

# **FACILITY AUDIT REPORT**

## **FISHER HALL**

**#249**

**DECEMBER 30, 1998**



**FISHER HALL**

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**FISHER HALL**  
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## EXECUTIVE SUMMARY FOR FISHER HALL

Fisher Hall houses offices of the Fisher College of Business. The building was constructed in 1997/98 and occupied in August of 1998 by the Fisher College of Business with a gross area of 131,807 SF. The eight-story building with ground floor and penthouse was built for faculty and graduate student offices. The building shares various utilities, such as electrical power distribution to other buildings, steam and chilled water feeds for Fisher Hall and Gerlach Hall. A tunnel system connects Fisher Hall to Gerlach Hall and eventually will connect all six College of Business buildings together. Since the faculty and staff have occupied the building many construction related issues have come to light and are in the process of being addressed. Lists of these issues are included at the end of this report under building warranty items.

### PROPOSED MAINTENANCE PROJECTS

#### FISHER HALL #249

<b>A. Corrective Maintenance Projects:</b>	<b>Control No</b>
1. ....	\$
.....	
<b>Sub Total</b> .....	<b>\$</b>
.....	
 <b>B. Building Improvement/Addition Projects:</b>	
1. <i>Remove the section of sidewalk in front of the east front steps and reinstall to slope to the street and install drain to the east of the wall to remove water</i> .....	\$ 15,000 5404
2. <i>Install a fan coil unit and more ventilation in room 002M to cool the room and equipment</i> .....	\$ 28,000 5401
<b>Sub Total</b> .....	<b>\$ 43,000</b>
 <b>C. Building Component Replacements expected within the next 5-10 years:</b>	
1. ....	\$
.....	
<b>Sub Total</b> .....	<b>\$</b>
 <b>Total Cost for all Projects</b> .....	 <b>\$ 43,000</b>

## GENERAL BUILDING INFORMATION

### FISHER HALL #249

BUILDING ADDRESS: *2100 Neil Avenue*

GROSS SQ. FT.: *131,807*

NET ASSIGNABLE SQ. FT.: *111,787*

MECHANICAL/CUSTODIAL AREA SQ. FT.: *13,800*

YEAR OF CONSTRUCTION: *1997/1998*

YEAR OF LAST RENOVATION: *none*

NUMBER OF STORIES/BASEMENT: *Eight stories with ground floor and penthouse*

AIR CONDITIONING (Percentage): *100%*

CURRENT USE: *The Fisher College of Business*

TYPE OF CONSTRUCTION: *Reinforced Concrete with Masonry Skin*

ESTIMATED REPLACEMENT COST: *\$ 32,850,000 \**

COST PER GROSS SQUARE FEET: *\$ 249.23*

WHEELCHAIR ACCESSIBILITY: *From the south or north side of the building to the corridor and the elevators.*

OVERALL BUILDING CONDITION: *Satisfactory \*\**

NUMBER OF EXIT STAIRWAYS: *One (1)*

NUMBER OF OTHER EXITS: *Five (5)*

AREA SHOP RESPONSIBILITY: *North Shop*

\* *Replacement Cost assigned January 1999 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

### FISHER HALL #249

#### HEATING:

Source – *Power Plant*

Type Heating System – *Hot water*

Main Steam Feed (Line size, valve location) – *6” HPS to room 002M*

Building Htg. Water (line size, valve location) – *6” in room 002M*

**VENTILATION SYSTEM:** *Powered exhaust and VAV systems*

#### COOLING:

BLDG. *100%*, Central Chilled Water: *315 Ton to room 002M*

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

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

#### ELECTRIC:

Source	Size (KVA)	Primary/Secondary Switchgear & Main Disc. (Rm.)
<i>107/307</i>	<i>1000/1500</i>	<i>13,200/ 480/277</i>
		<i>003M</i>

#### PLUMBING SERVICES:

Water (size, valve location) – *8” room 002M, 8” to fire, 4” to domestic*

Gas (size, valve location) – *2.5” to room 904M*

Domestic Hot Water (size, valve location) – *2” DHWS, 1” DHWR room 002M*

Compressed Air (size, location) – *1” from room 002M*

#### SEWERS:

Storm - *1@8”, 1@10”, Sanitary -1@8”, Combined Storm/San-0*

#### METERS:

Gas (size, location) – *east side of building in well*

Water (size, location) – *4” in room 002M and 2” 002M to lawn sprinklers*

Electric (location) - *room 003M*

#### ALARM SYSTEMS:

Fire Alarm room *003M*, Remote Panel Location at Room *x001L*

Fire Pump @ 1250 GPM, Pump Location- Room *002M*

Sprinkler, Valve Location Room *002M and 902M*,

100%,  Partial,  Limited

Strobes,  Bells  Horns in  Halls,  Rooms

Other Alarms – *HVAC equipment*

**ELEVATORS:**

Number- *One*, Type (passenger/freight)- *Freight/Passenger*  
Manufacturer – *Schindler*, Size- *3,500#*, *66”x80”*

Number- *Two*, Type (passenger/freight)- *Passenger*  
Manufacturer – *Schindler*, Size- *3,000#*, *66”x80”*

**EMERGENCY GENERATOR:**

Size- *743 KVA* in room *904M*

**ASBESTOS SURVEY (1986):** *Asbestos containing materials were not identified since this building was built in 1997/98.*

# **FISHER HALL NARRATIVE**

## **HISTORY**

Fisher Hall houses offices of the College of Business. The building was constructed in 1997/98 and occupied in August of 1998 by the Fisher College of Business with a gross area of 131,807 SF. The eight-story building with ground floor and penthouse was built for faculty and graduate offices. The building shares various utilities, such as electrical power distribution to other buildings, steam and chilled water feeds to Fisher Hall and Gerlach Hall. A tunnel system connects Fisher Hall to Gerlach Hall and eventually will connect all six College of Business buildings together. Since the faculty and staff have occupied the building many construction related issues have come to light and are in the process of being addressed. Lists of these issues are included at the end of this report under building warranty items.

The building appears to basically be functioning as designed, at this time. However, some items noted in this report need to be tested, repaired or replaced. These items when completed will protect and enhance the building performance and create a satisfying visual environment for students, faculty, staff and visitors.

Maintenance problems are showing up in the temperature controls, doors and door hardware, electrical breakers and window leaks.

In an interview with the building coordinator, it was learned that the occupants are basically satisfied with the overall condition of the building systems, however, the performance of the building has been discouraging and items noted above and herein are of concern.

Occupancy of the building, reported by The Office of University Resource Planning & Institutional Analysis in the C-1 Building Space Assignment Report dated January 1999 for a Net Assignable Area of 111,787 SF, is as follows; Faculty offices 29.3%, Staff offices 15.3%, Administrative 6.3%, Conference rooms 3.4%, Mechanical 12.3% Custodial/Toilet 6.9%, and Circulation 26.5%.

