

FACILITY AUDIT REPORT
Hughes Hall
#042

FEBRUARY 5, 1992

Prepared by:
The Ohio State University
Department of Physical Facilities
Division of Resource Management

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GENERAL BUILDING INFORMATION

Hughes Hall #042

BUILDING ADDRESS: 1899 North College Road

GROSS SQ. FT.: 61,564

NET ASSIGNABLE SQ. FT.: 33,841

MECHANICAL/CUSTODIAL AREA SQ. FT.: 5,337

YEAR OF CONSTRUCTION: 1948

YEAR OF LAST RENOVATION: N/A

NUMBER OF STORIES/BASEMENT: Four (4) stories with a full basement

AIR CONDITIONING (Percentage): 36

CURRENT USE: School of Music offices, classrooms, and practice rooms.

TYPE OF CONSTRUCTION: Reinforced concrete frame with masonry skin.

ESTIMATED REPLACEMENT COST: \$ 7,754,000 *

BUILDING APPEARANCE: Dated decor, very little updating, finishes are the original glazed block and floor tile.

HANDICAPPED ACCESSIBILITY: The northeast front entrance has a ramp from 17th Avenue to the automatic door opener at the front door. The elevator is located across the corridor from the door entrance.

OVERALL BUILDING CONDITION: Major Rehabilitation **

NUMBER OF EXIT STAIRWAYS: Two (2)

* Replacement Cost assigned January 1991 by the Office of Campus Planning and Space Utilization.

** Office of Campus Planning and Space Utilization C-1 Report Condition Code.

BUILDING SYSTEMS INFORMATION

Hughes Hall #042

HEATING:

Source POWER PLANT

Type Heating System HOT WATER

Steam (Line size, valve location) NONE

Building Htg Water (line size, valve location) 6" HWS, 6" HWR, RM #15

VENTILATION SYSTEM:

THREE AIR HANDLERS FOR VENTILATION ONLY AND TWO SINGLE ZONE A/C SYSTEMS

COOLING: Bldg % 36% Chillers ELECTRIC RECIPROCATING WITH WATER CONDENSER

Window Units 28 UNITS Thru-the-wall NONE Direct exp. units ONE (1)

HVAC CONTROL SYSTEM: ELECTRIC CONTROLS (JC-80 SYSTEM IS USED FOR FIRE ALARMS ONLY)

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

1. PGN9/PGS3 500 13,200 / 208Y/120 VAC-PAC VAULT OUTSIDE

PLUMBING:

Water (size, valve location) 4" LINE, ROOM #15

Gas (size, valve location) NONE

Domestic Hot Water (size, valve location) 2 1/2" DHWS, 1 1/2" DHWR, RM #15

Compressed Air (size, location) 1" LINE FROM TUNNEL IN ROOM 015.

SEWERS: Storm NONE Sanitary NONE Combination 17 @ 4", 1 @ 6"

METERS:

Gas (size, location) NONE

Water (size, location) NONE

Electric (size, location) NONE

ALARM SYSTEMS:

Fire Alarm YES Panel Location ROOM #15

Fire Pump NONE Pump Location

Sprinklers NONE Panel Location

Other Alarms SMOKE DETECTORS IN AIR HANDLER DUCT SYSTEMS

ELEVATORS:

Number ONE (1) Type (passenger, freight) FREIGHT

Manufacturer DOVER Size 8000 LBS, 50 FPM

EMERGENCY GENERATOR: Size NONE Location

KEY BOX LOCATION: SOUTHEAST STAIRWELL NEAR ROOM 109

ASBESTOS SURVEY (1986):

PIPE INSULATION IN ROOMS 15, 110, 401M, 412M, FLOOR TILE, AND TRANSITE PANELS ON THE FOURTH FLOOR WERE FOUND TO CONTAIN ASBESTOS MATERIALS.

HUGHES HALL NARRATIVE

GENERAL

This Building Audit was conducted by Physical Facilities for the purpose of evaluating the present condition of the building for which Physical Facilities has a budgetary responsibility. This audit describes the current physical condition of the facility and identifies existing corrective maintenance and building component replacement requirements. It has been assumed that the program needs of the tenant departments are being met by the facility. Audit objectives and methodology are described in greater detail in the "Building Audit Methodology" section of this report.

HISTORY

Hughes Hall was built in 1948 and was referred to as the Recitation Building. The building was designed in 1944, but the construction was delayed until 1948 and an additional floor was added to the original design making it a four story building. The building has not been remodeled or rehabilitated in the 44 years of its operation.

