

FACILITY AUDIT REPORT

FACULTY CLUB
181 South Oval Drive

#028



FACULTY CLUB

March 2005
Published April 2006

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EXECUTIVE SUMMARY

The Faculty Club was built in 1939/40 and occupied in July of 1940 with a gross area of 28,464 SF. The Faculty Club was originally built for meeting space, assembly areas, offices and a dining room. In 1965, a 1,677 SF addition was built on the southeast side of the building to expand the kitchen area. General interior repair and renovations of walls, ceilings, floors and doors on the east end of the building and a small addition of 2,576 SF were completed in 1991 bringing the total gross area to 32,717 SF.

The addition included a stairwell to the east and kitchen support space with a covered dock and elevator to the south. The renovations also included replacing the kitchens and equipment, a new chiller and air-handling unit coil, a new kitchen and restroom plumbing system, a new limited sprinkler system, a renovated building heating system and electrical upgrades. In 2003, the roof was replaced with copper roofs and flat modified roll roofing and in 2004, the steel framed windows were replaced with aluminum fixed double pane and awning windows that matched the older windows. The building is currently used by faculty club members and for meeting spaces for various organizations.

The original building and the addition are functioning as designed. The original building has held up extremely well; however, general maintenance projects need to be completed within the next five years to repair or replace normal wear items. These items when completed will protect and enhance the building performance and create a satisfying visual environment for faculty, staff and visitors.

PROJECTS

Proposed Maintenance Projects		
Corrective Maintenance Projects	Budget	Control #
1. Replace oversized desuperheater pump & control valve	\$ 10,000	08810
2. Remove, repair, reinstall entrance steps and side wall.	\$ 20,000	08811
3. Clean and seal limestone and brick front wall.	\$ 15,000	08812
4. Repair, clean and seal patio masonry brick wall.	\$ 18,000	08813
Subtotal	\$63,000	
Building Improvements/Addition Projects		
1. Install VFD on CW pump with the VAV cooling coils.	\$ 11,000	08819
2. Install VFD on air-handling unit with a VAV system.	\$ 5,000	08820
3. Install new patio on south side 020. (4,775 SF).	\$ 86,000	08814
Subtotal	\$102,000	
Component Replacements expected within next 5-10 years		
1. Replace McQuay water chiller and pumps	\$ 118,000	08815
2. Replace hydraulic seals & controls on the 1991 elevator	\$ 50,000	08816
3. Replace the 1940 cable elevator	\$ 200,000	0282
4. Replace VAV air-handling unit	\$ 166,000	08817
5. Replace two 2000 CFM make up air-handling units to kitchen with cooling.	\$ 32,000	08818
Subtotal	\$566,000	
Total cost for all projects	\$ 731,000	

Renovation Projects in Progress or Completed since last Audit

Corrective Maintenance Projects	Budget	Project #
1. Feasibility study	\$ 15,458	315-2004-909
2. Install three electrical circuits	\$ 1,795	5061-001529
3. Replace wood parquet floor, brick pavers and window screens	\$ 24,991	5061-002399
4. Replace roof in 2003	\$ 198,598	5062-PF5668
5. Replace windows in 2004	\$ 316,402	5062-PF2846
6. Repair chandelier	\$ 10,281	9986-6356
7. Install elevator door Restrictors	\$ 69,930	9986-6816
8. Replace one exterior door	\$ 17,000	9986-07277
9. Replace HVAC controls	\$ 29,050	9986-6243
10. Replace cooling tower	\$ 32,527	9986-07934
11. Tuckpoint Brick	\$ 50,000	9986-2865
12. Replace vertical wheelchair lift	\$ 19,000	9986-07947
13. Front entrance door repairs and replacement	\$ 50,000	9986-08308
Total cost for all projects	\$835,032	

Minor Maintenance Projects (<\$10,000)

Project	Request #
1. Repair the return air fan, control dampers and sequence on VAV air-handling unit.	509096
2. Clean all gutter and downspout debris in strainers and repair if necessary.	509097

GENERAL BUILDING INFORMATION

Building Name and Number: Faculty Club #028

Building Address: 181 South Oval Drive

Year of Construction: 1939/40

Year of Last Renovation: 1965 Building Addition (1,677 SF)

1991 Building Addition (2,576 SF)

Building Size:

Gross Square Feet: 32,717		
Net Square Feet: 28,311		Structure 4,406 S/F
Assignable Square Feet: 18,834	Mechanical/Common S/F: 9,477	

(Based on data from The Office of Facilities, Planning and Development, University Space Inventory System, 5/1/05)

Estimated Replacement Cost: \$6,070,000 *(assigned May 1, 2005, by The Office of Facilities Planning and Development,)*

Replacement Cost per Gross Square Feet: \$171.34

Current Use:

Department	Auxiliary Services	Mechanical/Common	Total
Business and Finance	66.5%	0.0%	66.5%
Common Areas	0.0%	22.9%	22.9%
Toilet/Custodial	0.0%	3.9%	3.9%
Mechanical	0.0%	6.7%	6.7%
Total	66.5%	33.5%	100.00%

(Based on data from The Office of Facilities Planning and Development, University Space Inventory System, 5/1/05)

Type of Construction: Steel-framed structure with masonry walls

Number of stories/basement: Two (2) stories plus basement & attic

Percent Air Conditioning: 40% *(source: The Office of Facilities Planning and Development in the University Space Inventory System, 5/1/05)*

Wheel Chair Accessibility: From the east stairwell to the first floor lift and elevator to all floors and lifts to assembly areas

Number of Exit Stairways: One (1)

Number of other Exits: Four (4)

Area Shop Responsibility: Southeast Shop

Overall Building Condition: Satisfactory *(The Office of Facilities Planning and Development, in the University Space Inventory)*

ASBESTOS SURVEY (1986): PEI Associates completed the Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report on Sept. 1986 that reported: Pipe insulation in room 015M, 010, room 040M, and tunnel.

BUILDING SYSTEMS INFORMATION

HEATING					
Source: McCracken Power Plant System: Steam Steam Feed: 2.5" to room 040M Building Heating Water: 4" in room 004M					
HVAC CONTROL SYSTEM					
Pneumatic, Electric and DDC system monitored by Building Automation Shop					
VENTILATION SYSTEM					
Modified MZ/VAV Air-handling Unit with powered exhaust					
COOLING					
Building: 40% Air Conditioned Chiller: 1991, McQuay, 120 ton, R-22, water cooled chiller room 004M)					
ELECTRIC					
Source	Size	Transformer	Low-volt Sw	High-volt Sw	Location
103/301	750 KVA	13,200/208/120	106M	GE-Air	Southwest pad Orton Hall
PLUMBING					
Water – 6" to room 015M, 3" to domestic Gas – 1.5" from tunnel room 040M Domestic Hot Water – 1.5" Domestic Hot Water System from room 040M Compressed Air – ½" in room 004M					
SEWERS					
Type	4 inches	6 inches	8 inches		
Storm		6			
Sanitary		6			
Combined Storm/Sanitary: yes					
METERS					
Gas – tunnel Water – in room 009 Electric – in room 106M					
FIRE ALARM SYSTEMS					
Fire Alarm panel location: in room 106M Remote fire alarm panel location: 106 Fire Pump: Sprinkler Valve: in room 009 (limited) Horns/Strobes: Yes Bells: Yes in original building					
BUILDING IP REPORTING SYSTEMS					
Remote reporting system: <input checked="" type="checkbox"/> MDI, <input type="checkbox"/> LENEL Panel location(s): 106M Systems Monitored: <input checked="" type="checkbox"/> Fire Alarm, <input type="checkbox"/> Card Access, <input type="checkbox"/> Security Alarms, <input type="checkbox"/> Environmental Alarms, <input checked="" type="checkbox"/> Elevator, <input type="checkbox"/> HVAC Data Sent To: <input type="checkbox"/> Local, <input checked="" type="checkbox"/> Department of Public Safety, <input checked="" type="checkbox"/> Service Center, <input type="checkbox"/> Key Control Other Reporting Systems: Monitor HVAC equipment to Building Automation Shop					
ELEVATORS					
Use	Manufacturer	Weight	Size	Type	Equipment/Controls
Passenger/Freight	Moseley	3,200#	60" x 84"	Hydraulic	Room 038M
Passenger	Warner	2,000#	54" x 84"	Cable	Room 015A
EMERGENCY GENERATOR					
Type	Total KVA/Volts	KW/Volts	KW/Volts	Location	
None					

NARRATIVE

History

The Faculty Club was built in 1939/40 and occupied in July of 1940 with a gross area of 28,464 SF. The Faculty Club was originally built for meeting space, assembly areas, offices and a dining room. In 1965, a 1,677 SF addition was built on the southeast side of the building to expand the kitchen area. General interior repair and renovations of walls, ceilings, floors and doors on the east end of the building and a small addition of 2,576 SF were completed in 1991 bringing the total gross area to 32,717 SF.

