

FACILITY AUDIT REPORT

GERLACH HALL

#250

JANUARY 30, 1999



GERLACH HALL

Prepared by: Jack O'Dea Jr.
The Ohio State University
Department of Physical Facilities
Division of Resource Management

GERLACH HALL
Table of Contents

EXECUTIVE SUMMARY FOR GERLACH HALL	3
GENERAL BUILDING INFORMATION	4
BUILDING SYSTEMS INFORMATION	5
GERLACH HALL NARRATIVE	7
BUILDING EVALUATION SUMMARY	14
FOUNDATIONS	15
COLUMNS AND BEAMS	16
EXTERIOR WALLS	18
EXTERIOR WINDOWS AND DOORS	20
ROOFING	22
PARTITIONS AND DOORS	24
WALL FINISHES	26
FLOOR FINISHES	27
CEILINGS AND FINISHES	28
CONVEYING	29
MECHANICAL/PLUMBING	30
MECHANICAL/HEATING	32
COOLING/VENTILATING	33
ELECTRICAL SERVICE AND DISTRIBUTION	35
ELECTRICAL LIGHTING AND POWER	36
SAFETY STANDARDS	37
BUILDING PERIMETER EVALUATION	38
BUILDING WARRANTY ITEMS	39
BUILDING AUDIT METHODOLOGY	44
ABBREVIATIONS	46
APPENDIX	47

EXECUTIVE SUMMARY FOR GERLACH HALL

Gerlach Hall houses offices, conference rooms and graduate classrooms 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 68,250 SF. The three-story building with basement was built for graduate student offices, conference rooms and graduate classrooms. The building shares various utilities, such as electrical power distribution, steam and chilled water feeds from Fisher Hall. A tunnel system connects Gerlach Hall to Fisher Hall and eventually will be connected to all six buildings in the College of Business complex. Since the faculty and staff have occupied the building some 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 the report under building warranty items.

PROPOSED MAINTENANCE PROJECTS

GERLACH HALL #250

A. Corrective Maintenance Projects:	Control No
1.	\$
.....	
Sub Total	none
B. Building Improvement/Addition Projects:	
1.	\$
.....	
Sub Total	none
C. Building Component Replacements expected within the next 5-10 years:	
1.	\$
.....	
Sub Total	\$
Total Cost for all Projects.....	none

GENERAL BUILDING INFORMATION

GERLACH HALL #250

BUILDING ADDRESS: *2108 Neil Avenue*

GROSS SQ. FT.: *68,250*

NET ASSIGNABLE SQ. FT.: *58,168*

MECHANICAL/CUSTODIAL AREA SQ. FT.: *9,289*

YEAR OF CONSTRUCTION: *1997/1998*

YEAR OF LAST RENOVATION: *none*

NUMBER OF STORIES/BASEMENT: *Three stories with basement*

AIR CONDITIONING (Percentage): *100%*

CURRENT USE: *The Fisher College of Business*

TYPE OF CONSTRUCTION: *Steel with Masonry Skin*

ESTIMATED REPLACEMENT COST: *\$ 17,010,000 **

COST PER GROSS SQUARE FEET: *\$ 249.23*

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

OVERALL BUILDING CONDITION: *Satisfactory ***

NUMBER OF EXIT STAIRWAYS: *Two (2)*

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

GERLACH HALL #250

HEATING:

Source – *Power plant*

Type Heating System – *Hot water*

Main Steam Feed (Line size, valve location) – *4” MPS to room 018M*

Building Htg. Water (line size, valve location) – *6” in room 018M*

VENTILATION SYSTEM: *Powered exhaust and VAV systems*

COOLING:

BLDG. *100%*, Central Chilled Water: *6” 150 Ton to room 018M*

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

HVAC CONTROL SYSTEM: *DDC with electric and pneumatic operators*

ELECTRIC:

Source	Size (KVA)	Primary/Secondary Switchgear & Main Disc. (Rm.)
<i>107/307</i>	<i>750\1125</i>	<i>13,200/ 480/277</i>
		<i>051M</i>