The building is used by the Department of Music for offices, classrooms, practice rooms, and instrument storage and repair. During the last year several of the classrooms that were used exclusively by the Music Department have been added to the classroom pool. This has increased the amount of traffic in the building and results in additional wear and tear on the building.

A current funded project is replacing the tile floor and recovering the theater seats in the auditorium. The current building use is as follows: Classrooms 41%, Offices 26%, Laboratories and Practice Rooms 22%, and Mechanical 11%.

The use of computers, electronic keyboards, and the need for air conditioning has put demands on the electrical system that far exceed the original design criteria for the building. A recent inspection by the fire prevention group revealed 59 incidents where electrical extension cords are being improperly used in Hughes Hall. The building does not have a central air conditioning system. The small percentage of the building that is cooled uses window air conditioners and single zone direct expansion units.

The lack of air conditioning also puts a strain on the musical instruments that are subject to high humidity in the summer months and low humidity in the winter months.

PRIMARY SYSTEMS

The foundations, substructure, and superstructure all appear to be in good condition. The northeast corner of the basement area has experienced some dampness after heavy rains, but this is associated with improper drainage around the exterior of the building and not the basic structure. The exterior brick has been tuckpointed in the past and is in good condition. There are ivy vines growing on the brick in several areas that we recommend be removed before damage is caused to the mortar joints from the vines.

The single glazed aluminum frame windows are worn and a few are difficult to open and close. We are proposing a project to replace these windows with a double glazed insulated window that would reduce energy loss and make the windows easier

to operate. The entry doors to Hughes Hall are wood. The wood doors in the front are painted with a full glass insert. The rear doors from the auditorium are solid wood painted. The weather seals are in very poor condition and the hardware has a tendency to stick and not allow the doors to close tight.

The roofing for Hughes Hall is in very poor condition. The auditorium has a built-up roof that has leaked and been patched several times. The suspended ceiling in the auditorium had to be replaced a few years ago because the steel frame had rusted and gave away from water damage. The new ceiling currently has water stains from the roof leaking. The rest of the building is covered with a copper roof that has also been leaking. Because of the many different angles and shapes in the exterior roof there are several valleys and gutters that have been patched with mastic. Since the mastic has a different rate of thermal expansion than copper these patches crack open and need to be repaired repeatedly. The proposed project to replace the roof on Hughes Hall should be funded before additional ceiling damage is caused.

SECONDARY SYSTEMS

The partitions, doors, walls, floors, and ceilings are in fair condition. The interior wear surfaces have experienced a lot of wear and tear over the past 44 years. The glazed block used in corridors of the 2nd and 3rd floor has been painted with a white paint. The practice rooms on the 4th floor have double doors and painted walls that need to be rehabilitated. Several of the doors have been damaged and need to be repaired or replaced.

The ceiling on the 4th floor has been repaired several times because of water damage and continues to have water damage because of roof leaks. The auditorium ceiling needs to be painted because of damaged from the tape used to seal the registers during the removal of the asbestos floor tile. Ceilings on the other floors have been painted at different times and are in good condition considering their age.

The floors are primarily vinyl tile that was originally installed. The stairwell entry ways, auditorium floor, and the corridors on the 1st and 2nd floor have had new tile installed. A few of the offices have had carpet installed over the tile. The original tile decor is outdated, but the tile is in good condition.

SERVICE SYSTEMS

All the major service systems are aging and provide problems in the operation of the building. The elevator was installed in 1986 and was designed to move pianos from floor to floor. The elevator speed has been a topic of concern by the Department of Music since it is slow for use as a passenger elevator. In conversation with the elevator manufacturer's representative it was estimated that it would cost approximately \$40,000 to increase the speed of the current elevator.

The hot water heating system has radiators located on the outside walls and a ventilation system with hot water heating coils. Two of the three ventilation systems are shut down. These systems were turned off because of water leaks in the heating coils that were not repaired. The building is currently being heated by the hot water radiators. Manual control valves were added to the radiators in 1981 so that the occupants could control the amount of heat being supplied to each room. These valves have had a tendency to stick causing the occupants to not be able to control the heat in their rooms.

Only 36% of the area in the building is air conditioned. The auditorium has a 40 ton water cooled chiller that was installed in 1957. There is a 7 1/2 ton DX unit that provides cooling for the offices located on the north side of the building. This unit was installed in 1976. The remaining areas of the building that are cooled have 28 window air conditioners. A few of these units have been installed by the occupants using plywood to seal the opening in the window next to the air conditioner. The two major air conditioning systems are well past their expected life and will have to be replaced in the future. The installation of a central air conditioning system should be considered to bring this building up to current environmental standards.