The addition included a stairwell to the east and kitchen support space with a covered dock and elevator to the south. The renovations also included replacing the kitchens and equipment, a new chiller and air-handling unit coil, a new kitchen and restroom plumbing system, a new limited sprinkler system, a renovated building heating system and electrical upgrades. In 2003, the roof was replaced with copper roofs and flat modified roll roofing and in 2004, the steel framed windows were replaced with aluminum fixed double pane and awning windows that matched the older windows. The building is currently used by faculty club members and meeting spaces for various organizations.

The building appears to be functioning as designed, at this time, and has held up well over the 65 years since built. However, some building components are approaching the end of their expected life cycle and will need to be replaced over the next five to ten years. Within the next ten years the original doors, VAV air-handling unit, some exhaust fans, the chiller and the original elevator will need to be replaced. The original elevator should be upgraded with a new motor, electronic controls and cab upgrades. The 1991 elevator hydraulic seals and some operators will need to be replaced within the next five to ten years. These items when completed will protect and enhance the building performance and create a satisfying environment for students, faculty, staff and visitors.

The building coordinator indicated that the occupants are satisfied with the overall condition and performance of the building systems but requested that attention be given to the items herein identified. A review of the work orders indicated that there are maintenance problems showing up in temperature controls, doors and door hardware, clogged toilets and leaking faucets.

Foundation

The structural components of the original building consist of reinforced concrete perimeter and interior spread footers with reinforced concrete walls up to the first floor level. The structural components of the additions consist of reinforced concrete perimeter footers with concrete block up to the first floor slab. The basement floor has a reinforced concrete slab on grade. There are no major signs of settlement or movement in the building foundation or structural supports of both buildings.

Columns & Beams

The basic skeletal components of this two-story building with basement and attic consist of concrete encased steel columns and beams that support the reinforced concrete joists and floors up to the attic level. The interior steel columns and beams on the attic floor support the wood roof rafters and girts of the central flat roof and sloped roofs. The 1965 addition on

the south side of the building matches the interior construction and exterior appearance of the original building. The 1991 addition on the southeast and east side of the original building consist of loadbearing masonry block walls that support precast reinforced concrete floors and flat roof structure or the attic floor. The sloping attic roof consists of wood rafters and wood sheathing on the precast concrete attic floor.

Exterior Walls

The exterior walls of the original building have face brick, limestone panels, shapes and veneers that were installed on masonry walls. The brick pattern is a Flemish bond with rowlock courses, while the trim at corners, doors and at the base consists of limestone blocks. Soldier and dentil courses of brick were installed at the fascia trim around the perimeter at the gutter and parapet walls. These complete the architectural elements that accent this building. Openings for windows and doors are accented with limestone at the front entrance or brick that form the head, sill and jambs. The exterior masonry brick is in good to fair condition. A project to tuckpoint loose mortar in the exterior brick walls is to be completed later this year. The limestone and trim should be cleaned and sealed to prevent staining.

Exterior Windows & Doors

The original building had steel framed casement, hopper and awning windows with single panes of glass. The windows were replaced in 2004 with energy efficient double pane aluminum windows to match the units removed. The new aluminum windows have multiple fixed panes of double-glazed glass and an operable window panel in aluminum framing. The new window composite consists of aluminum windows installed in steel frames with rubber thermal breaks that are attached to the building structure. The frames consist of rails or jambs, a header and a sill. The operable awning type windows are pivoted at the top with weather stripping around the edges and have a locking handle at the bottom.

The larger windows on the south and west side of the assembly rooms had the aluminum windows installed in the steel frames that consist of rails or jambs, a header and a sill and steel mullions that divide the unit. The window units have aluminum frames with multiple fixed panes of double-glazed glass and awning windows installed in the steel frames. There are granite spandrel panels between the units.

The window wall on the north side of this building consists of the original steel frames that are attached to the building structure. The frames consist of rails or jambs, a header and a sill. The window units have aluminum frames with multiple fixed panes of double-glazed glass. There are fixed aluminum windows installed in steel frames in the dormers on the roof.

Exterior Doors

The original double doors at the north entrance of the building are aluminum with glass inserts with transoms. The inner double doors are wood with glass inserts, beveled glass transoms and sidelights that form a vestibule. The exterior steel doors are to be replaced in the near future.

There is a single steel door six feet above grade on the east side of the 1991 addition that allows trash to be dumped into the dumpster. Another steel double door accesses the dock.

The 1991 east stairwell addition has a double door entrance with automatic openers to the north.

There are two original wood doors remaining at the exits from room 020 that are in good condition and were recently refinished.

Roofing, Flashing and Drainage

The original flat roof had an asphalt built-up-roof with gravel and the sloped roof had a copper standing seam roof with copper flashings and gutters. The original roofs, flashings, gutters and downspouts were replaced in 2002. The flat roof over the center has of a wood deck, insulation board and modified roll roofing installed with hot modified asphalt. The sloped roofs have a wood underlayment and a standing seam copper roof with copper valleys and ridges. There are north and south dormers in the sloping roof with fixed aluminum windows. The original parapet gutters with a copper trough pinned under the limestone parapet cap and counter-flashed to the copper roof were replaced with modified SBS roofing and counterflashing. Three parapet drains with interior downspouts to the storm drainage system were installed at the low spots of the trough. The sloped roofs have copper gutters tied to exterior copper downspouts that drain to cast iron storm drains on the exterior of the building through a copper cleanout with a strainer. Two copper gutters above the entrance drain to interior downspouts to the storm drainage system. The roof drainage system is in good condition.

The northwest copper downspout cleanout attached to the cast iron drain needs to be repaired. There have been some roof leaks since the new roof was installed that are being addressed.

The sloped roofs of the 1991 addition consist of wood rafters with a plywood underlayment and a standing seam copper roof. The flat roof over the southeast addition has a precast concrete deck, insulation board and glued down EPDM roofing with EPDM counter flashing. A flat roof over the 1991 elevator has a flat soldered seam copper roof. EPDM counterflashing was installed behind the new parapet wall above the front entrance.

Partitions & Wall Finishes

The masonry brick, clay block, concrete block, wood or metal stud walls form interior rooms that are finished with plaster or drywall. Walls in the original building have a plaster finish on brick, clay block or wood studs with a wood base and wood cornice trim in some rooms. Some rooms have wood chair rails, wainscot or paneling with a wood base. Other rooms have ornamental wood or plaster columns with wood or plaster trim. Rooms in the remodeled areas of the original building are separated with concrete block or metal studs and drywall with a painted finish.

Wall finishes consists of cloth wall covering, wallpaper, paneling or a painted finish. The restrooms have a 2x2 inch ceramic tile wainscot wall with a ceramic tile base, while kitchen areas have a 4x4 inch ceramic tile wainscot wall with a ceramic tile base. The partitions and wall finishes in the building are all in good to fair condition depending on the area.

Interior Doors

Many of the existing doors in the original building are wood doors in wood frames, while remodeled areas have wood or metal doors in metal frames. All of the doors appear to be in good to fair condition depending on the age. Metal fire doors in steel frames are used at stairwells. Some door and/or door hardware problems are showing up in maintenance calls. Lock mechanisms and door adjustments are beginning to fail and will require continued maintenance.

Floor Finishes

The original floors have carpet installed on concrete in offices, meeting and conference rooms, assembly areas and some hallways. Carpets in some meeting rooms are bordered with parquet wood or tongue and groove hardwood flooring. Throw rug type carpeting has been laid over some terrazzo and wood floors. Renovated rooms have vinyl tile in high traffic areas, 6x6 quarry tile in kitchens, prep and wash areas. The north stairs and landings are iron framed with terrazzo-filled pans, wood handrails on iron railings and terrazzo on the landings and the baseboard.

Restrooms have 2x2 inch ceramic tile flooring. The entrance vestibule, lobby and corridor floors have terrazzo floors with terrazzo baseboards. The basement equipment rooms have concrete floors. There is a project to replace the parquet wood tiles in some high traffic areas. The floors throughout the building are in good to fair condition depending on the area and have been well maintained.

Ceiling Finishes

The ceilings in the original building have suspended 2x4 or 2x2 mineral fiber tiles, attached 1x1 mineral fiber tiles, plaster or are exposed. The ceilings under the stairwells and some rooms have attached plaster ceilings. The ceilings in remodeled and kitchen areas have a suspended aluminum 2x4-grid system with mineral fiber tiles. The original plaster ceilings are in good condition.

The ceilings in the upper two southwest assembly areas are recessed between the concrete structural beams. The beams are wrapped with wood or plaster molding on both sides up to the mineral fiber ceiling tiles. The cornice beams at the walls have molding that matches the center beams. The second floor dining area beam trim has plaster impressions trimmed with crown molding, plaster crown molding below and rosettes below the crown. The wood crown molding was added at the top of the plaster trim at a later date. The first floor meeting room also has ornamental plaster sides with a plaster crown at the top to the ceiling. The two center beams that rest on concrete columns with a fluted plaster finish have wood bi-fold doors that can section the space into three areas.