PLUMBING SERVICES:

Water (size, valve location) – *8” room 018M, 8” to fire, 2.5” to domestic*

Gas (size, valve location) – *none*

Domestic Hot Water (size, valve location) – *2” DHWS, 1” DHWR room 018M*

Compressed Air (size, location) – *3/4” in room 018M*

SEWERS:

Storm - *1@8”, 1@10”, Sanitary -1@6”, Combined Storm/San-0*

METERS:

Gas (size, location) – *none*

Water (size, location) – *2.5” in room 018M*

Electric (location) - *room 051M*

ALARM SYSTEMS:

Fire Alarm room *051M*, Remote Panel Location at entrance *x106c*

Fire Pump @ GPM, Pump Location-

Sprinkler, Valve Location Room *018M*,

100%, Partial, Limited

Strobes, Bells Horns in Halls, Rooms

Other Alarms – *equipment*

ELEVATORS:

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

EMERGENCY GENERATOR:

Size- *none*

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

GERLACH HALL NARRATIVE

HISTORY

Gerlach Hall houses offices, conference rooms and graduate classrooms for 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 68,250 SF. The three-story building with basement was built for graduate student offices, meeting rooms and graduate classrooms. The building shares various utilities, such as electrical power distribution, steam and chilled water feeds from Fisher Hall. A tunnel system connects Gerlach Hall to Fisher Hall and eventually will be connected to all six buildings in the College of Business complex.

The building appears to basically be functioning as designed, at this time. However, since the building was occupied before construction was complete, some items noted in this report need to be tested, repaired or replaced by the responsible contractor. 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 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 overall 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 58,168 SF, is as follows; Lecture/Classrooms 25.8%, General Offices 9.4%, Administrative and Staff offices 8.7%, Student Services 14.1%, Mechanical 10.8% Custodial/Toilet 5.2%, and Circulation 26.0%.

PRIMARY SYSTEMS

The structural components of this building consist of reinforced concrete on bedrock with concrete walls on the perimeter and center interior wall up to the first floor level. These support the steel columns and beams that support the metal pan reinforced concrete floors up to the third floor. The roof structural components consist of steel columns, beams and purlins that support the steel metal deck roof structure. These form the basic skeletal components of this three-story building with basement.

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 or metal studs with insulation to form the exterior walls. Openings in the brick for windows, window walls and entrance doors are accented with limestone, aluminum headers, brick Jack arches 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. Columns from the second floor to the roof overhang accent the south side of the building. The roof level has metal studs with insulation and copper siding on the shed roof over the exhaust and fresh air intake louvers. Metal accent supports with louvers are located under the copper shed roof structure.

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 on the first floor. The window wall system with spandrel glass panels at the second floor level consists of fixed double glazed upper windows with awning windows that are installed in aluminum frames. The third floor windows consist of fixed double glazed windows with casement windows that are installed in aluminum frames. The front window wall system over the doors consists of fixed double glazed windows that are installed in aluminum frames. Some of the glass weather-stripping is being pushed out of the frame due to thermal expansion and needs to be repaired. The windows have been reported to leak air and water and are to be tested by the contractor to determine what repairs are needed.

Three double doors at the south entry are aluminum with glass inserts and storefront glass panels forming a vestibule to the brick wall and are in good condition. The inner double door is wood with glass inserts. One double door at the north entry is aluminum with glass inserts forming a vestibule to the brick wall and is in good condition. The inner double doors are wood with glass inserts. Another double door is located at the southwest entry and is aluminum with glass inserts forming a vestibule with inner double doors to the brick wall. There are two single steel stair exit doors to the west and southeast and one single steel exit door to the north. 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 roof consist of steel beams and purlins with a steel deck, insulation, nailer and a sloping standing seam copper roof. The perimeter gutter roof and flat roofs over the stairwell and over the columns consists of steel beams and purlins with a steel deck, insulation board, and modified roll roofing 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. The brick parapet walls with limestone scuppers and limestone parapet cap are in good condition.