ELECTRICITY

The electric service for Hughes Hall is supplied by a 500 KVA transformer that is located at the southeast corner of the building. The electrical distribution panels are located in room 015m. The building does not have much excess capacity to satisfy any new electrical requirements. There are a limited number of electrical receptacles available for connecting electronic equipment in the classrooms and offices. This has resulted in the occupants using numerous extension cords that are in violation of the university rules. The grounding of the receptacles is provided through the conduit, which provides an inadequate ground for some equipment. We are proposing that a new electrical distribution system be run in the building to add more electrical outlets and provide a properly grounded system.

The building has a combination of fluorescent light fixtures and incandescent light fixtures. Most of the office areas and corridors have had fluorescent fixtures installed. The classrooms and practice rooms still have the original incandescent fixtures. We have proposed a project to install fluorescent lighting in all of the classrooms and practice rooms in Hughes Hall. The auditorium lighting is all incandescent that is controlled by a dimmer switch so that the light intensity can be varied. The latches on the glass lens doors to the auditorium lights have been breaking and coming loose. A few of the heavy glass lenses have fallen. We are proposing a project to replace these light fixtures. Several of the spot lights on the stage have burned-out bulbs that should be replaced.

SAFETY STANDARDS

Hughes Hall is equipped with a manual fire alarm system. There are fire hose cabinets and fire extinguishers located on each floor. There are smoke detectors located in the ducts of the air handling systems. There are no emergency lights in the building. The EMS, fire prevention inspection completed last year listed several breaches (holes in the wall or ceiling areas) that need to be repaired to prevent the spread of flames, smoke, and toxic gases.

The Ohio Board of Regents Facilities Asbestos Inspection and Risk Assessment Program's report: Inventory of friable Asbestos-Containing Materials in Buildings of the Ohio State University (Main and Branch Campuses) and Recommendations for Corrective Action by PEI Associates, September 1986, located asbestos containing materials in the pipe insulation located in the mechanical rooms.

BUILDING PERIMETER

The sidewalks on College Road and 17th Avenue are in good condition. The steps on the north entrances have become misaligned and a project is proposed to correct this alignment and repair the stone wall next to the steps. The shrubbery on the south and north sides of the building is overgrown and needs to be trimmed. The small lawn area in the front of the building has several bare areas that should be seeded to stop any potential erosion problems.

The exterior lighting of Hughes Hall is good. The street lights located along College and 17th light up the general area and the four (4) lamp posts at the entrances provide good lighting near the building. The only dark area around the building is at the loading dock. We are recommending that an exterior lamp be added to provide light at the loading dock.

CONCLUSION

Hughes Hall is a very busy building. With the practice rooms being used until late into the evening most weekdays this building is utilized about 15 hours a day. The building was originally designed as a recital building and has several design features to control the sound transmission from one room to the next. It would not be prudent to convert Hughes Hall to a different building use and then have the cost of incorporating these special design features in another building.

Since the building has not been rehabilitated in its 44 years of existence, there are several building components that have exceeded their useful expected life and are going to need replaced. These systems include the roofing, plumbing, heating, lighting, and a complete redecorating of the building interior. There have also been changes in the occupant needs in the past 44 years that would justify the electrical distribution system, fire protection, and the air conditioning system.

While it would be appropriate to complete a major rehabilitation on Hughes Hall at this time, it is not likely to happen for several years because of limited capital funds. Priority should be given to replacing the roof and upgrading the electrical system to satisfy the most immediate building problems.

PROPOSED MAINTENANCE PROJECTS
(R&R or Capital Funded)

Hughes Hall #042

A. Corrective Maintenance Projects:

1. Replace approx. 11,800 SF of copper batten roof and 1,800 SF of copper flat seam roof. Replace approx. 3,000 SF of BUR roof including insulation and gravel stop. Replace copper pan gutter, step flashing, copper gutter, and downspouts.....	\$424,400*
2. Replace hot water heating coil and water control valve to put AH1 back in operation. Inspect and make necessary repairs to put AH2 back in operation.....	7,300
3. Inspect and replace all inoperable manual temperature valves for radiators.....	<u>5,400</u>
Sub-Total	437,100

B. Building Improvement Projects:

1. Replace single glazed aluminum frame windows with double glazed thermal-break windows (163 windows).....	130,400
2. Replace wood entrance and exit doors with aluminum doors and install new door hardware.....	7,880
3. Replace incandescent light fixtures in classrooms with fluorescent light fixtures (75 fixtures).....	15,000*
4. Replace incandescent light fixtures in the auditorium.....	10,000
5. Add a secondary electric distribution system to include main secondary service, panel modification, and circuit redistribution.....	<u>35,000</u>
Sub-Total	198,280

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

1. Replace all restroom water supply lines and plumbing drain lines and install new plumbing fixtures.....	97,300
2. Replace central air conditioning system that supplies Room 100 & 101, and replace 28 window air conditioners with a central air conditioning system.....	<u>169,240</u>
Sub-Total	266,540

Total Cost for all Projects = \$ 901,920

* These projects are currently listed on the departmental proposed renovation project list.