The first floor corridor has recessed ornamental plaster beams along the walls and in the field with a plaster crown at the top. The original light bulbs in the entrance hallway were abandoned and fluorescent lighting installed with an egg crate diffuser in a 2x4 grid that is flush with the bottom of the beam was added.

The partitions, doors, walls and ceilings vary in their condition depending on the location in the building and what remodeling has been completed. The partitions, doors, door hardware, walls, floors and ceilings in the original building have held up well.

Conveying

The Warner passenger elevator located on the north side of the original building was installed in 1940. The elevator consists of a cab that is moved from floor to floor by a cable-driven system with a DC motor and reduction gearbox located in room 015A. The controls consist of push buttons, relays and solenoids that operate the motor, brake, floor levelers, doors and position lights. The passenger elevator had a newer control panel installed that meets ADA requirements. The elevator was operating and maintenance records did not indicate any problems; however, the elevator is 65 years old and needs to be replaced or rebuilt within the next five to ten years.

The Moseley passenger/freight elevator that was installed in 1991 meets ADA standards. The elevator has a cab that is moved from floor to floor by a hydraulic cylinder located under the cab that is driven by an electric driven hydraulic oil pump and control valve located in room 038M. The controls consist of an electronic relay board with electronic push buttons that control the hydraulic pump, control valve, brake, floor levelers, doors and position lights. The elevator was operating and maintenance records did not indicate any problems. The elevators meet present ADA accessibility guidelines and fire codes. The elevator installed in 1991 is approaching its life cycle hydraulic seal replacement age that will need to be replaced in the next five to ten years.

There are wheelchair lifts to the assembly areas on all floors.

Plumbing

The major service systems, domestic cold and hot water, sanitary waste and storm drainage all appeared to be in good to fair condition and functioning at the time of the audit. Most of the above ground and some of the underground building plumbing system was replaced in 1991.

Water enters the building on the north side of room 015 through a 6" ductile cast iron pipe, a backflow preventer and water meter that feed the building's 3" domestic water service and the 6" fire protection system. The domestic cold and hot water piping, installed in 1991, has copper pipe and is in good condition. There was adequate water pressure at the faucets and fixtures on all of the floors.

The 1-1/2" domestic hot water supply from the McCracken Power Plant, a 3/4" hot water return line and a hot water circulating pump provides the domestic hot water to the building. The domestic hot water also feeds the dishwasher booster heaters.

The restroom fixtures, installed in 1991, consist of water closets and urinals with flush valves and counter mounted and wall hung lavatories with faucets. The restroom fixtures were functioning properly. The general appearance of restrooms throughout the building is in good condition. Electric water coolers are located on each floor near the restrooms.

The 6" fire protection water supply feeds a standpipe riser with 2.5" hose valves located in cabinets on each floor near the southeast elevator. The wet-pipe sprinklers are fed from the alarm/gate valve off the standpipe riser. A dry-pipe sprinkler system in room 009 is installed to the attic area. There are portable fire extinguishers located throughout the building. All fire protection systems appeared to be functioning properly.

Heating

The original building was heated with hot water supplied by the power plant from the tunnel but later converted to a steam to hot water system in 1991. A 2-1/2" steam line is tapped into the power plant high-pressure steam loop located in the tunnel. The high-pressure steam line feeds a 3,570 pound-per-hour steam station located in room 040M through double 1/3x2/3 200/15-Psig pressure reducing valves. There is a desuperheater in the line after the pressure reducing station.

The desuperheater cools superheated steam delivered from the power plant from 580°F to 250°F with 210°F condensate water. Condensate is collected in a receiver tank where a desuperheater pump raises the pressure of the liquid to 5-10 Psig above the pressure of the steam to be cooled. The condensate is metered through a control valve before it enters the desuperheater.

The desuperheater and control valve appears to be oversized (cools 3,500 #/hr of steam with 533 #/hr or 1.11 GPM at 20-25 Psig of condensate). The installed desuperheater pump (2 GPM @ 121 Psig) is oversized causing excessive wear on the desuperheater pump and control valve. The desuperheater pump needs to be replaced with a properly sized unit.

After the desuperheater, low-pressure steam is piped to a 2,560 #/hr hot water heat exchanger in room 004M. Low pressure steam heats hot water in the heat exchanger that is then pumped through two constant speed heating hot water pumps located in room 004M to fan coil units at entrances, convectors under windows, reheat coils, fan coil units and unit heaters. Duplex condensate pumps at the heat exchanger in room 004M moves condensate back to the power plant. The steam system was operating and the heating system was operating at minimum levels at the time of the site visits.

Cooling & Ventilation

The cooling system consists of a 120 Ton McQuay water chiller, installed in 1991, with one screw R-22 compressor that is cooled by an open-type cooling tower located outside next to the mechanical room. A condenser water pump supplies condenser water from the chiller to the cooling tower. A chilled water pump supplies chilled water from the chiller to the air-handling unit located in room 015M. The chiller is aging and will need to be replaced in the next five to ten years.

The original heating and ventilation system was a constant air volume (CAV) system with a large supply air fan in room 015M. The supply air fan moved fresh outside air through a heating coil in the unit to zone ducts located in the walls. The supply air ducts of this system supplied fresh air to registers and grills throughout the building. The original heating and ventilation system was modified during the 1991 building renovation project.

During the building renovations, the CAV air-handling unit with four zone dampers was modified to a VAV air-handling unit. A new high-pressure duct, chilled water coil, 35% efficient filters, mixing dampers, a vortex air control damper and a new motor were installed on the air-handling unit. The VAV air-handling unit supplies air to VAV boxes in renovated portions of the original building and the zone dampers on the four ducts. The vortex damper controls the system fan's air volume. A ducted system returns air back to the air-handling unit through the return air fan. A pneumatic thermostat located in the room modulates the VAV boxes cooling air and/or zone dampers to provide comfort air to the spaces.

The cooling and ventilation system appeared to be cooling the building properly at the time of the site visits; however, the unit was creating a very large negative pressure in the mechanical room to the hall. The return air fan is not working, the return air damper is not connected to the operator and outside air damper is closed and not working. These need to be repaired and the Building Automation Shop needs to verify the unit's proper operation. The VAV system installed in 1991 is approaching its life cycle replacement age and will need to be replaced in the next five to ten years.

Makeup air fan coil units with hot water heating coils and 35% filters supply outside air to registers located in several kitchen areas. Outside air supply fans with 35% filters supply air to the kitchen hoods. The fan coil units installed in 1991 are approaching their life cycle replacement age and will need to be replaced in the next five to ten years and should be replaced with cooling coils.

General exhaust fans located throughout the building remove air from restrooms, common areas, kitchen spaces, conference rooms and mechanical rooms. There are kitchen hood exhaust fans located on the roof that remove air from above the grills and supply air fans that supply a portion of the air exhausted to the hood face.

Controls for the heating and cooling system consists of pneumatic, electronic and electric operators with a DDC monitoring panel that is monitored by the Building Automation Shop through a Lenel panel in room 106M.

Electrical Service & Distribution

One 750-KVA 208/120-volt transformer on the south side of Orton Hall supplies the electrical service to Orton Hall and The Faculty Club. The transformer is supplied with 13,200-volt power from the primary switches located next to the transformer. Switchgear located in room 106M feeds the MCC panel, lighting and power distribution panels located throughout the building. Panel sizes vary throughout the building depending on the load. At about 13.2 watts per square foot, the building appears to have an adequate power supply.

Lighting & Power

Some areas of the original building have 40-watt fluorescent and incandescent light fixtures. Most areas have the newer 32-watt electronic ballast and tube fixtures that were installed during room renovation projects. Some stairwells and halls are lighted with incandescent fixtures. Most of the original building wiring, lighting fixtures and receptacles were updated within the last 20 years and are in serviceable condition.

Safety Standards

Older areas of The Faculty Club are equipped with a manual fire alarm system consisting of pull stations at stairwells and exits that give local fire annunciation from the panel to fire bells. The addition is equipped with a manual fire alarm system consisting of pull stations at stairwells and exits that give local fire annunciation to strobes and horns from the panel to all renovated floors. A MDI panel in 106M that reports system status to the Department of Public Safety in Blankenship Hall monitors the fire annunciation panel. There are lighted exit signs with backup battery packs at each exit. There is emergency lighting with backup battery packs in halls and stairwells in the addition and in the original building.

The 1991 renovations included hood CO₂ suppression systems, standpipes with fire department hose valves, wet pipe and dry pipe sprinklers on the south east side of all floors. There are portable fire extinguishers located throughout the building.

The double door at northeast entry to The Faculty Club is equipped with electric door openers for access to the wheelchair lift and elevators to all floors.