INTERIOR SYSTEMS

The metal pan reinforced concrete floors and steel columns of this building are enclosed with concrete block at stairwells or metal studs and insulation or metal studs with drywall that form perimeter walls, interior walls, halls, rooms and stairwells. The first floor lobby walls have wood paneling with a wood or marble base, wood wainscot and ceiling trim. Hall walls have vinyl wall covering with a wood base, wood wainscot and ceiling trim. Some areas have wood built in seating and paneling to the ceiling with built in television monitors. The partitions and walls are in good condition. As noted above, some rooms of the building 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 some mechanical rooms, halls and stairwells off finished hallways. Steel fire doors in steel frames are used at basement mechanical rooms, halls and in the tunnels. The metal fire doors in this building are in good condition. Some door and/or door hardware problems, where doors were not installed properly, are showing up in maintenance calls.

The floors in this building have marble tile and terrazzo flooring on the first floor and carpet in offices, conference rooms and classrooms of all other floors. Hallway floors have vinyl tile. 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 stairs and landings are metal framed with terrazzo fill and wood handrails and are in good condition.

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 and 1x2 grid with 2x2 and 1x2 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, 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 galvanized 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 018M 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. 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 elevators meet present access and fire codes. The elevators were operating and maintenance records did not indicate any problems with the elevators over the past year.

The 4" MPS line that feeds the building is tapped into the Medium Pressure Steam station located in Fisher Hall. The MPS steam line feeds the 70/15 PSI pressure reducing station in room 018M in Gerlach Hall. The (LPS) Low Pressure Steam is piped to the hot water heat exchanger in room 018M from the 70/15 PSI pressure reducing station. The low pressure steam heats the hot water that is then pumped to the air handling unit, hot water reheat coils, fan coil units at entrances, convectors under windows and unit heaters. The heating system was operating at the time of the site visits. Two variable speed heating hot water pumps located in room 018M supply heating water to the building. Two condensate lift stations are to be installed in room 018M to move condensate from the hot water heat exchanger to the receiver and from the receiver to Fisher Hall.

Two variable speed chilled water pumps located in room 018M supply chilled water from the 6" chilled water line that is tapped off the 10" campus chilled water loop in Fisher Hall to the VAV air handling unit cooling coils and one fan coil unit in Gerlach Hall. About 150 tons of cooling is provided to the building.

The building heating, ventilation, and air conditioning system is a high velocity (VAV) variable air volume system. The VAV air handling unit with hot water preheat, heating and chilled water coils, filters and steam humidifiers is located in room 018M. The VAV air handling unit supplies air to VAV boxes, VAV fan coil boxes or VAV boxes with reheat coils located throughout the building. A variable speed motor controller determines the systems fan air volumes. A ducted system returns air to the air handling unit 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 (electrical room) have a constant air volume (CAV) unit with a chilled water coil located in the space.

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 contractor.

There are eight general exhaust fans located throughout the building. Each unit removes air from restrooms, equipment rooms, common areas and conference rooms.

ELECTRIC

The Buckeye substation circuit number 107/307 feeds the 13.2 KVA switches located in room 003M of Fisher Hall that supplies the electrical service to Gerlach Hall and other buildings in the Fisher College of Business complex. The Buckeye substation circuit numbers 107/307 feeds the 750/1125 KVA 480/277 volt transformer located in room 051M that supplies the electrical service to Gerlach Hall. The 480/277-volt switchgear located in room 051M feeds the MCC panels in room 018M and the lighting distribution panels in room 051M. Subpanels are located throughout the building in electrical closets. The 208/120-volt switchgear located in room 051M feeds the UPS power supply and power distribution panels located on all floors. Panel sizes vary throughout the building depending on the load. At about 11 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 with a 50KVA @ 90 Min. UPS back up. A 1600 amp 480/277 back-up circuit ties this transformer to the 1000KVA transformer in Fisher Hall.