MAINTENANCE PROJECTS
(Less than \$5,000)

Hughes Hall #042

1. Reset stone steps that are out of alignment and resealing all treads of front entrance steps. Replacing stone in northeast wing wall at front entrance and resealing both wing walls.*
2. Remove ivy from exterior of the building.
3. Repair breeches in walls and ceilings listed in EMS Fire Prevention report.
4. Repair ceiling plaster in auditorium and paint ceiling and registers.
5. Clean and repair venetian blinds in building.
6. General clean-up of mechanical rooms and attic areas to remove broken furniture, trash, and debris to comply with the EMS Fire Prevention Report.
7. Replace burned-out spot lights for the auditorium stage.
8. Clean glazed block in the stairwells and restrooms.
9. Trim shrubbery and seed the bare areas of the front lawn.
10. Repair 4th floor corridor lighting that is out of order.
11. Repair downspout at the SW corner of the building.
12. Add an exterior lighting at loading dock.

* These projects are currently listed on the departmental proposed renovation project list.

BUILDING EVALUATION SUMMARY

I. BUILDING INFORMATION

FAC # 042 FACILITY NAME: HUGHES HALL
 DATE: 1-27-92 INSPECTOR: RDL
 YEAR CONSTRUCTED: 1948
 GROSS SQ FT: 61,564 NET SQ FT: 33,841
 REPLACEMENT COST \$ 7,754,000 X 90% = \$ 6,978,600

II. COMPONENT RATING

COMPONENT	BUILDING COMPONENT PERCENTAGE OF TOTAL COST**	BUILDING COMPONENT REPLACEMENT COST	CONDITION VALUE MULTIPLIER FOR BLDG. COMPONENT	BUILDING COMPONENT CURRENT VALUE
Foundation	4.24	295,893	0.86	254,468
Columns and Beams	12.53	874,419	0.86	752,000
Exterior Walls	9.02	629,470	0.81	509,871
Windows & Doors	4.41	307,756	0.62	190,809
Roofing	8.71	607,836	0.42	255,291
Partitions & Drs.	9.44	658,780	0.69	454,558
Wall Finishes	2.89	201,682	0.57	114,959
Floor Finishes	5.46	381,032	0.69	262,912
Ceilings & Finish	7.78	542,935	0.53	287,756
Conveying	1.86	129,802	0.96	124,610
Plumbing	2.36	164,695	0.62	102,111
Heating	9.50	662,967	0.61	404,410
Cooling & Vent.	3.92	273,561	0.60	164,137
Elec. Ser. & Dist	1.88	131,198	0.71	93,151
Lighting & Power	12.65	882,793	0.40	353,117
Safety Standards	3.35	233,783	0.53	123,905
TOTALS	100.00	6,978,600	0.64	4,448,065

III. BUILDING RATING SUMMARY

Overall Building Rating = 64.0 %

* Replacement Cost assigned January 1991 by The Office of Campus Planning and Space Utilization 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.

COLUMNS AND BEAMS

FAC # 042 DATE: 1-22-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Columns and Beams:

	N/A	Sat	Att
Concrete-in-place <u>AROUND I-BEAM COLUMNS</u>	[]	[X]	[]
Precast Concrete _____	[X]	[]	[]
Steel <u>I-BEAMS ENCASED IN CONCRETE</u>	[]	[X]	[]
Steel Fireproofing _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

b. Floors:

Concrete Slab <u>WITH I-BEAMS USED TO SUPPORT FLOOR</u>	[]	[X]	[]
Precast Slab _____	[X]	[]	[]
Metal Deck _____	[X]	[]	[]
Metal Deck w/concrete fill _____	[X]	[]	[]
Wood _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Roof System:

Flat <u>OVER AUDITORIUM AREA WITH T&G WOOD DECK (RM 100)</u>	[]	[X]	[]
Pitched <u>STEEL BEAM TRUSSES WITH T&G WOOD DECK (MAIN BLDG)</u>	[]	[X]	[]
Concrete _____	[X]	[]	[]
Steel <u>BEAM TRUSSES SUPPORT WOOD DECK</u>	[]	[X]	[]
Wood <u>T&G WOOD DECK ON TOP OF TRUSSES</u>	[]	[X]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1. WOOD DECK & TRUSSES DO NOT SHOW ANY SIGNS OF DECAY OR DAMAGE.
2. ATTIC AREAS UNDER ROOF DECK ARE FULL OF DEBRIS AND DAMAGED EQUIPMENT. THIS AREAS SHOULD BE CLEANED AND NOT USED AS STORAGE ROOMS.