Asbestos

PEI Associates completed the Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program report on Sept. 1986 that reported: Asbestos containing materials were identified in pipe insulation in room 015M, 010, room 040M, and the tunnel. All asbestos piping and asbestos containing materials including floor tiles, plaster and drywall spackle needs to be removed during any renovation.

Perimeter

The Faculty Club is located between the South Oval and the Main Oval and has a patio overlooking Mirror Lake. The patio has a brick wall with a limestone cap on the west and south side and a stair on the north side down to the west end grass area. There are pavers and a small ramp from the double door to the south. Green areas are located around the building. There is some parking to the east of the building for Orton Hall.

The sidewalks around the building are in good condition. Some sidewalks to the north of the building have small cracks. Plantings vary from large mature trees and shrubbery beds on the north and east side of the building. The brick wall and limestone cap around the patio needs to be cleaned, tuckpointed and sealed. The patio area needs to be renovated.

Entrances to the building are well lighted and area, flood, sidewalk and street lighting appeared to be distributed properly. The building signs are in good condition. The front entrance steps need to be removed and reinstalled properly.

BUILDING EVALUATION SUMMARY

Building Number: #028

Facility Name: Faculty Club

Year Constructed: 1939-40

Building Addition: 1991

Building Size: 67,287 Gross Square Feet and 57,839 Net Square Feet

Replacement Cost: \$6,070,000 ¹

Component Rating				
Building Component	Building Component Percentage of Total Cost ²	Building Component Replacement Cost	Building Component Condition Value Multiplier	Building Component Current Value
Foundation	4.38	\$ 266,141	79%	\$ 209,355
Columns & Beams	7.12	\$ 432,273	79%	\$ 340,039
Exterior Walls	6.85	\$ 415,742	77%	\$ 318,720
Ext. Windows & Doors	3.61	\$ 219,029	98%	\$ 213,674
Roofing & Flashing	5.99	\$ 363,671	94%	\$ 343,465
Partitions & Doors	8.86	\$ 538,068	63%	\$ 340,742
Wall Finishes	4.85	\$ 294,243	83%	\$ 245,196
Floor Finishes	6.47	\$ 392,599	81%	\$ 318,430
Ceilings & Finishes	7.35	\$ 446,324	70%	\$ 312,404
Conveying	2.83	\$ 171,917	60%	\$ 103,140
Plumbing	8.44	\$ 512,446	80%	\$ 409,941
Heating	8.85	\$ 537,241	88%	\$ 472,767
Cooling & Vent.	10.76	\$ 652,955	76%	\$ 496,226
Elect. Service. & Dist.	1.29	\$ 78,520	88%	\$ 69,097
Lighting & Power	8.71	\$ 528,976	83%	\$ 440,801
Safety Standards	3.62	\$ 219,856	82%	\$ 180,765
TOTALS	100.00 ³	\$ 6,070,000	80%	\$ 4,814,762

Overall Building Condition Rating = 80%
Overall FCI (Facility Condition Index) = 12% ⁴

FCI = Deferred Maintenance (\$731,000)/Replacement Cost (\$6,070,000) = 12%

- 1- Replacement Cost assigned May 2005 by the Office of Facilities Planning and Development in the University Space Inventory System. Replacement cost does include the furnishings and fixed equipment allocation.
- 2- Percent allocation of each building component was calculated from the Means Standard Construction Cost data for College Classroom Buildings.
- 3- The building component costs are rounded to four decimals to allow the calculated building replacement cost to be displayed as reported by the Office of Facilities Planning and Development.
- 4- Facility Condition Index is [deferred maintenance]/[total replacement cost]. An excellent building is 5%. As the building reaches 16%, the building needs major attention. The goal at The Ohio State University is to have an FCI of 11% or lower.

BUILDING EVALUATION SUMMARY

Foundation

Refer to p. 9 for Narrative

Foundations Component Rating	<u>\$266,141</u> Component Replacement Cost	X	<u>79%</u> Condition Value Multiplier	=	<u>\$210,251</u> Component Value
Footings					
Satisfactory	Interior Footings/Piers				Concrete Spread
n/a	Interior Footings/Bearing Walls				
Satisfactory	Perimeter Footings				Concrete Spread
n/a	Grade Beams				
n/a	Piles				
n/a	Caissons				
Foundation Wall Materials					
Satisfactory	Concrete cast-in-place				1940 building to first floor
Satisfactory	Concrete Block				1991 addition
n/a	Stone				
n/a	Brick				
Waterproofing and Under-drain					
Satisfactory	Coating				1991 addition
Satisfactory	Membrane				1991 addition
n/a	Board				
Satisfactory	Drain Tile				1991 addition
Slab on Grade					
n/a	Plain				
n/a	Reinforced				
Ground/Basement Floor Slab					
n/a	Plain				
Satisfactory	Reinforced				
Special Substructures					
n/a					

Comments:

- Some cracking and spalling in sections of concrete wall of the 1940 building and at ground level was noted. Spalling appears to be a result of water next to the building not being drained away.

BUILDING EVALUATION SUMMARY

Columns & Beams

Refer to p. 9 for Narrative

Columns and Beams Component Rating	<u>\$432,273</u> Component Replacement Cost	X	<u>79%</u> Condition Value Multiplier	=	<u>\$341,495</u> Component Value
Columns and Beams					
Satisfactory	Reinforced concrete		steel encased concrete columns and beams		1940 building
n/a	Pre-cast concrete				
n/a	Steel columns and beams				
n/a	Fireproofing				
n/a	Wood				
n/a	Other				
Floor Joists					
Satisfactory	Reinforced Concrete				1940 building
n/a	Steel Trusses				
n/a	Wood				
n/a	Other				
Floor Decks					
Satisfactory	Concrete Slab				1940 building
Satisfactory	Pre-cast Slab		precast concrete floors on		1991 addition
n/a	Metal Deck w/concrete fill				
n/a	Wood				
Roof Joists					
n/a	Concrete				
Satisfactory	Steel		column and beam support frame on		original building
n/a	Steel Joists				
Satisfactory	Wood		on support frame to shape roof lines		
Pitched Roof System					
Satisfactory	Pitch				4-1/2" & 6 1/2" to 12
Satisfactory	Dormers				for windows and louvers
Satisfactory	Steel Frame				
Satisfactory	Wood Rafters				
n/a	Fireproofing				
Satisfactory	Underlayment		5/4" T&G planking in		1940 building
Satisfactory	Insulation				
Satisfactory	Ventilation				power vents
Flat Roof System					
Satisfactory	Slope				0.25" per foot
Satisfactory	Concrete Deck				1991 addition
n/a	Pre-cast Gypsum Slab				
n/a	Metal Deck w/concrete fill				
n/a	Metal Deck w/insulation				
Satisfactory	Wood Deck				in 1940 section
Satisfactory	Insulation				board

Comments:

- None

BUILDING EVALUATION SUMMARY

Exterior Walls

Refer to p. 10 for Narrative

Exterior Walls Component Rating	<u>\$415,742</u> Component Replacement Cost	X	<u>77%</u> Condition Value Multiplier	=	<u>\$320,121</u> Component Value
Walls					
Satisfactory	Concrete cast-in-place				to first floor with pargeted finish and recessed groove
n/a	Concrete pre-cast				
n/a	Concrete Block				
Satisfactory	Brick Masonry				
Satisfactory	Brick Veneer				
Satisfactory	Limestone Veneer				
Satisfactory	Window/Curtain wall				steel framed with aluminum windows
n/a	Metal Siding				
Wall Lintels Over Openings					
n/a	Concrete pre-cast				
n/a	Concrete cast-in-place				
Satisfactory	Limestone				
n/a	Brick Masonry				
Satisfactory	Steel				with brick soldier course
n/a	Wood				
n/a	Other				
Wall Trim					
Satisfactory	Limestone				sills, block at corners, accents and front entrance
Satisfactory	Brick				soldier, projected and dentil projected
Satisfactory	Brick				fascia trim behind gutters
n/a	Granite				
n/a	Wood				
Satisfactory	Cut Stone				balconies
Satisfactory	Other				carved limestone
Finishes					
Satisfactory	Plain				
Satisfactory	Pargeted concrete				
n/a	Stucco				
n/a	Paint				
n/a	Drivit				
Satisfactory	Other				limestone over front entrance
Exterior Wall Backing System					
n/a	Concrete				
Satisfactory	Concrete Block				1991 addition
Satisfactory	Brick Masonry				1940 building
Satisfactory	Clay Tiles				1940 building
n/a	Metal Studs				
n/a	Wood Studs				

Comments:

- The brick and limestone walls of the 1940 building are stained and need to be cleaned and sealed.