## **PRIMARY SYSTEMS**

The structural components of this building consist of reinforced concrete caps atop caissons drilled to bedrock with grade beams and concrete walls on the perimeter and some interior walls up to the first floor level. These support the reinforced concrete columns and beams that support reinforced concrete one way and wafer floors up to the penthouse level. The penthouse structural components and roof consists of steel columns, beams and purlins that support the steel metal deck roof structure. These form the basic skeletal components of this eight-story building with ground level and penthouse.

There are no major signs of settlement or movement in the building foundation or structural columns and supports. A crack in the north concrete column at the tunnel needs to be checked by the structural engineer of record and comments noted in the building file.

A brick veneer was installed on concrete block or metal studs with insulation to form the exterior walls. Openings in the brick for windows, window walls, louvers and entrance doors are accented with limestone or brick that form the head, sill and jambs. Cut marble panels, varied styles of brickwork, limestone shapes and metal shapes are used for wall, entrance and roof trim. The penthouse level has metal studs with insulation and brick veneer around the exterior perimeter and metal siding around the elevator room to the roof. Metal accent supports with louvers between some of them are located around the building at the penthouse level and continue up to the copper roof.

The exterior masonry brick is in good condition. Control and expansion joints were originally installed and appear to be in good condition. The limestone and marble trim at lower levels should be sealed to prevent staining.

The windows consist of fixed upper double-glazed windows with lower awning windows that are installed in aluminum frames. The window wall system with spandrel glass panels between windows consists of fixed double glazed windows with casement windows that are installed in aluminum frames. Two stainless steel window walls above the north and south entrance doors have double glazed glass panels. The windows have been reported to leak air and water and are to be tested by the contractor to determine what repairs are needed.

Two single doors and one double door at the south entry are stainless steel with glass inserts and storefront glass panels forming a vestibule to the brick wall and are in good condition. The four inner doors are also stainless steel with glass inserts. The two double doors at the north entry are stainless steel with glass inserts forming a vestibule to the brick wall and are in good condition. The two inner double doors are wood with glass inserts. There are two aluminum double doors and two aluminum french double doors off the south side of room 195 and a steel single stair exit door to the north. A double width rollup steel garage door is also located on the north side. The automatic openers on the north and south entrance doors stay opened for 10-15 seconds and should be adjusted to code requirements to conserve energy.

The third floor roof consists of a concrete deck, insulation board, and a modified roll roof installed with hot modified asphalt. The roof areas to the east and west at the penthouse floor are of the concrete deck type, insulation board, and a modified roll roof installed with hot modified asphalt. The perimeter of the penthouse roof consist of steel beams and purlins with a steel deck, insulation and a sloping standing seam copper roof. The center section of the penthouse and elevator room roof consists of steel beams and purlins with a steel deck, insulation board, and a

modified roll roof installed with hot modified asphalt. The roofs are 1 year old and are in good condition. Emergency roof drains are installed around the perimeter of the building and at the center roof level. The brick parapet walls with limestone scuppers and limestone parapet cap on the third floor roof or aluminum cap and counterflashing around the perimeter on the penthouse roof are in good condition. The copper standing seam roof has an aluminum architectural trim around the perimeter. Some roof leaks need to be repaired.

## **INTERIOR SYSTEMS**

The reinforced concrete floors and columns of this building are enclosed with concrete block at stairwells and garage or metal studs and insulation or metal studs and drywall that form perimeter walls, interior walls, halls, rooms and stairwells. The ground and first floor lobby walls have wood paneling with wood or marble base, wood wainscot and ceiling trim. Hall walls have vinyl wall covering with a wood base, wood wainscot and ceiling trim. The partitions and walls are in good condition. As noted above, some rooms of the building up to the penthouse level are drafty and cold during the winter months. This could be due to improperly installed building wrap and/or insulation or leaking windows.

The majority of the doors in this building are wood doors in metal frames and are in good condition. Wood fire doors in steel frames are used at mechanical rooms and stairwells off finished hallways. Steel fire doors in steel frames are used at ground floor and penthouse mechanical rooms and in the tunnels. The metal fire doors in this building are in good condition. Some door and/or door hardware problems are showing up in maintenance calls.

The floors in this building have marble tile and terrazzo flooring on the ground and first floor and carpet in offices and halls of all other floors. The equipment rooms have exposed concrete floors that have been sealed with an epoxy sealant. The floors throughout the building are in good condition and have been well maintained. The stairs and landings are metal framed with terrazzo fill and wood handrails and are in good condition. Minor cracking was noted in the concrete floors throughout the building on the ground floor level.

The ceilings in most rooms consisted of a suspended aluminum 2x4 grid with 2x4 mineral fiber ceiling tiles. The ceilings in halls consisted of a suspended aluminum 2x2 grid with 2x2 mineral fiber ceiling tiles. The ceilings on the ground and first floors entrances consisted of a suspended steel grid and drywall with a painted surface. The mineral fiber tile ceilings are in good condition. Some ceiling tiles need to be cleaned or repaired where leaks have occurred.

## **SERVICE SYSTEMS**

The major service systems, domestic cold and hot water, standpipe system, sprinkler system, natural gas, compressed air, sanitary waste and storm drainage all

appeared to be in good condition and functioning at this time. The plumbing drainage system did not appear to have any problems. The domestic cold and hot water piping appears to have copper pipe and is in good condition. The main water supply and standpipe system appears to be cast iron and steel pipe. The Domestic Cold Water system has a backflow preventer and water meter. The Domestic Hot Water system is connected to an instantaneous steam converter in room 002M and has a mixing valve and hot water return pump. There was adequate water pressure at the faucets and fixtures on all of the floors. The restroom fixtures are in good condition. There is a welded steel natural gas line to this building that serves the emergency generator. The building does not have sufficient hot water because the domestic hot water mixing valve is not working properly and needs to be replaced.

The passenger/freight elevators are 1 year old and are in good condition. The elevators have stainless steel doors, interior cab walls and trim. The elevator meets present access and fire codes. The elevator was operating but maintenance records did indicate various problems with the elevator over the past year.

The 6" HPS line that feeds the building is tapped into the Central High Pressure Steam loop located on the south side from the tunnel off Woodruff Avenue. The 6" HPS steam line feeds the 200/70 PSI pressure reducing station in room 002M. There is a desuperheater in the line after the pressure reducing station. The MPS steam line feeds the 70/15 PSI pressure reducing station in room 002M and a 4" MPS line to room 018M in Gerlach Hall. The (LPS) Low Pressure Steam is piped to the hot water heat exchanger in room 002M from the 70/15 PSI pressure reducing station. The low pressure steam heats the hot water that is then pumped to the air handling units' hot water reheat coils, fan coil units at entrances, convectors under windows and unit heaters. Two heating water variable speed pumps located in room 018M supply heating water to the building. The heating system was operating at the time of the site visits. The heating fan coil units at the south entrance are very noisy and need to be replaced with quieter units. A condensate lift station was installed on the hot water heat exchanger in room 002M to move condensate to the receiver. Another condensate lift station will be installed in room 002M to move condensate back to the power plant.

Three chilled water pumps located in room 002M supply chilled water from the campus chilled water loop (10") to the VAV air handling unit cooling coils and two fan coil units in Fisher Hall. About 315 tons of cooling is provided to the building. A 6" chilled water line that feeds Gerlach Hall is tapped off the 10" line in Fisher Hall.