C. COMPONENT RATING: (\$ 874,419) x (0.86) = \$ 752,000

Possible	Condition	Component
Value	Value Multiplier	Value

EXTERIOR WINDOWS & DOORS

FAC # 042 DATE: 1-22-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Windows type & number:	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
Wood _____	[X]	[]	[]
Steel _____	[X]	[]	[]
Alum <u>AWNING STYLE WINDOWS</u>	[]	[X]	[]
Other _____	[X]	[]	[]

b. Window glazing

Single pane <u>ALUMINUM FRAME WINDOWS W/O ANY THERMAL BREAK</u>	[]	[]	[X]
Double pane _____	[X]	[]	[]
Other _____	[X]	[]	[]

c. Doors type & number:

Wood <u>REAR & FRONT ENTRANCE DOORS</u>	[]	[]	[X]
Steel _____	[X]	[]	[]
Alum _____	[X]	[]	[]
Other <u>GARAGE DOOR AT LOADING DOCK</u>	[]	[X]	[]

d. Shading Devices:

Types <u>VENETIAN BLINDS</u>	[]	[]	[X]
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B. COMMENTS:

1. THE SINGLE GLAZED ALUMINUM WINDOWS PROVIDE MINIMUM RESISTANCE TO THERMAL ENERGY TRANSFER.
2. THE WEATHER SEALS ON THE REAR DOORS TO THE AUDITORIUM NEED TO BE REPLACED. THE HARDWARE ON THESE DOORS IS STICKING AND NEEDS TO BE REPAIRED.
3. SEVERAL OF THE WOOD WINDOW SILLS SHOULD BE REFINISHED.

C. COMPONENT RATING: (\$ 307,756) X (0.62) = \$ 190,809

Possible	Condition	Component
Value	Value Multiplier	Value

PARTITIONS & DOORS

FAC # 042 DATE: 1-22-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Partition Framing:			
Concrete Block _____	[X]	[]	[]
Glazed Block <u>USED FOR MOST WALLS, PAINTED IN CORRIDOR</u>	[]	[]	[X]
Wood Stud <u>USED FOR DIVIDING PRACTICE ROOMS</u>	[]	[X]	[]
Metal Stud _____	[X]	[]	[]
Structural Tile <u>USED IN ATTIC AREAS FOR BEARING WALLS</u>	[]	[X]	[]
Rated _____	[X]	[]	[]
b. Special partitions and Walls:			
Toilet <u>PAINTED METAL PARTITIONS</u>	[]	[X]	[]
Screen Walls _____	[X]	[]	[]
Gate _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Wall Material:			
Plaster <u>USED FOR EXTERIOR WALLS AND SOME PARTITIONS</u>	[]	[]	[X]
Plaster Board _____	[X]	[]	[]
Glass _____	[X]	[]	[]
Plywood _____	[X]	[]	[]
Paneling _____	[X]	[]	[]
Trim & Wainscot _____	[X]	[]	[]
Tile/Glazed _____	[X]	[]	[]
Other _____	[X]	[]	[]
d. Interior Doors & Frames:			
Met Door/Met Frame <u>USED IN STAIRWELLS</u>	[]	[X]	[]
Wood Door/Wood Frame <u>USED IN PRACTICE ROOMS</u>	[]	[X]	[]
Wood Door/Metal Frame <u>USED FOR CLASSROOMS & OFFICES</u>	[]	[X]	[]
Glazing _____	[X]	[]	[]
Roll Up _____	[X]	[]	[]
Sliding _____	[X]	[]	[]
Other _____	[X]	[]	[]
e. Hardware:			
Door Closers <u>WORN, BUT CONTINUE TO OPERATE</u>	[]	[X]	[]
Lock Sets <u>WORN, BUT CONTINUE TO OPERATE</u>	[]	[X]	[]
Kick/Push Plates _____	[X]	[]	[]
Thresholds _____	[X]	[]	[]
Panic Devices <u>WORN, SOMETIMES THEY STICK OPEN</u>	[]	[]	[X]
Security & Detection _____	[X]	[]	[]
Automatic Openers <u>HANDICAPPED ENTRANCE NE FRONT DOOR</u>	[]	[X]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1. GLAZED BLOCK IN STAIRWELLS AND CORRIDORS NEEDS TO BE CLEANED. CORRIDORS ON THE 2ND, 3RD, & 4TH FLOOR HAVE HAD THE GLAZED BLOCK PAINTED.
2. PLASTER NEEDS REPAIRED IN SEVERAL AREAS, SEE EMS REPORT.

