <u>50,189</u>		
Possible Value	Condition Value Multiplier	Component Value

SYSTEM DESCRIPTION

a. Service:

Substation: Buckeye, McCracken Power Plant AEP

Primary Voltage: 13,200 Volts, Volts

Switch Gear Circuit No.: 107/307

Transformer:

Manufacture	Type	KVA	Secondary/Voltages	Location
GE	Silicone	1000	208/120	Koffolt Lab room 9M

b. Distribution System:

1. Motor Control Center (MCC) Room 37M and 501M

Panelboard Fused, Circuit Breakers

Voltage 480/3, 277/3, 208/3, 240/1

Amperage 1200A, 800A, 600A, 400A, 200A

2. Lighting Room 37M

Panelboard Fused, Circuit Breakers

Voltage 480/3, 277/3, 208/3, 240/1

Amperage 800A, 400A, 250A, 200A, 150A, 100A

3. Building Power Room 37M

Panelboard Fused, Circuit Breakers

Voltage 480/3, 277/3, 208/3, 240/1

Amperage 800A, 400A, 250A, 200A, 150A, 100A

4. Isolated Ground Power Room

Panelboard Fused, Circuit Breakers

Voltage 480/3, 277/3, 208/3, 240/1

Amperage 400A, 250A, 200A, 150A, 100A

c. Conduit and wire:

Conduit Steel, Aluminum, PVC, Flexible

Conductor Copper, Aluminum, MIT

Wire: PVC Cover, Romex, Armored Cable(BX)

d. Emergency System:

Battery backup Room

Emergency Panel Room

UPS Room

e. Emergency Generator: none

COMMENTS:

The electrical distribution system is 38 years old and needs to be replaced in room 37M. An isolated ground system needs to be installed in several of the labs.

ELECTRICAL LIGHTING AND POWER

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 527,442) x (90%) = \$ 474,746

Possible Value	Condition Value Multiplier	Component Value
-------------------	-------------------------------	--------------------

SYSTEM DESCRIPTION

Sat Att

a. Lighting (lamp type):

- [] [] Fluor 40 watt.....
- [X] [] Fluor 32 watt..... *in most of the building*
- [] [] Fluor Can
- [] [] Incandescent
- [X] [] HID []Mercury []HPS [X]Metal Halide
- [] [] Low Voltage (12V).....
- [] [] Other

b. Lighting Levels

- [X] [] Halls.....
- [X] [] Rooms.....
- [] [X] Mechanical Rooms

c. Fixture Condition

- [X] [] Fixtures
- [X] [] Bulbs.....
- [X] [] Fixture Lens

d. Receptacles & Switches:

- [X] [] Wall Outlet 20A.....
- [] [] GFI Breakers
- [X] [] Switches.....
- [X] [] Cover Plates

c. Special:

- [] [] Lightning Protection
- [X] [] Communication [X]Clock []Public Address [X]Bells
- [X] [] Alarm [X]Fire []Security
- [X] [] Telecommunication [X] Phones [X]Data []Cable TV.....
- [X] [] Data Systems
- [X] [] Fiber Optics

COMMENTS:

Some distribution circuits need to be replaced.

An isolated ground system needs to be installed in several of the labs.

SAFETY STANDARDS

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

COMPONENT RATING: (\$ 302,929) x (53%) = \$ 161,570

Possible Value	Condition Value Multiplier	Component Value
-------------------	-------------------------------	--------------------

SYSTEM DESCRIPTION

Sat Att

a. Exits:

Stair Construction:

- | | | |
|-----|-----|--|
| [] | [] | concrete |
| [X] | [] | steel <i>with concrete terrazzo fill</i> |
| [] | [] | wood..... |
| [X] | [] | Number of Exit Stairs..... <i>one</i> |
| [X] | [] | Number of Other Exits <i>one</i> |

b. Fire Rating:

- | | | |
|-----|-----|--|
| [] | [] | Construction Type: I_ II <u>X</u> III_ IV_ V_ VI___..... |
| | | Building Height: <i>54 ft., 4 stories</i> |

c. Extinguishing Systems:

- | | | |
|-----|-----|---|
| [X] | [] | Portable..... |
| [X] | [] | Standpipe..... |
| [X] | [] | Hose Cabinets..... <i>hoses have been removed</i> |
| [] | [] | Hoses |
| [] | [] | Sprinklers..... |
| [] | [] | Gas Suppression |
| [] | [] | Other..... |

d. Detection & Alarm Systems:

- | | | |
|-----|-----|--|
| [X] | [] | Pull Stations..... |
| [X] | [] | Bells..... |
| [] | [] | Horns |
| [] | [] | Strobes |
| [X] | [] | Annunciator Panel <i>in MacQuigg Lab</i> |
| [] | [] | Smoke Detectors..... |
| [] | [] | Halls |
| [] | [] | Elevators..... |
| [] | [] | Rooms |
| [] | [] | Equip Rooms..... |
| [] | [] | Ducts |

e. Lighting Systems:

- | | | |
|-----|-----|---|
| [X] | [] | Exit Signs [X]BATTERY []EMC..... |
| [X] | [] | Exit Lighting [X]BATTERY []EMC..... |
| [X] | [] | Emergency Lighting [X]BATTERY []EMC..... |

- [] [] Emergency Generator
- [] [] **f. Lightning Protection**

COMMENTS:

none

BUILDING PERIMETER EVALUATION

FAC #: 151

DATE: 4/30/98

INSPECTOR: JAO

SYSTEM DESCRIPTION

Sat Att

a. Building Access:

- | | | |
|-------------------------------------|-------------------------------------|-------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Driveway |
| <input type="checkbox"/> | <input type="checkbox"/> | Loading Dock |
| | | Sidewalks..... |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Front..... <i>south</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Side..... |
| <input type="checkbox"/> | <input type="checkbox"/> | Rear |
| | | Steps |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Front..... |
| <input type="checkbox"/> | <input type="checkbox"/> | Side..... |
| <input type="checkbox"/> | <input type="checkbox"/> | Rear |
| <input type="checkbox"/> | <input type="checkbox"/> | Ramp..... <i>none</i> |

b. Lawn and Landscaping:

- | | | |
|-------------------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Lawn |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Shrubs..... |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Trees |
| <input type="checkbox"/> | <input type="checkbox"/> | Undesirable Insect |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Bedding Material |
| <input type="checkbox"/> | <input type="checkbox"/> | Watering System..... |

c. General Site Information:

- | | | |
|-------------------------------------|--------------------------|-----------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Signage |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Address Identification..... |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Security Lights..... |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Street Lights..... |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Drainage |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Storm Drains..... |

COMMENTS:

The concrete curb on the south side needs to be repaired in several places.

Trees and shrubs around the building need to be trimmed.

The grade around the building needs to be raised, compacted and slope away from the building.

The concrete walk on the south needs to have several sections replaced or releveled.

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 Campus Planning and space Utilization 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 State of Ohio Division of Factory and Building Inspection at the time of construction approved the buildings inspected. 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
AHU.....	AIR HANDLING UNIT
ATT.....	ATTENTION
BLDG.....	BUILDING
BUR.....	BUILT UP ROOF
COND.....	CONDENSATE WATER
CAV.....	CONSTANT AIR VOLUME
CW.....	CHILLED OR CONDENSER WATER
DDAHU.....	DUAL DUCT AIR HANDLING UNIT
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
EMC.....	EMERGENCY CIRCUIT
FPM.....	FEET PER MINUTE
GPM.....	GALLONS PER MINUTE
HID.....	HIGH INTENSITY DISCHARGE LIGHT
HPS.....	HIGH PRESSURE STEAM
HVAC.....	HEATING, VENTILATING AND AIR CONDITIONING
KV.....	KILOVOLTS
KVA.....	KILOVOLTS AMPS
KW.....	KILOWATTS
LC.....	LIQUID COOLED
LF.....	LINEAL FEET
LPS.....	LOW PRESSURE STEAM (15 PSI)
MBH.....	THOUSAND BTU PER HOUR
MCC.....	MOTOR CONTROL PANEL
MPS.....	MEDIUM PRESSURE STEAM (50 PSI)
MZCV.....	MULTIZONE CONSTANT VOLUME AIR HANDLING
N/A.....	NOT APPLICABLE
PSI.....	POUNDS PER SQUARE INCH
RM.....	ROOM
RTU.....	ROOF TOP UNIT (HEATING OR A/C)
SAT.....	SATISFACTORY
SF.....	SQUARE FEET
S/P.....	STAND PIPE
SR.....	STEAM RETURN LINE
SS.....	STEAM SUPPLY LINE
SY.....	SQUARE YARDS
TR.....	TERMINAL REHEAT
V.....	VOLTS
VAV.....	VARIABLE AIR VOLUME

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