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. Some areas are illuminated with HID fixtures. There are an adequate number of convenience outlets throughout the building.

SAFETY STANDARDS

Gerlach Hall is equipped with a fire alarm system consisting of manual pull stations at exits and stairwells and smoke detectors that provide fire annunciation from the panel in room 051M to the horns and strobes on all floors. A remote fire annunciation panel at the north front entrance displays the systems status. The wet standpipes and sprinkler systems to the building and the dry pipe for the attic sprinklers are fed from the valve in room 018M and appear to be in good condition. There are portable fire extinguishers located throughout the building. The 2.5" fire department hose valve connections in cabinets are located in the stairwells.

There are lighted exit signs at each exit and stairwell lighting with battery back up. Emergency/night lights located in the corridors, life safety systems, and sewage ejector pumps are fed from the emergency panel located in room 051M.

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 have snow melting heating elements to prevent freezing and potential fall hazards. The sidewalks under the building south walkway are concrete and marble panels and are in good condition.

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. The lighting in the south walkway needs to be checked for proper operation.

Minor Maintenance Projects (Less Than \$5000) EXTERIOR
GERLACH HALL #250

- 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
- 2 The lights under the south walkway need to be checked for proper operation.
Customer Request #007714

Minor Maintenance Projects (Less Than \$5000) INTERIOR
GERLACH HALL #250

1. The heating fan coil wood grills at the north and south entrance need to be repaired where they are warped or not fastened properly.
Customer Request #007715

BUILDING EVALUATION SUMMARY

BUILDING INFORMATION

Fac # 250, Facility Name: **GERLACH HALL**

Date: 01/30/99, Inspector: JAO, Year Constructed: 1997/98, Gross Sq. Ft: 68,250

Net Sq. Ft: 58,168, Replacement Cost: \$ 17,010,000 *

COMPONENT RATING

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST **	BUILDING COMPONENT REPLACEMENT COST	BUILDING COMPONENT CONDITION VALUE MULTIPLIER	BUILDING COMPONENT CURRENT VALUE
Foundation	8.57	1,457,109	98	1,432,968
Columns and Beams	9.67	1,644,118	98	1,616,878
Exterior Walls	6.96	1,184,388	98	1,163,449
Ext. Windows & Doors	3.48	592,194	98	580,408
Roofing & Flashing	6.49	1,103,871	98	1,081,902
Partitions & Doors	8.96	1,524,640	98	1,494,297
Wall Finishes	3.91	664,920	98	648,731
Floor Finishes	4.21	716,867	98	702,600
Ceilings & Finishes	5.18	880,499	98	862,976
Conveying	1.40	238,956	98	234,200
Plumbing	6.93	1,179,194	98	1,155,725
Heating	7.33	1,246,725	98	1,221,912
Cooling and Vent.	8.41	1,431,136	96	1,367,668
Elect. Serv. & Dist.	1.45	246,748	98	241,837
Lighting and Power	11.45	1,948,007	98	1,909,238
Safety Standards	5.59	950,628	98	927,482
TOTALS	100.00	17,010,000	98	16,642,271

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 #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,457,109) x (98%) = \$ 1,432,968

Possible	Condition	Component
Value	Value Multiplier	Value

SYSTEM DESCRIPTION

Sat Att

- a. Footings:**
- [X] [] Interior Footings/Piers *on bedrock*
- [] [] Interior Footings/Bearing Walls
- [X] [] Perimeter Footings..... *on bedrock*
- [X] [] Grade Beams *between some footers*
- [] [] Piles
- [] [] Caissons.....
- b. Foundation Wall Materials:**
- [X] [] Concrete Cast-in-place ... *from basement 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:

None.