BUILDING EVALUATION SUMMARY

Exterior Windows & Doors

Refer to p. 10 for Narrative

Exterior Windows & Doors Component Rating	<u>\$219,029</u> Component Replacement Cost	X	<u>98%</u> Condition Value Multiplier	=	<u>\$214,649</u> Component Value
Window materials					
n/a	Wood				
Satisfactory	Steel				original window wall frames
Satisfactory	Aluminum				inserted in steel frames
Satisfactory	Opening Area				1,866 SF
Windows type & number					
n/a	Double Hung				
Satisfactory	Awning				45 ea
n/a	Casement				
n/a	Pivoted				
Satisfactory	Fixed				37 panels
Satisfactory	Spandrels				Granite 12 ea
Satisfactory	Other				leaded glass in transoms 2 ea
Window glazing					
Satisfactory	Single pane				leaded glass
Satisfactory	Double pane				
Window Wall and/or Store Front					
n/a	Store Front				
n/a	Vestibule				
n/a	Single pane				
n/a	Double pane				
Door Materials					
Satisfactory	Wood				1940 building to patio
Satisfactory	Steel				door entrances
Satisfactory	Aluminum				main entrance
Satisfactory	Opening Area				235 SF
Doors type & number					
Needs attention	Vestibule				1 ea aluminum north entrance on 1940 building
Satisfactory	Double Stair				1 ea north entrance on 1991 building
Satisfactory	Double Casement				2 ea new aluminum on 1940 building overlooking patio
Satisfactory	Double Exit				1 ea wood, 1 ea steel
Satisfactory	Single Exit				1 ea wood, 1 ea steel (trash)
Hardware					
Satisfactory	Automatic opener				north double door to stair
Satisfactory	Push bar openers with closures				
n/a	Key Cards				

Comments:

- The ground floor wood doors to the assembly room were recently refinished.
- The main entrance doors are to be replaced.

BUILDING EVALUATION SUMMARY

Roofing & Flashing

Refer to p. 11 for Narrative

Roofing & Flashing Component Rating	<u>\$363,671</u> Component Replacement Cost	X	<u>94%</u> Condition Value Multiplier	=	<u>\$341,851</u> Component Value
Roof Covering					
n/a	Built-up with modified				
n/a	Built-up w/gravel and asphalt				
Satisfactory	Modified Bitumen Roll				2,224 SF
n/a	Asphalt Shingle				
Satisfactory	Copper				8,617 SF
n/a	Clay Tile				
Satisfactory	EPDM				695 SF
n/a	Aluminum flat seam				
Flashing					
	Copper (Satisfactory)	Galvanized (n/a)		Aluminum (n/a)	
	EPDM (Satisfactory)	SS (n/a)		PVC (n/a)	
Satisfactory	Base & Counter SBS				279 LF
Satisfactory	Step				128 LF
Satisfactory	Pined to walls				72 LF
Satisfactory	Reglet in walls				223 LF
Satisfactory	Valley & Ridge				471 LF
Gravel Stop & Edge Strips					
	Stainless Steel (n/a), and Galvanized (n/a)				
Satisfactory	Copper (Satisfactory), PVC (n/a), Aluminum (n/a)				291 LF
Drainage					
Satisfactory	Gutters w/t Downspouts				328 LF
Satisfactory	Scuppers w/t Exterior Downspouts				2
Satisfactory	Scuppers w/o Exterior Downspouts				3
Satisfactory	Interior Storm Drains			5 ea 1940 building	
Satisfactory	Emergency Overflow			scuppers and over the edge	
Satisfactory	Downspouts				165 LF
Parapets					
n/a	Concrete				
Satisfactory	Brick				
n/a	Pre-cast				
Parapet Caps					
	Metal	SS (n/a)	Galvanized (n/a)	Aluminum (n/a)	
	Copper (n/a)		PVC (n/a)		
n/a	Tile				
Satisfactory	Limestone				219 LF on 1940 building
Satisfactory	Other			cast stone	118 LF on 1991 building
Roof Accessories					
n/a	Lightning Protection				
Satisfactory	Roof Curbs				
Satisfactory	Equipment Frames				
Satisfactory	Pitch Pockets				
Satisfactory	Fall Protection				
n/a	Other				

Comments:

- There have been leaks reported in the trough between the parapet and the copper roofing and repairs are being completed at this time.

BUILDING EVALUATION SUMMARY

Partitions & Doors

Refer to p. 12 for Narrative

Partitions & Doors Component Rating	\$538,068 Component Replacement Cost	X	63% Condition Value Multiplier	=	\$338,983 Component Value
Partition Framing					
Satisfactory	Concrete Block/Brick				in 1940 building
Satisfactory	Clay Tile Block				in 1940 building
n/a	Glazed Block				
Satisfactory	Masonry load-bearing				
Satisfactory	Wood Stud				in 1940 building
Satisfactory	Metal Stud				in 1991 building
Special partitions and Walls					
n/a	Demountable				
Satisfactory	Toilet				
Satisfactory	Screen Walls				
Satisfactory	Glass				
Satisfactory	Iron Railings				
Wall Material					
Satisfactory	Plaster				original building
Satisfactory	Drywall				remodeled areas
n/a	Glass				
Satisfactory	Wood Paneling				original building
n/a	Composite Paneling				
Satisfactory	Tile/Glazed				
Interior Doors & Frames					
Satisfactory	Met Door/Met Frame				1991 building
Satisfactory	Wood Door/Wood Frame				original building
Satisfactory	Wood Door/Metal Frame				1991 building
Satisfactory	Glazing				leaded glass in wood vestibule doors
Satisfactory	Double doors				
Satisfactory	Shutter doors				
Satisfactory	Sliding				
Hardware					
Satisfactory	Door Knobs				
Satisfactory	Door Levers				
Satisfactory	Door Closures				
Satisfactory	Kick/Push Plates				
n/a	Security & Detection				
Satisfactory	Automatic Openers				
n/a	Fire Door Magnets				

Comments:

- None

BUILDING EVALUATION SUMMARY

Wall Finishes

Refer to p. 11 for Narrative

Wall Finishes Component Rating	<u>\$294,243</u> Component Replacement Cost	X	<u>83%</u> Condition Value Multiplier	=	<u>\$244,221</u> Component Value
Wall Finishes					
Satisfactory	Paint				
Satisfactory	Cloth Wall Coverings				some conference rooms
Satisfactory	Paneling				wood panels and trim
n/a	Cork				
Satisfactory	Wallpaper				
Satisfactory	Ceramic Tile				restrooms
n/a	Marble				base
n/a	Stone				
Satisfactory	Trim & Wainscot				throughout
Satisfactory	Decoration				trim and inlays throughout the original building
Satisfactory	Trim				wood and plaster
n/a	Glass				

Comments:

- Finishes are generally in good condition on all floors.

BUILDING EVALUATION SUMMARY

Floor Finishes

Refer to p. 12 for Narrative

Floor Finishes Component Rating	<u>\$392,599</u> Component Replacement Cost	X	<u>81%</u> Condition Value Multiplier	=	<u>\$318,005</u> Component Value
Carpet					
Satisfactory	Rolled				offices and meeting rooms
Satisfactory	Throw				in assembly rooms, halls and some meeting rooms
n/a	Tile				
Concrete Topping					
n/a	Clear Sealant				
n/a	Anti-slip				
n/a	Epoxy				
Resilient					
n/a	Vinyl Composition Tile				
Satisfactory	Vinyl Tile				1991 building
n/a	Asphalt Tile				
n/a	Linoleum Tile				
n/a	Plastic Tile				
n/a	Cork Tile				
n/a	Vinyl Sheet				
n/a	Rubber Tile/Sheet				
Ceramic Tile					
Satisfactory	Mosaic				in restrooms
n/a	Quarry				
Satisfactory	Pavers				in renovated kitchens
Masonry					
n/a	Marble				
n/a	Granite				
n/a	Slate				
n/a	Brick				
Terrazzo					
Satisfactory	Marble				in entry lobby, halls and stair
n/a	Granite				
Wood					
Satisfactory	Tiles				parquet assembly room
Satisfactory	T&G Hardwood				assembly room
n/a	Planking				
Pedestal					
	Vinyl Tiles (n/a)	Grills (n/a)	Supply Air (n/a)	Vent (n/a)	
Base Molding					
Satisfactory	Vinyl				
Satisfactory	Wood				in 1940 building
Satisfactory	Terrazzo				main halls and stairs
Satisfactory	Ceramic Tile				restrooms
n/a	Masonry				
n/a	Marble				

Comments:

- Wood parquet tiles in the 1940 building are to be replaced.