The building heating, ventilation, and air conditioning system is a high velocity (VAV) variable air volume system. Two integral VAV air handling units with hot water preheat and chilled water coils, filters and steam humidifiers are located in room 902M. Another VAV air handling unit with hot water preheat and chilled water coils and filters is located in room 156M. The VAV air handling units supply air to the VAV boxes located throughout the building. A variable speed motor

controller determines the systems' fan air volumes. A ducted system returns air to the air handling units through a return air fan. The VAV boxes located in the rooms modulate the cooling air and/or heating coil from a DDC thermostat in the room. The cooling and ventilation system appeared to be operating at the time of the site visits, however, some heating problems were noted in some areas.

Areas requiring special cooling requirements (elevator, electrical and computer room) have constant air volume (CAV) units with chilled water coils located in the space. The computer room CAV has an electric heater and humidifier.

Controls for the heating and cooling system are DDC with pneumatic and electric operators that have been tied into the central campus system. Some temperature control problems have been detected with the DDC system because the wrong controller was used in several areas and software problems have been detected. These problems are being ironed out at this time with the temperature control contractor.

There are eight exhaust fans located on the roof of the penthouse. Each unit removes air from restrooms, equipment rooms, common areas and conference rooms. Room 002M is very warm and needs more ventilation air to cool the room and the electronic equipment within the room.

## **ELECTRIC**

The Buckeye substation circuit number 107/307 feeds the 13.2 KVA switches located in room 003M that supplies the electrical service to other buildings in the Fisher College of Business complex. The Buckeye substation circuit number 107/307 feeds the 1000/1500 KVA 480/277 volt transformer located in room 003M that supplies the electrical service to Fisher Hall. The 480/277-volt switchgear located in room 003M of Fisher Hall feeds the MCC panels in rooms 002M and 902M and the lighting distribution panels located throughout the building. The 208/120-volt switchgear located in room 003M and 902M of Fisher Hall feeds the power distribution panels located on all floors. Panel sizes vary throughout the building depending on the load. At about 7.6 watts per square foot the building appears to have an adequate power supply in all circuits. Some areas have electrical and electronic equipment that is fed with an isolated ground power system. Some problems have been noted with one of the main circuit breakers on a lighting panel.

The building has 32-watt fluorescent surface and recessed fluorescent tube light fixtures throughout of the building. Entrance areas are illuminated with fluorescent recessed can fixtures and ceiling hung and wall mounted fixtures. There are an adequate number of convenience outlets throughout the building.

## **SAFETY STANDARDS**

Fisher Hall is equipped with a manual fire alarm system consisting of pull stations at exits and stairwells that provide fire annunciation from the panel in room 003M to all floors. A remote fire annunciation panel at the south front entrance displays the systems' status. Communications to the elevator and refuge areas in certain stairwells are located next to the remote fire annunciation panel along with a generator status panel. The wet standpipes and sprinkler systems to the building and the dry pipe for the penthouse sprinklers are fed from the Fire Pump in room 002M and appear to be in good condition. There are portable fire extinguishers located throughout the building. The 2.5" fire department hose connections are located in stairwells.

There are lighted exit signs at each exit and stairwell lighting in on the emergency generator circuit. Emergency/night lights located in the corridors, life safety systems, and storm sump pumps are fed from the emergency generator panel located in room 904M. The emergency generator in room 904M is a 743 KVA natural gas driven generator.

## **ASBESTOS**

Asbestos containing materials were not identified since this building was built in 1997/8.

## **PERIMETER**

All of the sidewalks around the building are in good condition. Some sidewalks at the front stairs at the street are sloped to the steps and need to be sloped to the street to prevent frozen treads and a potential fall hazard.

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  
FISHER HALL #249**

- 1 The automatic openers on the north and south entrance doors stay opened for 10-15 seconds and should be adjusted to code requirements to conserve energy.  
Work Request #005444

**Minor Maintenance Projects (Less Than \$5000) INTERIOR  
FISHER HALL #249**

1. Epoxy seal the cracks in the concrete floor on the ground level.  
Customer Request #007713
2. Epoxy seal the crack in the concrete column at the tunnel.  
Customer Request #007713

## BUILDING EVALUATION SUMMARY

### BUILDING INFORMATION

Fac # 249, Facility Name: *FISHER HALL*

Date: 12/30/98, Inspector: JAO, Year Constructed: 1996/98, Gross Sq. Ft: 131,807

Net Sq. Ft: 111,787, Replacement Cost: \$ 32,850,000 \*

### COMPONENT RATING

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST **	BUILDING COMPONENT REPLACEMENT COST	BUILDING COMPONENT CONDITION VALUE MULTIPLIER	BUILDING COMPONENT CURRENT VALUE
Foundation	12.30	4,039,396	98	3,972,471
Columns and Beams	9.04	2,969,730	98	2,920,528
Exterior Walls	6.51	2,139,332	98	2,101,510
Ext. Windows & Doors	3.26	1,069,666	98	1,048,377
Roofing & Flashing	6.07	1,993,895	98	1,950,888
Partitions & Doors	8.38	2,753,920	98	2,699,112
Wall Finishes	4.23	1,388,689	98	1,354,878
Floor Finishes	6.11	2,007,969	98	1,968,007
Ceilings & Finishes	4.84	1,590,424	98	1,558,772
Conveying	2.91	957,069	98	938,022
Plumbing	6.48	2,129,949	98	2,087,558
Heating	6.86	2,251,928	98	2,207,110
Cooling and Vent.	5.28	1,735,861	96	1,658,879
Elect. Serv. & Dist.	1.79	586,440	98	574,768
Lighting and Power	10.71	3,518,638	98	3,448,610
Safety Standards	5.23	1,717,095	98	1,675,288
<b>TOTALS</b>	<b>100.00</b>	<b>32,850,000</b>	<b>98</b>	<b>32,164,777</b>

### BUILDING RATING SUMMARY

Overall Building Rating = **98%**

\* Replacement Cost assigned January 1999 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 #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 4,039,396) x ( 98%) = \$ 3,972,471**

Possible	Condition	Component
Value	Value Multiplier	Value

**SYSTEM DESCRIPTION**

Sat Att

- a. Footings:**
- [ X ] [ ] Interior Footings/Piers .....*on caissons*
- [ ] [ ] Interior Footings/Bearing Walls .....
- [ X ] [ ] Perimeter Footings.....*on caissons*
- [ X ] [ ] Grade Beams ..... *between caisson*
- [ ] [ ] Piles .....
- [ X ] [ ] Caissons.....
- b. Foundation Wall Materials:**
- [ X ] [ ] Concrete Cast-in-place ..*on ground floor to the first floor*
- [ ] [ ] Concrete Block .....
- [ ] [ ] Stone .....
- [ ] [ ] Brick .....
- [ ] [ ] Other.....
- c. Waterproofing and Underdrain:**
- [ X ] [ ] Coating .....
- [ X ] [ ] Membrane.....
- [ ] [ ] Board .....
- [ X ] [ ] Drain Pipe..... *shown on drawings*
- d. Slab on Grade:**
- [ ] [ ] Plain.....
- [ ] [ ] Reinforced .....
- e. Ground/Basement Floor Slab:**
- [ ] [ ] Plain.....
- [ ] [ X ] Reinforced .....
- f. Special Substructures:**
- [ ] [ ] .....