C. COMPONENT RATING: $\frac{(\$ 658,780)}{\text{Possible Value}} \times \left(\frac{0.69}{\text{Condition Value Multiplier}} \right) = \frac{\$ 454,558}{\text{Component Value}}$

WALL FINISHES

FAC # 042 DATE: 1-24-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION	<u>N/A</u>	<u>Sat</u>	<u>Att</u>
a. Paint <u>SEVERAL ROOMS NEED PAINTED</u>	[]	[]	[X]
b. Wall Coating _____	[X]	[]	[]
c. Wall Coverings _____	[X]	[]	[]
d. Paneling			
Prefinished <u>LOWER WALL AREAS OR THE AUDITORIUM</u>	[]	[]	[X]
Plank _____	[X]	[]	[]
e. Cork _____	[X]	[]	[]
f. Wallpaper _____	[X]	[]	[]
g. Ceramic Tile _____	[X]	[]	[]
h. Trim & Wainscot _____	[X]	[]	[]
i. Decoration _____	[X]	[]	[]
j. Glass _____	[X]	[]	[]
k. Other _____	[X]	[]	[]

B. COMMENTS

1. CLASSROOMS, PRACTICE ROOMS AND OFFICE AREAS NEED PAINTED.

C. COMPONENT RATING: (\$ 201,682) x (0.57) = \$ 114,959
 Possible Condition Component
 Value Value Multiplier Value

FLOOR FINISHES

FAC # 042 DATE: 1-24-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. Carpet:			
Rolled <u>LOCATED IN A FEW OFFICES AND CLASSROOMS</u>	[]	[X]	[]
Tile _____	[X]	[]	[]
b. Composition:			
Epoxy _____	[X]	[]	[]
Synthetic <u>COMMERCIAL GRADE, 28 OZ.</u>	[]	[X]	[]
Other _____	[]	[]	[]
c. Concrete Topping:			
Clear Sealant _____	[X]	[]	[]
Abrasive _____	[X]	[]	[]
Epoxy _____	[X]	[]	[]
Aggregate _____	[X]	[]	[]
d. Resilient:			
Vinyl Tile <u>WAS USED AS THE ORIGINAL FLOORING</u>	[]	[]	[X]
Linoleum _____	[X]	[]	[]
Rubber _____	[X]	[]	[]
Cork _____	[X]	[]	[]
e. Ceramic Tile _____	[X]	[]	[]
f. Masonry _____	[X]	[]	[]
g. Terrazzo <u>USED IN THE RESTROOMS & STAIRS</u>	[]	[X]	[]
h. Wood <u>STAGE FLOOR IN THE AUDITORIUM (DEPARTMENT EQUIP.)</u>	[]	[]	[X]
i. Metal _____	[X]	[]	[]

B. COMMENTS

1. THE VINYL TILE FLOOR USED IN THE ORIGINAL CONSTRUCTION DOES CONTAIN SOME ASBESTOS MATERIALS. THE AUDITORIUM RECENTLY HAD THE OLD TILE REMOVED AND NEW VINYL TILE INSTALLED.
2. THE WOOD STAGE FLOOR IS VERY WORN AND HAS LOOSE BOARDS THAT NEED TO BE REPLACED.

C. COMPONENT RATING: $\frac{(\$ 381,032)}{\text{Possible Value}} \times \left(\frac{0.69}{\text{Condition Value Multiplier}} \right) = \frac{\$ 262,912}{\text{Component Value}}$

CEILING AND FINISHES

FAC # 042 DATE: 1-24-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. System Type:	N/A	Sat	Att
Exposed _____	[X]	[]	[]
Applied to Structure <u>12" X 12" ACOUSTICAL TILE</u>	[]	[]	[X]
Suspended <u>METAL WITH PLASTER ON 4TH FLOOR</u>	[]	[]	[X]
 b. Materials:			
Drywall _____	[X]	[]	[]
Plaster <u>USED IN SEVERAL CLASSROOMS AND OFFICE AREAS</u>	[]	[X]	[]
Mineral Fiber Board <u>INSTALLED IN A REMODELED OFFICES</u>	[]	[X]	[]
Metal Pan _____	[X]	[]	[]
Luminous Panels _____	[X]	[]	[]
Other _____	[X]	[]	[]
 c. Finishes:			
Paint <u>CORRIDORS HAVE BEEN PAINTED OVER ACOUSTICAL TILE</u>	[]	[X]	[]
Mineral Fiber <u>REMODELED OFFICE AREAS</u>	[]	[X]	[]
Fabric _____	[X]	[]	[]
Prefinished _____	[X]	[]	[]
Other _____	[X]	[]	[]
 d. Openings & Inserts:			
Air Distribution <u>REGISTERS LOCATED IN AUDITORIUM CEILING</u>	[]	[]	[X]
Lighting Fixtures <u>HANGING BELOW CEILING</u>	[]	[X]	[]
Access Panels _____	[X]	[]	[]
Skylights _____	[X]	[]	[]
Fire Protection _____	[X]	[]	[]
Other _____	[X]	[]	[]