BUILDING EVALUATION SUMMARY

Ceilings & Finishes

Refer to p. 12 for Narrative

Ceilings & Finishes Component Rating	<u>\$446,323</u> Component Replacement Cost	X	<u>70%</u> Condition Value Multiplier	=	<u>\$312,426</u> Component Value
	System Type				
Satisfactory	Exposed				
Satisfactory	Applied to Structure				plaster in 1940 building
Satisfactory	Applied Concealed Spline				in 1940 building
Satisfactory	Suspended Steel Grid				
Satisfactory	Suspended Aluminum Grid				in new building
Satisfactory	Suspended Plaster Soffits				
Satisfactory	Suspended Light Grid				first floor hall
	Materials				
Satisfactory	Drywall				
Satisfactory	Plaster				some 1940 ceilings
Satisfactory	Mineral Fiber Board				2x4 in renovated areas
Satisfactory	1x1 Mineral Fiber Board				large rooms and halls
n/a	Fiberglass Board				
n/a	Cementitious Fiber Board				
Satisfactory	Metal Honeycomb Grid				first floor hall
Satisfactory	Other				plaster covered beams and cornices
	Finishes				
Satisfactory	Paint				
Satisfactory	Pre-finished Paint				
n/a	Pre-finished Vinyl				
n/a	Pre-finished Fabric				
	Openings & Inserts				
Satisfactory	Air Distribution				
Satisfactory	Lighting Fixtures				
Satisfactory	Access Panels				
Satisfactory	Sprinklers				
Satisfactory	Smoke Detectors				
n/a	Speakers				
n/a	Skylights				
n/a	Other				

Comments:

- Ceilings are in good condition

BUILDING EVALUATION SUMMARY

Conveying

Refer to p. 13 for Narrative

Conveying Component Rating	<u>\$171,917</u> Component Replacement Cost	X	<u>60%</u> Condition Value Multiplier	=	<u>\$103,150</u> Component Value
Elevator #1					
Satisfactory	Number				one Moseley installed 1991
Satisfactory	Type				passenger/freight
Satisfactory	Speed				125 FPM
Satisfactory	Dimensions				60" x 84"
Satisfactory	Door Operation	<input checked="" type="checkbox"/> Side	<input type="checkbox"/> Center		
Satisfactory	Accessibility Standards				
Satisfactory	Fire Codes				
Elevator #2					
Satisfactory	Number				one Warner installed 1940
Satisfactory	Type				Passenger
Satisfactory	Speed				100 FPM
Satisfactory	Capacity (lbs.)				2,000 lbs.
Satisfactory	Prime Mover				cable
Satisfactory	Dimensions				54" x 84"
Satisfactory	Door Operation	<input checked="" type="checkbox"/> Side	<input type="checkbox"/> Center		
Satisfactory	Accessibility Standards				
Satisfactory	Fire Codes				
Lifts and Hoists					
Satisfactory	Number				three wheelchair lifts
Satisfactory	Type				hydraulic
Lifts and Hoists					
n/a	Number				
n/a	Type				
Moving Stairs and Walks					
n/a	Number				
n/a	Type				
Conveyors					
n/a	Number				
n/a	Type				

Comments:

- The 1940 elevator cab had a new control panel installed to meet accessibility standards.

BUILDING EVALUATION SUMMARY

Plumbing

Refer to p. 13 for Narrative

Mechanical & Plumbing Component Rating	<u>\$512,446</u> Component Replacement Cost	X	<u>80%</u> Condition Value Multiplier	=	<u>\$409,957</u> Component Value
	Services Available				
Satisfactory	Cold Water				3" supply to original building and the addition
Satisfactory	Backflow Valve				
Satisfactory	Hot Water				1.5" in room 040M
Satisfactory	Natural Gas				1.5" in room 040M
Satisfactory	Compressed Air				.5" room 004M
Satisfactory	Other				6" water for fire protection room 015M
	Piping & Fittings				
Satisfactory	Cast Iron				
Satisfactory	Ductile Iron				
Satisfactory	Copper Pipe				
Satisfactory	Copper Tubing				
Satisfactory	Steel				
n/a	Galvanized Steel				
	Water Heaters				
n/a	Gas				
n/a	Steam Converter/Tank				
n/a	Steam Instantaneous				
Satisfactory	Central Hot Water				1.5" DHWS
	Drainage				
Satisfactory	Storm Drains				
Satisfactory	Sanitary Drainage				
Satisfactory	Floor Drains				
	Fixtures				Number
Satisfactory	Water Closets				11
Satisfactory	Urinals				5
Satisfactory	Lavatory Sinks				10
Satisfactory	Kitchen Sinks				lot
Satisfactory	Service Sinks				3
Satisfactory	Showers				2
Satisfactory	Electric Water Coolers				3
	Sprinkler Systems				
Satisfactory	Wet				
Satisfactory	Dry				
Satisfactory	Carbon Dioxide				
n/a	Halon				
	Standpipe Systems				
Satisfactory	[X]Wet []Dry				standpipe in 1991 addition
Satisfactory	Fire Hose Valve	[X] 2.5"	[] 1.25"		
n/a	Hose Cabinets, Hoses	[]Installed	[]Removed		

Comments:

- None

BUILDING EVALUATION SUMMARY

Heating

Refer to p. 14 for Narrative

Mechanical & Heating Component Rating	<u>\$537,241</u> Component Replacement Cost	X	<u>88%</u> Condition Value Multiplier	=	<u>\$472,772</u> Component Value
	Heat Source				
Satisfactory	Central Plant Steam				2½" HPS
n/a	Central Plant Hot Water				
	System Type				
n/a	Steam				
Satisfactory	Hot Water				3,400 MBH heat exchanger
Satisfactory	Warm Air				
	Air Handling Units				
n/a	Multi-zone	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating	<input type="checkbox"/> Reheat	
n/a	Dual Duct	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating	<input type="checkbox"/> Reheat	
n/a	Make-up Air	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating	<input type="checkbox"/> Reheat	
Satisfactory	Variable Volume Air	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating	<input type="checkbox"/> Reheat	
n/a	Constant Volume Air	<input type="checkbox"/> Preheat	<input type="checkbox"/> Heating	<input type="checkbox"/> Reheat	
Satisfactory	Other				Make-up-air Fan coil units
	Air Filters				
Satisfactory	Pre-filter	<input checked="" type="checkbox"/> Multi	<input type="checkbox"/> DDAHU	<input type="checkbox"/> MUAHU	<input checked="" type="checkbox"/> VAVAHU
n/a	Bag-filter	<input type="checkbox"/> Multi	<input type="checkbox"/> DDAHU	<input type="checkbox"/> MUAHU	<input type="checkbox"/> VAVAHU
	Space Equipment				
Satisfactory	Radiators				
Satisfactory	Convectors				
Satisfactory	Unit Heaters				
n/a	Reheat Coils				
n/a	DD Boxes				
Satisfactory	VAV Boxes				
Satisfactory	2-Pipe Fan Coil				at entrances
	Special Systems				
Satisfactory	Type				
Satisfactory	Capacity				
	Fans				
Satisfactory	Exhaust equipment				4 exhaust fans
Satisfactory	Re-circulating				return air fan
	Control Type				
Satisfactory	<input checked="" type="checkbox"/> Pneumatic	<input checked="" type="checkbox"/> Electric	<input type="checkbox"/> DDC	<input checked="" type="checkbox"/> DDC Upgrade	

Comments:

- The air-handling unit in the original building is approaching its useful life and needs to be replaced in the near future.

BUILDING EVALUATION SUMMARY

Cooling & Ventilation

Refer to p. 14 for Narrative

Cooling & Ventilating Component Rating	<u>\$652,955</u> Component Replacement Cost	<u>76%</u> Condition Value Multiplier	=	<u>\$496,246</u> Component Value
	System/Capacity			
Satisfactory	Water			120 tons
n/a	DX			
	Chillers Capacity/Year/Refrigerant/Manufacturer			
n/a	Centrifugal			
n/a	Reciprocating			
Satisfactory	Screw			120 ton McQuay, R-22 water chiller
	Condenser Side			
Satisfactory	Type/Capacity	<input checked="" type="checkbox"/> CW	<input type="checkbox"/> DX	120 ton cooling tower
n/a	Type/Capacity	<input type="checkbox"/> CW	<input type="checkbox"/> DX	
	Air Handling Units			
n/a	Multi-zone	<input checked="" type="checkbox"/> CW	<input type="checkbox"/> DX	<input type="checkbox"/> HUMID
n/a	Dual Duct	<input type="checkbox"/> CW	<input type="checkbox"/> DX	<input type="checkbox"/> HUMID
n/a	Make-up Air	<input type="checkbox"/> CW	<input type="checkbox"/> DX	<input type="checkbox"/> HUMID
n/a	Constant Air Volume	<input type="checkbox"/> CW	<input type="checkbox"/> DX	<input type="checkbox"/> HUMID
Needs Attention	Variable Air Volume	<input checked="" type="checkbox"/> CW	<input type="checkbox"/> DX	<input type="checkbox"/> HUMID
n/a	Fan Coil Unit	<input type="checkbox"/> CW	<input type="checkbox"/> DX	<input type="checkbox"/> REHEAT
	Additional Air Filters			
n/a	Postfilter	<input type="checkbox"/> Multi	<input type="checkbox"/> DDAHU	<input type="checkbox"/> MUAHU <input type="checkbox"/> VAVAHU <input type="checkbox"/> CAV
	Direct Expansion (Number)			
n/a	Window units			
n/a	Roof-top units			
n/a	Single zone VAV			
n/a	DX chillers			
	Distribution Boxes			
Satisfactory	VAV	<input type="checkbox"/> FC	<input type="checkbox"/> REHEAT	
n/a	CAV	<input type="checkbox"/> FC	<input type="checkbox"/> REHEAT	
n/a	DUAL DUCT	<input type="checkbox"/> FC	<input type="checkbox"/> REHEAT	
	Special Systems			
n/a	Type			
n/a	Capacity			
	Control Systems			
Satisfactory	<input checked="" type="checkbox"/> Pneumatic	<input checked="" type="checkbox"/> Electric	<input type="checkbox"/> DDC	<input checked="" type="checkbox"/> DDC Upgrade

Comments:

- The air-handling unit has a modified VAV supply air fan and multi-zone dampers and needs to be replaced.