**COMMENTS:**

*Noted cracks in the floors of the ground floor.*

## COLUMNS AND BEAMS

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 2,969,730) x (98%) = \$ 2,920,528**

Possible Condition Component  
Value Value Multiplier Value

### SYSTEM DESCRIPTION

**Sat Att**

**a. Columns and Beams:**

- Reinforced Concrete ..... *columns and beams*
- Precast Concrete.....
- Steel ..... *in the penthouse and roof*
- Fireproofing ..... *in penthouse and roof*
- Wood.....
- Other .....

**b. Floor Joists:**

- Concrete ..... *wafer and one-way*
- Steel ..... *under elevator room 1003*
- Wood .....
- Other .....

**d. Floor Decks:**

- Concrete Slab ..... *reinforced concrete*
- Precast Slab.....
- Metal Deck w/insulation.....
- Wood .....

**e. Roof Joists:**

- Concrete ..... *concrete flat roof around perimeter*
- Steel ..... *in penthouse roof*
- Wood .....

**f. Pitched Roof System:**

- Pitch [ ]3/12, [X]6/12, [ ]10/12.....
- Dormers .....
- Steel Purlins .....
- Wood Rafters .....
- Fireproofing .....
- Underlayment..... *nailer*
- Insulation..... *6" batt insulation between purlins*
- Ventilation .....
- Other ..... *double access door in copper roof*

**g. Flat Roof System:**

- Slope ..... *0.25" per foot*
- Concrete Deck..... *penthouse equipment room floor*
- Precast Slab.....
- Metal Deck w/concrete fill.....

- Metal Deck w/insulation.....
- Wood Deck.....
- Insulation ..... *1.2" & 2" insulation*
- Other.....

**COMMENTS:**

*Noted a crack in the north column at the ramp to Gerlach Hall.*

## EXTERIOR WALLS

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 2,139,332) x (98%) = \$ 2,101,510**

Possible	Condition	Component
Value	Value Multiplier	Value

**SYSTEM DESCRIPTION**

Sat Att

**a. Walls:**

- [ ] [ ] Concrete [ ]CIP [ ]PRECAST .....
- [ ] [ ] Concrete Block/brick.....
- [X] [ ] Brick [ ]MASONRY [X]VENEER .....
- [ ] [ ] Veneer.....
- [X] [ ] Window/Curtainwall ..... *first to second floor*
- [X] [ ] Metal Siding ..... *in center roof area*
- [X] [ ] Other .....*louvers at penthouse level*

**b. Wall Lintels Over Openings:**

- [ ] [ ] Concrete [ ]PRECAST [ ]CIP .....
- [X] [ ] Limestone .....*first to third floor*
- [X] [ ] Brick Masonry ..... *fourth to eight floor*
- [X] [ ] Steel .....
- [ ] [ ] Wood .....
- [ ] [ ] Other.....

**c. Wall Trim:**

- [X] [ ] Limestone .....*window sills, roof trim and accent trim*
- [X] [ ] Brick .....*brick rustication, frieze and corbelled*
- [X] [ ] Marble.....*base course and wall panels*
- [ ] [ ] Wood .....
- [X] [ ] Other..... *sculptured limestone inserts and scuppers*

**d. Finishes:**

- [X] [ ] Plain.....
- [X] [ ] Stucco .....*entrance soffits*
- [ ] [ ] Paint.....
- [ ] [ ] Parging.....
- [ ] [ ] Exposed Aggregate .....
- [ ] [ ] Drivit .....
- [ ] [ ] Other.....

**e. Exterior Wall Backing System:**

- [ ] [ ] Concrete.....
- [X] [ ] Concrete Block ..... *at garage and stairwells*
- [ ] [ ] Brick Masonry .....
- [ ] [ ] Ceramic Glazed Clay Tiles.....

- Metal Studs..... *insulation and building wrap system*
- Wood Studs .....

**COMMENTS:**

*All of the marble and limestone should be sealed.*

*The walls behind the brick are constructed of gypsum board, 6” batt insulation, and 1” of insulation with building wrap that separated during construction. Some of these areas not reinstalled properly may be contributing to the air leakage in the building.*

## EXTERIOR WINDOWS AND DOORS

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 1,069,666) x (98%) = \$ 1,048,377**

Possible	Condition	Component
Value	Value Multiplier	Value

### SYSTEM DESCRIPTION

Sat     Att

**a. Window materials:**

- [ ]     [ ]    Wood .....
- [X]    [ ]    Steel ..... *stainless steel above entrances*
- [X]    [ ]    Alum ..... *window frames*
- [ ]    [ ]    PVC .....
- [ ]    [ ]    Other .....

**b. Windows type & number:**

- [ ]    [ ]    Double Hung .....
- [X]    [ ]    Awning ..... *175 fixed light with lower awning*
- [X]    [ ]    Casement ..... *in window wall system*
- [ ]    [ ]    Pivoted.....
- [ ]    [ ]    Sliding .....
- [X]    [ ]    Fixed..... *114 light and spandrel glass windows*
- [X]    [ ]    Other ..... *2 stainless steel window walls*

**c. Window glazing:**

- [ ]    [ ]    Single pane .....
- [X]    [ ]    Double pane..... *on all windows*

**d. Window Wall and/or Store Front:**

- [ ]    [ ]    Store Front.....
- [X]    [ ]    Vestibule..... *at north and south entrances*
- [ ]    [ ]    Single pane .....
- [X]    [ ]    Double pane.....
- [ ]    [ ]    Other.....

**e. Door Materials:**

- [X]    [ ]    Wood ..... *north interior vestibule*
- [X]    [ ]    Steel..... *exit and garage doors*
- [X]    [ ]    Stainless Steel..... *north and south entrance doors*
- [X]    [ ]    Alum..... *south entrance doors to room 195*

**f. Doors type & number:**

- [X]    [ ]    Vestibule Double & 2 Single..... *at south entrance*
- [X]    [ ]    Vestibule Double..... *two sets at north entrances*
- [X]    [ ]    Double ..... *four sets at south room 195*
- [ ]    [ ]    Exit .....
- [X]    [ ]    Stair Exit..... *at north entrance*
- [X]    [ ]    Garage..... *at north entrance*

- Special .....
- g. Hardware:**
- Automatic opener .....
- Push Bar Openers wt Closures .....
- Key Cards .....