B. COMMENTS:

1. CEILINGS ARE STAINED IN SEVERAL AREAS FROM WATER LEAKS.
2. CEILING REPAIRS SHOULD BE DELAYED UNTIL A NEW ROOF HAS BEEN INSTALLED.

C. COMPONENT RATING: (\$ 542,935) x (0.53) = \$ 287,756

Possible	Condition	Component
Value	Value Multiplier	Value

CONVEYING

FAC # 042 DATE: 1-23-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Elevators:

	N/A	Sat	Att
Number <u>ONE (1), INSTALLED IN 1986</u>	[]	[X]	[]
Type <u>FREIGHT ELEVATOR, DOVER HYDRAULIC</u>	[]	[X]	[]
Speed <u>50 FPM, 6 LANDINGS</u>	[]	[X]	[]
Capacity (lbs) <u>8000 LBS.</u>	[]	[X]	[]
Dimensions <u>6' X 8' FLOOR AREA</u>	[]	[X]	[]
Door Operation:			
Center <u>5' 10" DOOR OPENING</u>	[]	[X]	[]
To Side _____	[X]	[]	[]

b. Lifts and Hoists:

Number _____	[X]	[]	[]
Type _____	[X]	[]	[]

c. Moving Stairs and Walks:

Number _____	[X]	[]	[]
Type _____	[X]	[]	[]

d. Conveyors:

Number _____	[X]	[]	[]
Type _____	[X]	[]	[]

e. Pneumatic Tubes:

Number _____	[X]	[]	[]
Type _____	[X]	[]	[]

B. COMMENTS:

1. ELEVATOR WAS DESIGNED TO MOVE GRAND PIANO WITHOUT TURNING THE PIANO ON ITS SIDE.
2. THE DEPARTMENT OF MUSIC HAS REQUESTED THAT A COST ESTIMATE BE MADE TO EVALUATE THE POSSIBILITY TO INCREASE THE SPEED OF THE ELEVATOR.

C. COMPONENT RATING: (\$ 129,802) x (0.96) = \$ 124,610

Possible Condition Component
Value Value Multiplier Value

MECHANICAL/HEATING

FAC # 042 DATE: 1-23-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

a. Heat Source:	N/A	Sat	Att
Central Plant Steam _____	[X]	[]	[]
Central Plant Hot Water <u>SUPPLIES PERIMETER RADIATORS</u>	[]	[X]	[]
Boilers: Type _____	[X]	[]	[]
Size _____	[X]	[]	[]
Furnace: Type _____	[X]	[]	[]
Size _____	[X]	[]	[]
Heat Pump: Type _____	[X]	[]	[]
Size _____	[X]	[]	[]
Burners: gas _____	[X]	[]	[]
oil _____	[X]	[]	[]
b. System Type:			
Steam _____	[X]	[]	[]
Hot Water <u>HEATING COILS IN AIR HANDLERS ARE CORRODED</u>	[]	[]	[X]
Air _____	[X]	[]	[]
Electric _____	[X]	[]	[]
Solar _____	[X]	[]	[]
Other _____	[X]	[]	[]
c. Space Equipment:			
Radiators <u>LOCATED ON THE PERIMETER WALLS</u>	[]	[X]	[]
Convectors _____	[X]	[]	[]
Finned Tube _____	[X]	[]	[]
Baseboard _____	[X]	[]	[]
2-Pipe Fan Coil _____	[X]	[]	[]
Unit Ventilators <u>UNITS LOCATED IN BASEMENT END ROOMS</u>	[]	[X]	[]
Multizone _____	[X]	[]	[]
Double Duct _____	[X]	[]	[]
Terminal Reheat _____	[X]	[]	[]
Other <u>THREE AIR HANDLERS SUPPLY VENTILATION TO BLDG.</u>	[]	[]	[X]
d. Control Type:			
Pneu _____	[X]	[]	[]
Electric <u>HONEYWELL ELECTRIC CONTROLS</u>	[]	[X]	[]
Electronic _____	[X]	[]	[]
DDC _____	[X]	[]	[]
Manual Valves <u>ADDED TO PERIMETER RADIATORS IN 1981</u>	[]	[]	[X]