BUILDING EVALUATION SUMMARY

Electrical Service & Distribution

Refer to p. 15 for Narrative

Electrical Service & Distribution Component Rating		\$78,520 Component Replacement Cost	X	88% Condition Value Multiplier	=	\$69,097 Component Value
Service						
Substation	<input checked="" type="checkbox"/> Buckeye		<input type="checkbox"/> McCracken Power Plant			
Primary Voltage	<input checked="" type="checkbox"/> 13,200 Volts		<input type="checkbox"/> _____ Volts			
Switch Gear Circuit No.	106/304 sub fed from Orton Hall					
Transformer						
Manufacturer	Type	KVA	Secondary/Voltages		Room	
RTE	Oil	750	208/120		Southwest Pad Orton	
Distribution System						
Distribution Panel Room 106M						
Panel board	<input checked="" type="checkbox"/> Fused	<input type="checkbox"/> Circuit Breakers				
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input checked="" type="checkbox"/> 208/3	<input type="checkbox"/> 240/1		
Amperage	<input checked="" type="checkbox"/> 1200A	<input type="checkbox"/> 800A	<input type="checkbox"/> 600A	<input checked="" type="checkbox"/> 400A	<input checked="" type="checkbox"/> 200A	
Lighting Room 106M						
Panel board	<input checked="" type="checkbox"/> Fused	<input checked="" type="checkbox"/> Circuit Breakers				
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input checked="" type="checkbox"/> 208/3	<input type="checkbox"/> 240/1		
Amperage	<input type="checkbox"/> 800A	<input type="checkbox"/> 400A	<input type="checkbox"/> 250A	<input checked="" type="checkbox"/> 200A	<input type="checkbox"/> 150A	<input type="checkbox"/> 100A
Building Power Room 106M						
Panel board	<input checked="" type="checkbox"/> Fused	<input checked="" type="checkbox"/> Circuit Breakers				
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input checked="" type="checkbox"/> 208/3	<input type="checkbox"/> 240/1		
Amperage	<input type="checkbox"/> 800A	<input checked="" type="checkbox"/> 400A	<input type="checkbox"/> 250A	<input checked="" type="checkbox"/> 200A	<input type="checkbox"/> 150A	<input type="checkbox"/> 100A
Isolated Ground Power Room						
Panel board	<input type="checkbox"/> Fused	<input checked="" type="checkbox"/> Circuit Breakers				
Voltage	<input type="checkbox"/> 480/3	<input type="checkbox"/> 277/3	<input checked="" type="checkbox"/> 208/3	<input type="checkbox"/> 240/1		
Amperage	<input type="checkbox"/> 400A	<input type="checkbox"/> 250A	<input type="checkbox"/> 200A	<input type="checkbox"/> 150A	<input checked="" type="checkbox"/> 100A	
Conduit and wire						
Conduit	<input checked="" type="checkbox"/> Steel	<input type="checkbox"/> Aluminum	<input type="checkbox"/> PVC	<input checked="" type="checkbox"/> Flexible		
Conductor	<input checked="" type="checkbox"/> Copper	<input type="checkbox"/> Aluminum	<input checked="" type="checkbox"/> MIT			
Wire	<input checked="" type="checkbox"/> PVC Cover	<input checked="" type="checkbox"/> Romex	<input checked="" type="checkbox"/> Armored Cable(BX)			
Emergency System						
<input type="checkbox"/> Battery backup Room						
<input type="checkbox"/> Emergency Panel Room						
<input type="checkbox"/> UPS Room						
Emergency Generator						
Size	KVA, Location, Room					

Comments:

- None

BUILDING EVALUATION SUMMARY

Lighting & Power

Refer to p. 15 for Narrative

Electrical Lighting & Power Component Rating	<u>\$528,976</u> Component Replacement Cost	X	<u>83%</u> Condition Value Multiplier	=	<u>\$439,050</u> Component Value
	Lighting (lamp type)				
Satisfactory	Fluorescent 40 watt				
Satisfactory	Fluorescent 32 watt in remodeled rooms and addition				
Satisfactory	Fluorescent Can				
Satisfactory	Incandescent fixtures in stairwells and halls				
Satisfactory	HID <input type="checkbox"/> Mercury <input type="checkbox"/> HPS <input checked="" type="checkbox"/> Metal Halide				
n/a	Low Voltage (12V)				
	Lighting Levels				
Satisfactory	Halls				
Satisfactory	Rooms				
Satisfactory	Mechanical Rooms				
	Fixture Condition				
Satisfactory	Fixtures				
Satisfactory	Bulbs				
Satisfactory	Fixture Lens				
	Receptacles & Switches				
Satisfactory	Wall Outlet 20A				
Satisfactory	GFIC Breakers new restrooms				
Satisfactory	Switches				
Satisfactory	Cover Plates				
	Special				
n/a	Lightning Protection				
n/a	Communication <input type="checkbox"/> Clock <input type="checkbox"/> Public Address <input type="checkbox"/> Bells				
Satisfactory	Alarm <input checked="" type="checkbox"/> Fire <input type="checkbox"/> Security				
Satisfactory	Telecommunication <input checked="" type="checkbox"/> Phones <input checked="" type="checkbox"/> Data <input checked="" type="checkbox"/> Cable TV				
Satisfactory	Communication Panel: <input checked="" type="checkbox"/> MDI <input type="checkbox"/> LENEL <input checked="" type="checkbox"/> DDC				
Satisfactory	To: <input type="checkbox"/> Local <input checked="" type="checkbox"/> Building Automation Shop				
Satisfactory	Data Systems				
Satisfactory	Fiber Optics				

Comments:

- Replacing the 40-watt lighting with 32-watt lighting will save energy.
- Incandescent lighting should be replaced with halogen bulbs.

BUILDING EVALUATION SUMMARY

Safety Standards

Refer to p. 15 for Narrative

Safety Standards Component Rating	\$219,855 Component Replacement Cost	X	82% Condition Value Multiplier	=	\$180,281 Component Value
Exits – Stair Construction					
n/a	Concrete				
Satisfactory	Steel				with concrete or terrazzo fill
n/a	Wood				
Satisfactory	Number of Exit Stairs				1
Satisfactory	Number of Other Exits				7
n/a	Other				
Fire Rating					
Satisfactory	Construction Type	I	<u>II X</u>	III	IV
	Building Height				V VI
					36 ft., 2 stories with basement
Extinguishing Systems					
Satisfactory	Portable				
Satisfactory	Standpipe				at east elevator
n/a	Hose Cabinets				
n/a	Hoses				removed
Satisfactory	Wet Sprinklers				in kitchen remodeled area
Satisfactory	Dry Sprinklers				in attic
Satisfactory	Gas Suppression				on kitchen hoods
Detection & Alarm Systems					
Satisfactory	Pull Stations				
Satisfactory	Bells				
Satisfactory	Horns				
Satisfactory	Strobes				
Satisfactory	Fire Alarm Panel				106M
Satisfactory	Annunciator Panel				106
Satisfactory	Smoke Detectors				
Satisfactory	Halls				
Satisfactory	Elevators				
Satisfactory	Kitchen				
Satisfactory	Equip Rooms				
Satisfactory	Ducts				
Building Reporting Systems					
Satisfactory	Remote Panel:	<input checked="" type="checkbox"/> MDI		<input type="checkbox"/> LENEL	
Satisfactory	To:	<input checked="" type="checkbox"/> Service Center		<input checked="" type="checkbox"/> Department of Public Safety	
		<input type="checkbox"/> Local		<input type="checkbox"/> Key Control	
Lighting Systems					
Satisfactory	Exit Signs	<input checked="" type="checkbox"/> BATTERY		<input type="checkbox"/> EMC	
Satisfactory	Exit Lighting	<input checked="" type="checkbox"/> BATTERY		<input type="checkbox"/> EMC	
Satisfactory	Emergency Lighting	<input checked="" type="checkbox"/> BATTERY		<input type="checkbox"/> EMC	
n/a	Emergency Generator				
n/a	Other				

Comments:

- None

BUILDING EVALUATION SUMMARY

Perimeter

Refer to p. 16 for Narrative

Building Access		
Satisfactory	Driveway	southeast
Satisfactory	Loading Dock	southeast
Sidewalks		
Satisfactory	Front	north
Satisfactory	Sides	east
n/a	Rear	
Steps		
Needs Attention	Front	main entrance
Satisfactory	Side	west to patio
n/a	Rear	
Satisfactory	Ramp	from south door to patio
Patio		
Needs Attention	Brick Wall	needs cleaned and tuckpointed
Needs Attention	Side	grass to west
Satisfactory	Rear	pavers to south
Satisfactory	Ramp	from south door
Lawn and Landscaping		
Satisfactory	Lawn	
Satisfactory	Shrubs	
Satisfactory	Trees	
n/a	Undesirable Insect	
Satisfactory	Bedding Material	
Satisfactory	Watering System	
General Site Information		
Satisfactory	Signage	
Satisfactory	Address Identification	
Satisfactory	Security Lights	
Satisfactory	Street Lights	
Satisfactory	Drainage	
Satisfactory	Storm Drains	

Comments:

- Some sidewalks on east side have minor cracks.