**COMMENTS:**

*Two of the doors off room 195 are French doors without panic hardware.*

*The automatic openers stay opened 10-15 seconds and need to be reset.*

# ROOFING

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 1,993,895) x (98%) = \$ 1,950,888**

Possible	Condition	Component
Value	Value Multiplier	Value

**SYSTEM DESCRIPTION**

Sat     Att

**a. Roof Covering:**

- [ ]    [ ]    Built-up [ ]asphalt [ ]Coal Tar [ ]Modified .....
- [ ]    [ ]    Built-up w/gravel [ ]asphalt [ ]Coal Tar .....
- [X]    [ ]    Modified asphalt Roll.....11,815 SF
- [ ]    [ ]    Asphalt Shingle .....
- [X]    [ ]    Copper .....9,000 SF
- [ ]    [ ]    EPDM.....
- [ ]    [ ]    Other.....

**b. Flashing:**

- [X]    [ ]    Materials: [X]Cu [ ]Galv [X]Al [ ]EPDM [ ]SS [ ]PVC..
- [X]    [ ]    Base .....1982 LF
- [X]    [ ]    Counter .....1383 LF
- [X]    [ ]    Cap..... 443 LF
- [X]    [ ]    Reglet..... in walls 330 LF
- [X]    [ ]    Valley & Ridge.....370 LF

**c. Gravel Stop & Edge Strips:**

- [X]    [ ]    Type [ ]SS [ ]Galv [X]Al [ ]Cu [ ]PVC ..... 115 LF

**d. Drainage:**

- [ ]    [ ]    Gutters w/ Exterior Downspouts .....
- [X]    [ ]    Scuppers w/o Exterior Downspouts .....
- [X]    [ ]    Drains w/ Interior Storm Drains ..... drains
- [X]    [ ]    Emergency Overflow..... through scuppers

**e. Parapets:**

- [ ]    [ ]    Concrete.....
- [X]    [ ]    Brick ..... above third floor and penthouse roof
- [ ]    [ ]    Precast .....
- [ ]    [ ]    Other.....

**f. Parapet Caps:**

- [X]    [ ]    Metal [ ]SS [ ]Galv [X]Al [ ]Cu [ ]PVC .....156 LF
- [ ]    [ ]    Tile .....
- [X]    [ ]    Limestone .....304 LF
- [ ]    [ ]    Precast .....
- [ ]    [ ]    Other .....

**h. Roof accessories:**

- [ ] Lightning Protection .....
- [ ] Roof Curbs .....
- [ ] Equipment Frames.....
- [ ] Pitch Pockets .....
- [ ] Other ..... *access double door*

**COMMENTS:**

*The roof is 1 years old and is in good condition.*

## PARTITIONS AND DOORS

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING:**  $(\$ 2,753,920) \times (98\%) = \$ 2,699,112$

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

**SYSTEM DESCRIPTION**

Sat     Att

**a. Partition Framing:**

- [ ]      [ ]     Concrete Block .....
- [ ]      [ ]     Clay Tile Block.....
- [ ]      [ ]     Glazed Clay Tile Block .....
- [ ]      [ ]     Masonry .....
- [ ]      [ ]     Wood Stud.....
- [ ]      [ ]     Metal Stud .....
- [ ]      [ ]     Other .....

**b. Special partitions and Walls:**

- [ ]      [ ]     Demountable.....
- [ ]      [ ]     Toilet ..... *Stainless Steel*
- [ ]      [ ]     Screen Walls..... *Stainless Steel*
- [ ]      [ ]     Glass .....
- [ ]      [ ]     Gate.....
- [ ]      [ ]     Other .....

**c. Wall Material:**

- [ ]      [ ]     Concrete Block .....
- [ ]      [ ]     Plaster .....
- [ ]      [ ]     Drywall ..... *on metal studs throughout the building*
- [ ]      [ ]     Glass .....
- [ ]      [ ]     Wood Paneling .....
- [ ]      [ ]     Composite Paneling.....
- [ ]      [ ]     Steel Panels.....
- [ ]      [ ]     Tile/Glazed .....
- [ ]      [ ]     Other .....

**d. Interior Doors & Frames:**

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

**e. Hardware:**

- [ ] Door  Knobs  Levers .....
- [ ] Door Closures .....
- [ ] Kick/Push Plates .....
- [ ] Security & Detection .....*some door key card locks*
- [ ] Automatic Openers .....
- [ ] Fire Door Magnets .....
- [ ] Other .....

**COMMENTS:**

*Maintenance records indicate that door and/or door hardware are being adjusted and/or repaired on a continual basis.*

# WALL FINISHES

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

<b>COMPONENT RATING: (\$ <u>1,388,689</u>) x ( <u>98%</u>) = \$ <u>1,354,878</u></b>
Possible      Condition      Component Value      Value Multiplier      Value

## SYSTEM DESCRIPTION

Sat      Att

### a. Wall Finishes:

- [ X ]    [ ]    Paint .....
- [ X ]    [ ]    Vinyl Wall Coverings .....
- [ X ]    [ ]    Prefinished Paneling .....
- [ ]    [ ]    Cork .....
- [ X ]    [ ]    Wallpaper.....
- [ ]    [ ]    Ceramic Glazed Tile .....
- [ X ]    [ ]    Marble.....
- [ ]    [ ]    Stone .....
- [ X ]    [ ]    Trim & Wainscot .....
- [ ]    [ ]    Decoration.....
- [ ]    [ ]    Glass.....
- [ X ]    [ ]    Other ..... *wood chair rails and cornice trim*

## COMMENTS:

*none*

## FLOOR FINISHES

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

<b>COMPONENT RATING: (\$ <u>2,007,969</u>) ( <u>98%</u>) = \$ <u>1,968,007</u></b>						
<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. Carpet:**
- [ ]     Rolled ..... *predominate throughout*
- [ ]     Tile.....
- b. Concrete Topping:**
- [ ]     Clear Sealant..... *in equipment rooms*
- [ ]     Antislip.....
- [ ]     Epoxy..... *on penthouse equipment room*
- c. Resilient:**
- [ ]     Vinyl Composition Tile.....
- [ ]     Vinyl/Plastic Tile.....
- [ ]     Asphalt Asbestos Tile.....
- [ ]     Linoleum Tile.....
- [ ]     Vinyl Roll.....
- [ ]     Rubber.....
- [ ]     **d. Ceramic Tile** [ ]Mosaic [X]Quarry [ ]Pavers .....
- [ ]     **f. Masonry** [X]Marble [ ]Granite [ ]Slate [ ]Brick.....
- [ ]     **g. Terrazzo** [X]Marble [X]Granite .....
- [ ]     **h. Wood** [ ]Tiles [ ]T&G Hardwood [ ]Planking .....
- [ ]     **i. Pedestal** [ ]Vinyl Tiles [X]Grills [ ]Supply Air [ ]Vent..
- j. Base Molding:**
- [ ]     Vinyl.....
- [ ]     Wood ..... *predominate throughout*
- [ ]     Terrazzo.....
- [ ]     Ceramic Tile ..... *restrooms*
- [ ]     Masonry..... *marble ground and first floor*

**COMMENTS:**

*Floor finishes are in good condition.*

## CEILINGS AND FINISHES

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 1,590,424) x (98%) = \$ 1,558,772**

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

### SYSTEM DESCRIPTION

Sat    Att

**a. System Type:**

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

**b. Materials:**

- [ ]    Drywall ..... *in some halls and entry ways*
- [ ]    Plaster .....
- [ ]    Mineral Fiber Board ..... *predominate throughout*
- [ ]    Fiberglas Board.....
- [ ]    Cementitious Fiber Board.....
- [ ]    Metal Pan Tile .....
- [ ]    Other .....