COLUMNS AND BEAMS

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,644,118) x (98%) = \$ 1,616,878

Possible	Condition	Component
Value	Value Multiplier	Value

SYSTEM DESCRIPTION

Sat Att

a. Columns and Beams:

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

b. Floor Joists:

- Concrete
- Steel
- Wood
- Other

d. Floor Decks:

- Concrete Slab.....
- Precast Slab.....
- Metal Deck *reinforced concrete*
- Wood

e. Roof Joists:

- Concrete
- Steel
- Wood

f. Pitched Roof System:

- Pitch []3/12, [X]6/12, []10/12.....
- Dormers *shed type*
- Steel Purlins
- Wood Rafters
- Fireproofing
- Underlayment..... *nailler*
- Insulation..... *6" batt insulation between purlins*
- Ventilation
- Other

g. Flat Roof System:

- Slope *0.25" per foot on perimeter*
- Concrete Deck.....
- Precast Slab.....
- Metal Deck w/concrete fill.....

- [] Metal Deck w/insulation..... *around perimeter*
- [] Wood Deck.....
- [] Insulation *1.2" & 2" insulation*
- [] Other.....

COMMENTS:

None.

EXTERIOR WALLS

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,184,388) x (98%) = \$ 1,163,449

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 third floor*
- [X] [] Metal Siding *copper on shed roof*
- [X] [] Other *louvers at roof level*

b. Wall Lintels Over Openings:

- [] [] Concrete []PRECAST []CIP
- [X] [] Limestone*first to third floor*
- [X] [] Brick Masonry
- [X] [] Steel
- [] [] Wood
- [X] [] Other *aluminum header*

c. Wall Trim:

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

d. Finishes:

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

e. Exterior Wall Backing System:

- [] [] Concrete.....
- [X] [] Concrete Block *at stairwells*
- [] [] Brick Masonry

- Ceramic Glazed Clay Tiles.....
- Metal Studs..... *insulation and building wrap system*
- Wood Studs

COMMENTS:

All of the 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 #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 592,194) x (98%) = \$ 580,408

Possible Condition Component
Value Value Multiplier Value

SYSTEM DESCRIPTION

Sat Att

a. Window materials:

- [] [] Wood
- [] [] Steel
- [X] [] Alum..... *window frames*
- [] [] PVC
- [] [] Other.....

b. Windows type & number:

- [] [] Double Hung
- [X] [] Awning *49 fixed light with lower awning*
- [X] [] Awning .. *53 fixed light with lower awning and spandrel*
- [X] [] Casement *44 in classroom windows*
- [] [] Pivoted.....
- [] [] Sliding
- [X] [] Fixed..... *27 glass windows*
- [] [] Other.....

c. Window glazing:

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

d. Window Wall and/or Store Front:

- [] [] Store Front.....
- [X] [] Vestibule..... *at north entrance*
- [] [] Single pane
- [X] [] Double pane.....
- [] [] Other.....

e. Door Materials:

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

f. Doors type & number:

- [X] [] Vestibule Double *three at south entrance*
- [X] [] Vestibule Double *1 at north and southwest entrances*
- [X] [] Double *1 at southeast stair*
- [X] [] Exit *at north entrance*
- [X] [] Stair Exit..... *at northwest and southeast*

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

COMMENTS:

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

ROOFING

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,103,871) x (98%) = \$ 1,081,902

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 Roll3,625 SF
- [] [] Asphalt Shingle
- [X] [] Copper21,671 SF
- [] [] EPDM.....
- [] [] Other.....

b. Flashing:

- [X] [] Materials: [X]Cu []Galv [X]Al []EPDM []SS []PVC..
- [X] [] Base1614 LF
- [X] [] Counter807 LF
- [X] [] Cap..... 250 LF
- [X] [] Reglet..... in walls 807 LF
- [X] [] Valley & Ridge.....218 LF

c. Gravel Stop & Edge Strips:

- [X] [] Type []SS []Galv [X]Al []Cu []PVC 113 LF

d. Drainage:

- [X] [] Gutters w/ Exterior Downspouts 57 LF
- [X] [] Scuppers w/o Exterior Downspouts
- [X] [] Drains w/ Interior Storm Drains
- [X] [] Emergency Overflow..... through scuppers

e. Parapets:

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

f. Parapet Caps:

- [] [] Metal []SS []Galv []Al []Cu []PVC
- [] [] Tile
- [X] [] Limestone807 LF
- [] [] Precast
- [] [] Other

h. Roof accessories:

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

COMMENTS:

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

Some leaks were noted in the work orders that need to be repaired.