BUILDING AUDIT METHODOLOGY

- 1) **BUILDING AUDIT PROGRAM OBJECTIVE**

Provide a building inventory, including maintenance deficiencies that currently exist, for the 136 OSU buildings audited that the Department of Physical Facilities has fiscal responsibility for. These audits will be used to establish repair and renovation projects, to prepare budget cost estimates for these projects for determining overall levels of required maintenance funding.
- 2) **BUILDING AUDIT APPROACH.** A five-step procedure is used to meet the program objectives:
 - a) Collect historic workorder and drawing data on each building.
 - b) Interview building coordinator and shop personnel.
 - c) Perform an exterior and interior building inspection.
 - d) Complete building evaluation forms.
 - e) Prepare budget cost estimates for deferred maintenance and building improvement projects.
 - f) Issue written report for hard copy and web page distribution.
- 3) **DATA ORGANIZATION**

The data collected is stored by hard copy with field notes in a building file established for each building. The audit report costs data is stored in a projects database that allows retrieval of specific data as 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 building systems found 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 Facilities Planning and Development for each OSU building. The building replacement cost is allocated to each building component to provide an estimated value for each component. Project cost estimates will vary from the building component values in most situations because of scope of work, demolition and removal, material 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 Evaluations provided to give a numeric rating for each building on campus quantifying its percentage of deficiency.
- 6) **LIMITATIONS**
 - a) All inspections are visual and do not include physical tests, instrument measurements, sampling, or monitoring.
 - b) Only random typical offices or laboratories are entered. Typical spaces are deemed to be representative of average conditions throughout each building.
 - c) The scope of the analysis does not include complete OSHA, energy, or physically impaired ADA access study. Buildings and components are inspected for condition and general safety requirements rather than specialized code conformance.
 - d) 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 restore components to original conditions and to upgrade the buildings in a reasonable manner in regard to occupant safety.
 - e) 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.
 - f) The building inspections are defined as follows:
 - i) Includes:
 - (1) General repainting and redecorating.
 - (2) Replacement of building system components.
 - (3) Ongoing maintenance, replacement and renovation projects.
 - (4) Exterior building walls and attached items.
 - (5) Sidewalks and driveways to all entries and ramps outside the buildings.
 - (6) The program needs of the using department are assumed satisfied, unless specified.
 - ii) Excludes:
 - (1) Blinds, drapes, light bulbs, and movable furniture.
 - (2) Fixed equipment inside the buildings that is installed and maintained by a specific academic department or using agency.
 - (3) Utility lines supplying the buildings.
 - iii) No consideration has been given to anticipate any changes in current occupant use or space needs.

ABBREVIATIONS

A/C	Air Conditioning
AHU	Air Handling Unit
ATT	Attention
BLDG	Building
BUR	Built Up Roof
CAV	Constant Air Volume
COND	Condensate 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
FPM	Feet Per Minute
GPM	Gallons Per Minute
HID	High Intensity Discharge Light
HPS	High Pressure Steam (125 Psig)
HVAC	Heating, Ventilating and Air Conditioning
KV	Kilovolts
KVA	Kilovolt Amps
KW	Kilowatts
LC	Liquid Cooled
LF	Lineal Feet
LPS	Low Pressure Steam (15 Psig)
MCC	Motor Control Center
MPS	Medium Pressure Steam (50 Psig)
MZ	Multi-Zone
MZCV	Multi-Zone Constant Volume Air Handling
N/A	Not Applicable
PSIG	Pounds per Square Inch
RM	Room
RTU	Roof Top Unit (Heating or A/C)
S/P	Stand Pipe
SAT	Satisfactory
SF	Square Feet
SR	Steam Return Line
SS	Steam Supply Line
SY	Square Yards
TR	Terminal Reheat
V	Volts
VAV	Variable Air Volume

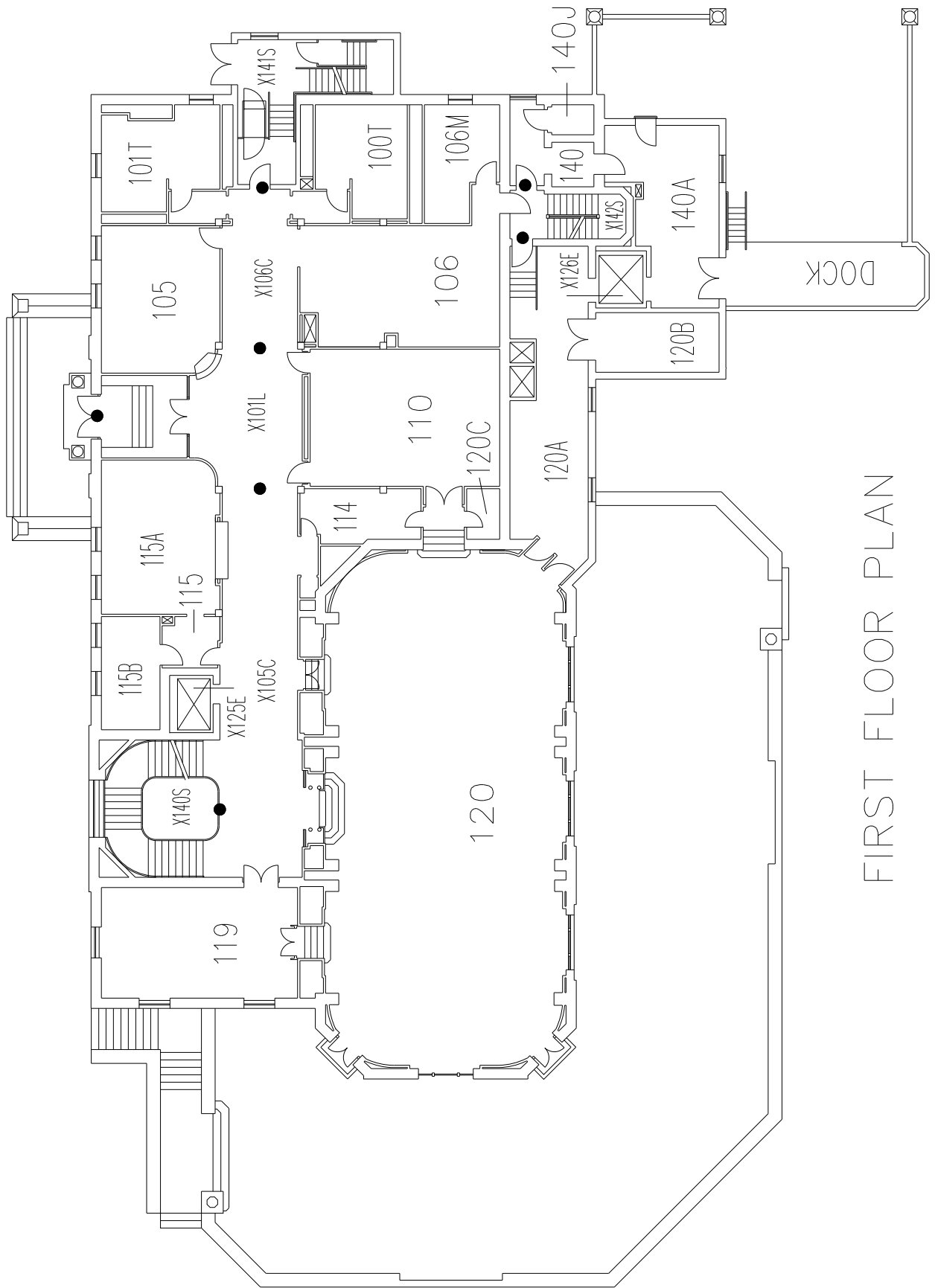
APPENDIX

Reduced Scale Building Floor Plans



DISCLAIMER: No guarantee is
building features
responsibility for

BASEMENT FLOOR PLAN



FIRST FLOOR PLAN