**c. Finishes:**

- [ ]    Paint.....
- [ ]    Prefinished [X]Paint [ ]vinyl [ ]Fabric
- [ ]    Other .....

**d. Openings & Inserts:**

- [ ]    Air Distribution .....
- [ ]    Lighting Fixtures .....
- [ ]    Access Panels .....
- [ ]    Sprinklers.....
- [ ]    Smoke Detectors.....
- [ ]    Speakers.....
- [ ]    Skylights ..... *north stairwells*
- [ ]    Other ..... *motion detectors*

**COMMENTS:**

*none*

CONVEYING

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

<b>COMPONENT RATING: (\$ <u>957,069</u>) x (<u>98%</u>) = \$ <u>938,022</u></b>		
Possible Value	Condition Value Multiplier	Component Value

SYSTEM DESCRIPTION

Sat Att

a. Elevators:

- [ ] Number..... *Two Schindler*
- [ ] Type..... *Passenger*
- [ ] Speed..... *125 FPM*
- [ ] Capacity (lbs.)..... *3,000 Lbs.*
- [ ] Dimensions..... *66"x80"*
- [ ] Door Operation:  Center  To Side .....
- [ ] Accessible Codes.....
- [ ] Fire Codes.....

b. Elevators:

- [ ] Number..... *One Schindler*
- [ ] Type..... *Passenger/Freight*
- [ ] Speed..... *125 FPM*
- [ ] Capacity (lbs.)..... *3,500 Lbs.*
- [ ] Dimensions..... *66"x80"*
- [ ] Door Operation:.....
- [ ] Door Operation:  Center  To Side .....
- [ ] Accessible Codes.....
- [ ] Fire Codes.....

c. Lifts and Hoists:

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

d. Moving Stairs and Walks:

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

e. Conveyors:

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

COMMENTS:

*The elevators are ADA compliant and have voice communication with the front lobby.*

## MECHANICAL/PLUMBING

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 2,129,949) x (98%) = \$ 2,087,558**

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

### SYSTEM DESCRIPTION

Sat     Att

**a. Services Available:**

- [ X ]    [   ]    Cold Water .....3" domestic and 8" fire
- [ X ]    [   ]    Backflow Valve .....4" in room 002M
- [   ]    [ X ]    Hot Water .....2" in room 002M
- [ X ]    [   ]    Natural Gas .....2.5" to room 904M
- [ X ]    [   ]    Compressed Air.....
- [ X ]    [   ]    Other ..... 2.5" in room 002M to lawn sprinklers

**b. Piping & Fittings:**

- [ X ]    [   ]    Cast Iron .....sanitary and storm
- [   ]    [   ]    Duroiron .....
- [ X ]    [   ]    Copper Pipe .....water piping
- [ X ]    [   ]    Copper Tubing.....on control air
- [ X ]    [   ]    Steel .....on gas,standpipe and sprinklers
- [   ]    [   ]    Galv. Steel .....
- [   ]    [   ]    Other.....

**c. Water Heaters:**

- [   ]    [   ]    Gas.....
- [   ]    [   ]    Steam Converter/Tank.....
- [ X ]    [   ]    Steam Instantaneous .....2" DHWS & 3/4" HWR
- [   ]    [   ]    Central Hot Water.....

**d. Drainage:**

- [ X ]    [   ]    Storm Drains.....1@8", 1@10" to the north
- [ X ]    [   ]    Sanitary Drainage .....1@8"San to the south
- [ X ]    [   ]    Floor Drains .....
- [   ]    [   ]    Sump Pumps .....storm duplex in room 004M

**e. Fixtures: Number**

- [ X ]    [   ]    Water Closets .....45
- [ X ]    [   ]    Urinals .....9
- [ X ]    [   ]    Lavatory Sinks .....36
- [ X ]    [   ]    Kitchen Sinks .....7
- [ X ]    [   ]    Service Sinks .....9
- [   ]    [   ]    Showers .....
- [ X ]    [   ]    Electric Water Coolers .....9

- f. Sprinkler Systems:**
- Wet ..... *throughout the building*
- Dry..... *in penthouse and loading dock*
- Carbon Dioxide .....
- Halon .....
- g. Standpipe Systems:**
- Wet Dry .....
- Fire Hose Valves 2.5" 1.25" ..... *in stairwells*
- Valve Cabinets..... *need handles installed*

**COMMENTS:**

*The main water valve for the domestic water piping is in room 002M.*

*The main water valve for the standpipe piping is in room 002M.*

*Door handles need to be installed on some fire valve cabinets by the contractor.*

*The domestic hot water three-way valve is not working properly and needs to be repaired by the contractor.*

## MECHANICAL/HEATING

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

<b>COMPONENT RATING: (\$ 2,251,928) x (98%) = \$ 2,207,110</b>						
<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. Heat Source:**
- [ X ]    [   ]    Central Plant Steam.....6" HPS from the south tunnel
- [   ]    [   ]    Central Plant Hot Water .....
- b. System Type:**
- [   ]    [   ]    Steam .....
- [ X ]    [   ]    Hot Water ..... 6" heating hot water
- [ X ]    [   ]    Warm Air .....
- c. Air Handling Units:**
- [   ]    [   ]    Multizone [ ]Preheat [ ]Heating [ ]Reheat.....
- [   ]    [   ]    Dual Duct [ ]Preheat [ ]Heating [ ]Reheat.....
- [   ]    [   ]    Make-up Air [ ]Preheat [ ]Heating [ ]Reheat .....
- [ X ]    [   ]    Variable Volume Air [ ]Preheat [ X]Heating [ ]Reheat .....
- [ X ]    [   ]    Constant Volume Air [ ]Preheat [ ]Heating [ X]Reheat.....
- [   ]    [   ]    Other .....
- d. Air Filters:**
- [ X ]    [   ]    Prefilter[ ]Multi [ ]DDAHU [ ]MUAHU [ X]VAVAHU [ X]CAV
- [ X ]    [   ]    Bagfilter[ ]Multi [ ]DDAHU [ ]MUAHU [ X]VAVAHU [ X]CAV
- [   ]    [   ]    Other .....
- e. Space Equipment:**
- [   ]    [   ]    Radiators.....
- [ X ]    [   ]    Convectors.....
- [ X ]    [   ]    Unit Heaters..... in equipment rooms and dock
- [ X ]    [   ]    Reheat Coils ..... on some VAV boxes
- [ X ]    [   ]    VAV Boxes ..... VAV throughout building
- [   ]    [   ]    CAV Boxes.....
- [   ]    [ X ]    2-Pipe Fan Coil..... at entrances
- [ X ]    [   ]    Other .....electric reheat on computer room unit
- f. Control Type:**
- [ X ]    [   ]    [ ]Pneu [ ]Electric [ X]DDC [ ]DDC upgrade .....
- [ X ]    [   ]    Compressed Air ..... for pneumatic operators