PARTITIONS AND DOORS

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,524,640) x (98%) = \$ 1,494,297

Possible	Condition	Component
Value	Value Multiplier	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 #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 664,920) x (98%) = \$ 648,731

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 #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>716,867</u>) x (<u>98%</u>) = \$ <u>702,600</u> <div style="display: flex; justify-content: space-around; font-size: small;"> <div style="text-align: center;">Possible Value</div> <div style="text-align: center;">Condition Value Multiplier</div> <div style="text-align: center;">Component Value</div> </div>

SYSTEM DESCRIPTION

Sat Att

- a. Carpet:**
- [] [] Rolled *predominate throughout*
- [] [] Tile.....
- b. Concrete Topping:**
- [] [] Clear Sealant..... *in equipment rooms*
- [] [] Antislip.....
- [] [] Epoxy.....
- c. Resilient:**
- [] [] Vinyl Composition Tile..... *in hallways*
- [] [] 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..... *marble first floor*
- [] [] Ceramic Tile..... *restrooms*
- [] [] Masonry..... *marble first floor*

COMMENTS:

Floor finishes are in good condition.

CEILINGS AND FINISHES

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 880,499) x (98%) = \$ 862,976

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
- [] Other *motion detectors*

COMMENTS:

*Several tiles are stained from water leaks and need to be replaced.
Fallen ceiling tiles 1/12/99.*

CONVEYING

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>238,956</u>) x (<u>98%</u>) = \$ <u>234,200</u>		
Possible Value	Condition Value Multiplier	Component Value

SYSTEM DESCRIPTION

Sat Att

a. Elevators:

- [] Number..... *One 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 #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,179,194) x (98%) = \$ 1,155,725

Possible	Condition	Component
Value	Value Multiplier	Value

SYSTEM DESCRIPTION

Sat Att

a. Services Available:

- Cold Water 2.5" domestic and 6" fire
- Backflow Valve 2.5" in room 018M
- Hot Water 2" in room 018M
- Natural Gas
- Compressed Air
- Other

b. Piping & Fittings:

- Cast Iron sanitary and storm
- Duroiron
- Copper Pipe water piping
- Copper Tubing on control air
- Steel on standpipe and sprinklers
- Galv. Steel victaulic water service
- Other

c. Water Heaters:

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

d. Drainage:

- Storm Drains..... 1@8" to the south, 1@10" to the north
- Sanitary Drainage 1@6" San to the south
- Floor Drains
- Sewage Pumps duplex east side room 018M
- Sump Pumps duplex west side room 018M

e. Fixtures: Number

- Water Closets 28
- Urinals 11
- Lavatory Sinks 26
- Kitchen Sinks 2
- Service Sinks 4
- Showers
- Electric Water Coolers 7

- f. Sprinkler Systems:**
- Wet *throughout the building*
- Dry..... *in attic area*
- 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 018M.

The main water valve for the standpipe piping is in room 018M.

Door handles need to be installed on some fire valve cabinets.

MECHANICAL/HEATING

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,246,725) x (98%) = \$ 1,221,912

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

SYSTEM DESCRIPTION

Sat Att

a. Heat Source:

- Central Plant Steam 4" MPS from Fisher Hall
- Central Plant Hot Water

b. System Type:

- Steam
- Hot Water 4" heating hot water
- Warm Air.....

c. Air Handling Units:

- Multizone Preheat Heating Reheat.....
- Dual Duct Preheat 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 DDAHU MUAHU VAVAHU CAV
- Bagfilter Multi DDAHU MUAHU VAVAHU CAV
- Other

e. Space Equipment:

- Radiators.....
- Convectors.....
- Unit Heaters..... in equipment rooms
- Reheat Coils on some VAV boxes
- VAV Boxes VAV throughout building
- CAV Boxes.....
- 2-Pipe Fan Coil.....at entrances
- Other VAV fan coil boxes

f. Control Type:

- Pneu Electric DDC DDC upgrade
- Compressed Air in room 018M

COMMENTS:

none

COOLING/VENTILATING

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,431,136) x (96%) = \$ 1,367,668

Possible	Condition	Component
Value	Value Multiplier	Value

SYSTEM DESCRIPTION

Sat Att

- a. System/Capacity:**
- [X] [] Central Chilled Water System6" from Fisher Hall
- [X] [] Water 150 ton
- [] [] Glycol
- b. Chillers Capacity/Year/Refrigerant/Manufacturer:**
- [] [] Centrifugal
- [] [] Reciprocating.....
- [] [] Absorption
- [] [] Screw
- 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.....
- [X] [] Variable Volume [X]CW []DX [X]HUMD.....
- [X] [] Constant Volume [X]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:**
- [X] [] VAV [X]FC [X]REHEAT.....
- [] [] CAV []FC []REHEAT.....
- [] [] DUAL DUCT []FC []REHEAT.....
- h. Special Systems:**
- [] [] Type.....
- [] [] Capacity.....

i. Control Systems:

- [] Pneu Electric DDC DDC Upgrade
- [] Compressed Air..... *in room 018M*

j. Fans:

- [] Exhaust equipment *9 general exhaust fans*
- [] Recirculating..... *one RA fan*

COMMENTS:

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

ELECTRICAL SERVICE AND DISTRIBUTION

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>246,748</u>) x (<u>98%</u>) = \$ <u>241,837</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
Cutler Hammer Air	750/1125	480/277	room 051M

b. Distribution System:

1. Motor Control Center (MCC) Room 018M
Panelboard Fused, Circuit Breakers
Voltage 480/3, 277/3, 208/3, 240/1
Amperage 1600A, 800A, 600A, 400A, 200A
2. Lighting Room 051M
Panelboard Fused, Circuit Breakers
Voltage 480/3, 277/3, 208/3, 240/1
Amperage 800A, 400A, 250A, 200A, 150A, 100A
2. Building Power Room 051M
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 051M
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 051M

UPS Room 051M

e. Emergency Generator: none

COMMENTS:

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

ELECTRICAL LIGHTING AND POWER

FAC #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ 1,948,007) x (98%) = \$ 1,909,238

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 #: 250

DATE: 01/30/99

INSPECTOR: JAO

COMPONENT RATING: (\$ <u>950,628</u>) x (<u>98%</u>) = \$ <u>927,482</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. Exits:

Stair Construction:

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

b. Fire Rating:

- [X] [] Construction Type: I__ II__ III X IV__ V__ VI__.
- Building Height: 44ft, 3 stories *plus basement*

c. Extinguishing Systems:

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

d. Detection & Alarm Systems:

- [X] [] Pull Stations.....
- [] [] Bells.....
- [X] [] Horns
- [X] [] Strobes
- [X] [] Annunciator Panel .. *051M 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 [X]BATTERY []EMC
- [X] [] Exit Lighting [X]BATTERY []EMC
- [X] [] Emergency Lighting []BATTERY [X]EMC
- [] [] Emergency Generator

f. Lightning Protection

COMMENTS: *none*

BUILDING PERIMETER EVALUATION

FAC #: 250

DATE: 01/30/99

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>north side</i> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Side..... <i>east and west</i> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Rear..... <i>south</i> |
| | | Steps |
| <input 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 |

b. Lawn and Landscaping:

- | | | |
|-------------------------------------|--------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Lawn |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Shrubs..... |
| <input checked="" type="checkbox"/> | <input 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..... |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Snow melt system..... <i>at sidewalks</i> |

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

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 1st through 3rd 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.

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 1st 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
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