### COMMENTS:

*The fan coil units at the south entrance are very noisy and should be replaced.*  
*The contractor needs to repair the leaks in the convector heating that are showing up.*

## COOLING/VENTILATING

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING:**  $(\$ \underline{1,735,861}) \times (\underline{96\%}) = \$ \underline{1,658,879}$

Possible Value	Condition Value Multiplier	Component Value
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**SYSTEM DESCRIPTION**

Sat    Att

- a. System/Capacity:**
  - [ ] Central Chilled Water System .10" from the south tunnel
  - [ ] Water .....315 ton
  - [ ] Glycol .....
- b. Chillers Capacity/Year/Refrigerant/Manufacturer:**
  - [ ] Centrifugal .....
  - [ ] Reciprocating.....
  - [ ] Absorption .....
  - [ ] Other .....central chilled water loop
- c. Condenser Side:**
  - [ ] Type/Capacity CW DX .....
  - [ ] Other.....
- d. Air Handling Units:**
  - [ ] Multizone CW DX HUMD.....
  - [ ] Dual Duct CW DX HUMD.....
  - [ ] Make-up Air CW DX HUMD.....
  - [ ] Variable Volume CW DX HUMD.....
  - [ ] Constant Volume CW DX HUMD.....
  - [ ] Other.....
- 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 .....
  - [ ] Other .....
- g. Distribution Boxes:**
  - [ ] VAV FC REHEAT.....
  - [ ] CAV FC REHEAT.....
  - [ ] DUAL DUCT FC REHEAT .....
- h. Special Systems:**
  - [ ] Type.....
  - [ ] Capacity.....

**i. Control Systems:**

- [ ]  Pneu  Electric  DDC  DDC Upgrade .....
- [ ] Compressed Air..... *for pneumatic operators*

**j. Fans:**

- [ ] Exhaust equipment ..... *8 general exhaust fans*
- [ ] Recirculating..... *three RA fans*

**COMMENTS:**

*There are problems with the heating and heating controls in several areas that need to be resolved by the control contractor.*

# ELECTRICAL SERVICE AND DISTRIBUTION

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

<b>COMPONENT RATING:</b> (\$ <u>586,440</u> ) x ( <u>98%</u> ) = \$ <u>574,768</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
<i>Cutler Hammer Air</i>	<i>1000/1500</i>	<i>480/277</i>	<i>room 003M</i>

### b. Distribution System:

1. Motor Control Center (MCC) Room 002M & 906M  
Panelboard  Fused,  Circuit Breakers  
Voltage  480/3,  277/3,  208/3,  240/1  
Amperage  1600A,  800A,  600A,  400A,  200A
2. Lighting Room 002M & 906M  
Panelboard  Fused,  Circuit Breakers  
Voltage  480/3,  277/3,  208/3,  240/1  
Amperage  800A,  400A,  250A,  200A,  150A,  100A
2. Building Power Room 002M & 906M  
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 002M & 906M  
Panelboard  Fused,  Circuit Breakers  
Voltage  480/3,  277/3,  208/3,  240/1  
Amperage  1600A,  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 003M and 904M

UPS Room 003M

### e. Emergency Generator: 743 KVA in room 904M

**COMMENTS:**

*A 200 amp circuit breaker needs to be replaced by the contractor.*

*A 1600 amp 480/277 back-up circuit ties this transformer to the one in Gerlach Hall.*

## ELECTRICAL LIGHTING AND POWER

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 3,518,638) x (98%) = \$ 3,448,610**

Possible	Condition	Component
Value	Value Multiplier	Value

**SYSTEM DESCRIPTION**

Sat    Att

- a. Lighting (lamp type):**
- [ ]    [ ]    Fluor 40 watt.....
- [X]    [ ]    Fluor 32 watt.....
- [X]    [ ]    Fluor Can..... *in entrances and halls of the building*
- [X]    [ ]    Incandescent ..... *some wall lighting*
- [X]    [ ]    HID [ ]Mercury [ ]HPS [X]Metal Halide .....*exterior*
- [X]    [ ]    Low Voltage (12V)..... *display cases*
- [ ]    [ ]    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.....
- [X]    [ ]    GFIC Breakers.....
- [X]    [ ]    Switches.....
- [X]    [ ]    Cover Plates.....
- c. Special:**
- [X]    [ ]    Lightning Protection.....
- [X]    [ ]    Communication [X]Clock [ ]Public Address [ ]Bells.....
- [X]    [ ]    Alarm [X]Fire [X]Security.....
- [X]    [ ]    Telecommunication [X] Phones [X]Data [X]Cable TV...
- [X]    [ ]    Data Systems.....
- [X]    [ ]    Fiber Optics.....
- [X]    [ ]    Security..... *motion detectors*
- [X]    [ ]    UPS circuit backup..... *to computers*

**COMMENTS:**

*none*

## SAFETY STANDARDS

FAC #: 249

DATE: 12/30/98

INSPECTOR: JAO

**COMPONENT RATING: (\$ 1,717,095) x (98%) = \$ 1,675,288**

Possible	Condition	Component
Value	Value Multiplier	Value

**SYSTEM DESCRIPTION**

Sat    Att

**a. Exits:**

Stair Construction:

- [ ]    [ ]    concrete .....
- [X]    [ ]    steel ..... *with terrazzo fill*
- [ ]    [ ]    wood.....
- [X]    [ ]    Number of Exit Stairs..... *one*
- [X]    [ ]    Number of Other Exits ..... *five*

**b. Fire Rating:**

- [X]    [ ]    Construction Type: IX II III IV V VI.....
- Building Height: *135 ft., 8 stories plus ground & penthouse*
- Floor height: 16' ground/first, 12' 2<sup>nd</sup>-8<sup>th</sup>

**c. Extinguishing Systems:**

- [X]    [ ]    Portable.....
- [X]    [ ]    Standpipe ..... *in stairwells*
- [ ]    [ ]    Hose Cabinets.....
- [ ]    [ ]    Hoses .....
- [X]    [ ]    Sprinklers..... *100% coverage*
- [ ]    [ ]    Gas Suppression .....
- [ ]    [ ]    Other.....

**d. Detection & Alarm Systems:**

- [X]    [ ]    Pull Stations.....
- [ ]    [ ]    Bells.....
- [X]    [ ]    Horns .....
- [X]    [ ]    Strobes .....
- [X]    [ ]    Annunciator Panel .. *003M with remote panel at entrance*
- [X]    [ ]    Smoke Detectors.....
- [X]    [ ]    Halls .....
- [X]    [ ]    Elevators.....
- [X]    [ ]    Rooms .....
- [X]    [ ]    Equip Rooms.....
- [X]    [ ]    Ducts .....

**e. Lighting Systems:**

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

- Emergency Generator ..... *in room 904M*
- f. Lightning Protection**

**COMMENTS:**

*none*



## BUILDING WARRANTY ITEMS

The following items were sent from the field office to the Department of Physical Facilities and the OSU Architect on the dates shown.

**Date:** Fri, Jul 30, 1999  
**Subject:** COB open issues

August 3, 1999 is the 1-year anniversary of substantial completion of Fisher and Gerlach Halls. The following information is to document issues that remain open.

We have open warranty repair items, which are listed on the attachment "Warranty Issues." The attachment "KW Issues" lists other open issues with Kirk Williams and the "Design" attachment lists open design issues.

In addition to the attachments, the following list of items is still open.

- The ladder to the lower roof of Fisher is not safe. It is possible for someone to fall several floors through the stairwell.
- Teepe has not installed the condensate return pumps added to Fisher and Gerlach.
- We have not received As-Built drawings from any contractor.
- We have not received Operation Manuals from Teepe.
- Schindler has not completed installation of Gerlach elevator emergency recall.
- Access doors have not been installed for the sprinkler valves in Fisher.
- The heater added to Stair A in Gerlach has not been installed.
- The sidewalk at the Fisher north door does not have the proper grade to route water away from the steps.
- Restroom stall doors will not stay closed.

Plant Maintenance Engineer  
Department of Physical Facilities



Memo

**Date:** 7/9/99

**Re:** COB phase 1 design issues

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*I talked with Brian on 7/7 and he requested a list of possible design problems at COB phase 1. Would you please review the following list? After your review/revision of the list would you please forward it to Brian?*

- 1. The conference rooms on the south side of Fisher Hall are sub cooling. The rooms are equipped with VAV boxes and reheat coils. We can not supply hot water to the reheat coils without supplying the fin tubes on the south elevation. Korda is aware of this problem and is looking for a solution.*
- 2. The generator room and exhaust rooms have hot water unit heaters. When the generator is running, The airflow through the rooms will quickly equalize the room temperature to outside temperature. The unit heaters and hot water pumps are not on emergency power. This creates the possibility of freezing the coils in the heaters. We discussed this with Rick on 1/21/99. Rick was going to explore the possibility of removing the heaters and ducting heat into the rooms.*
- 3. Fisher Hall room 002M is excessively hot. The main steam station for the building is in this room and the temperature ranges from 105 to 110 degrees F. We also have electronic and control equipment in the room. The University Architect's Office is going to contract installation of a blower coil to cool the room.*
- 4. We have had difficulty in regulating room temperatures in the north bar area of Fisher Hall. I believe the main reason for the difficulties is poor balance of the building systems. The 1<sup>st</sup> through 3<sup>rd</sup> floors are equipped with cooling only VAV boxes and fin tube. This is similar to the tower offices, which are performing well. The street level offices do not have fin tube but do have reheat coils on the VAV boxes. The only way to know if the area will perform to design intent is to balance the building systems.*



Memo

**Date:** 6/23/99

**Re:** Kirk Williams Co.

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*The following list represents the most important outstanding issues with Kirk Williams Co.*

- ❖ *Air and water balance of Fisher and Gerlach by a certified contractor and any related repairs.*
- ❖ *As-Built drawings.*
- ❖ *Fire dampers.*
  - *Some fire dampers are not accessible.*
  - *Some fire dampers are not safely accessible.*
  - *Replace fusible links with the specified 212 degree link.*
- ❖ *Condensate return units.*
  - *The CRU in Fisher does not work properly.*
  - *The CRU in Gerlach has never been under load to determine proper operation.*
- ❖ *Desuperheater pumps.*
  - *Both pumps and motors have failed.*
  - *We should have an extended warranty.*
  - *Is the lining of the surge tank causing the problem?*
- ❖ *Direct Digital Controls*
  - *Computer graphics.*
  - *Telecommunications (alarm reporting).*
  - *Properly identify equipment in the DDC software.*
- ❖ *Correct the insulation problems on the main steam station at Fisher.*
- ❖ *Pump 7 is leaking and one of the vibration eliminators has ruptured a second time.*
- ❖ *The 70-15 steam reducing station in Gerlach.*
  - *Replace the 1/3 strainer.*
  - *The 1/3 side has stuck open 3 times. Find and correct the problem.*
- ❖ *Honor all warranties.*

## **Open Warranty Issues**

### **Buckeye**

1. Fisher switchgear breaker # 8 feeds lighting panels on S, 2 and 4. The breaker was tripping and the feed is now supplied through a spare breaker. This problem may be related to issues with the snow melt which are not resolved.
2. The emergency light test switch in room 041M Gerlach needs replaced.
3. Surge protection equipment indicator lights are failing. The light assembly is obsolete and should be replaced with LED assemblies. This is approximately 80% complete.
4. The VFD for AHU2 of Fisher will not run in the auto mode. The contractor trips frequently.
5. The MCC breaker for BC-1 of Fisher will not hold a load.
6. Several Fisher MCC contractors are stuck in the energized position.

### **Kirk Williams Co.**

1. Fisher room 255C has a rattle in the VAC box.
2. Change the descriptors of TEC's to properly identify the equipment being controlled.
3. Fin tube pump 7 has been leaking. The pump was recently repaired. Fin tube has not been required since the repair. When normal operation of the fin tube is required, we will confirm the repairs.
4. Insulation on the main steam station at Fisher needs repaired.
5. The condensate return unit at Fisher does not operate properly. The condensate return unit at Gerlach has never been under load to verify proper operation.
6. Pump 9 motor needs replaced.
7. The Gerlach 70-15 psi steam station 1/3 strainer needs replaced.
8. The lining of the condensate holding tank at Fisher is deteriorating.
9. Communication to the DDC system from outside cannot be established.
10. Vibration eliminator on the outside of pump 7 needs replaced.

### **Danis**

1. Snowmelt at the north entrance of Fisher is not working.
2. Fire doors to Gerlach suite 150 do not operate properly. Panic bar will not open south door.
3. Fire doors north of the Fisher 1<sup>st</sup> floor elevator lobby do not operate properly. Panic bar will not open west door.

### **Teepe**

1. Domestic hot water supply does not provide water that is hot enough (Fisher and Gerlach.)

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
AW .....	ACID WASTE
AHU .....	AIR HANDLING UNIT
ATT .....	ATTENTION
BLDG .....	BUILDING
BUR.....	BUILT UP ROOF
COND.....	CONDENSATE WATER
CAV .....	CONSTANT AIR VOLUME
CW .....	CONDENSER WATER OR CHILLED WATER
DCW .....	DOMESTIC COLD WATER
DDAHU .....	DUAL DUCT AIR HANDLING UNIT
DDC .....	DIRECT DIGITAL CONTROL
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
HHW .....	HEATING HOT WATER
HPS .....	HIGH PRESSURE STEAM (125 PSI)
HVAC.....	HEATING, VENTILATING AND AIR CONDITIONING
KV .....	KILOVOLTS
KVA .....	KILOVOLTS AMPS
KW .....	KILOWATTS
LF .....	LINEAL FEET
LPS .....	LOW PRESSURE STEAM (15 PSI)
MCC.....	MOTOR CONTROL CENTER
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)
SF .....	SQUARE FEET
S/P .....	STAND PIPE
SY.....	SQUARE YARDS
TR.....	TERMINAL REHEAT
V .....	VOLTS
VAV .....	VARIABLE AIR VOLUME

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