B. COMMENTS:

1. IT IS DIFFICULT TO REGULATE HEAT FROM RADIATORS. SEVERAL OF THE MANUAL VALVES DO NOT CLOSE. OCCUPANTS COMPLAIN OF ROOMS BEING TOO HOT.
2. TWO (2) OF THE AIR HANDLER SYSTEMS ARE TURNED OFF. AIR HANDLER IN ROOM 401M HAS HOT WATER CONTROL VALVE REMOVED AND WATER LINE CAPPED.

C. COMPONENT RATING: (\$ 662,967) x (0.61) = \$ 404,410

Possible Condition Component
Value Value Multiplier Value

COOLING & VENTILATING

FAC # 042 DATE: 1-23-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
a. System:			
Type <u>BUILDING DOES NOT HAVE A CENTRAL A/C SYSTEM</u>	[X]	[]	[]
Capacity _____	[X]	[]	[]
b. Chillers:			
Centrifugal _____	[X]	[]	[]
Reciprocating _____	[X]	[]	[]
Absorption _____	[X]	[]	[]
c. Cooling Towers:			
Type <u>MARLEY (AQUATOWER), INSTALLED IN 1980</u>	[]	[X]	[]
Capacity _____	[X]	[]	[]
d. Condensers: <u>TRANE, 7 1/2 TON, R-22, INSTALLED IN 1976</u>	[]	[X]	[]
e. Space Equipment:			
Direct Expansion -			
Window units <u>28 UNITS INSTALLED</u>	[]	[]	[X]
Thru-the-wall _____	[X]	[]	[]
Single zone <u>AUDITORIUM IS COOLED WITH A TRANE 40 TON DX UNIT THAT HAS A WATER COOLED CONDENSER</u>	[]	[]	[X]
Air/Water -			
2-pipe fan coil _____	[X]	[]	[]
Unit ventilators _____	[X]	[]	[]
Terminal Reheat _____	[X]	[]	[]
Variable volume _____	[X]	[]	[]
Dual Duct _____	[X]	[]	[]
Multi-zone _____	[X]	[]	[]
f. Special Systems:			
Type <u>SINGLE ZONE A/C SERVES RM 101A-K</u>	[]	[X]	[]
Capacity <u>7 1/2 TONS</u>	[]	[X]	[]
g. Control Systems:			
Pneu _____	[X]	[]	[]
Electric <u>CONTROLS A/C's, AIR HANDLERS,</u>	[]	[]	[X]
Electronic _____	[X]	[]	[]
h. Fans:			
Exhaust <u>THREE (3) EXHAUST FANS</u>	[]	[X]	[]
Recirculating <u>FOUR (4) SUPPLY FANS</u>	[]	[]	[X]

B. COMMENTS:

1. AIR CONDITIONER THAT COOLS AUDITORIUM (RM 100) IS DIFFICULT TO CONTROL. THE COOLING COIL HAS FOUR (4) EXPANSION VALVES THAT ARE USED TO CONTROL THE AIR TEMPERATURE ENTERING THE ROOM. THIS UNIT WAS INSTALLED IN 1957.
2. SEVERAL OF THE WINDOW A/C's HAVE BEEN INSTALLED WITH PLYWOOD COVERING THE WINDOW OPENING.

C. COMPONENT RATING:
$$\frac{(\$ 273,561)}{\text{Possible Value}} \times \left(\frac{0.60}{\text{Condition Value Multiplier}} \right) = \frac{\$ 164,137}{\text{Component Value}}$$

ELECTRICAL/SERVICE & DISTRIBUTION

FAC # 042 DATE: 1-28-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

(a)Service:

Substation McCRACKEN POWER PLANT CIRCUIT PGN9/PGS3

Primary Voltage 13,200 VOLTS

Transformer:

Manufacture	Type	KVA	Secondary Voltages
<u>VONTRAN</u>	<u>MINERAL</u>	<u>500</u>	<u>208Y/120</u>

(b)Distribution System:

Panelboard (type) CIRCUIT BREAKERS, 2 PANELS PER FLOOR

Voltage 120/208 VOLTS

Amperage TWO (2) 1000 AMP DISTRIBUTION CIRCUITS

Conduit STEEL & ALUMINUM

Conductor COPPER

Wire (type) VARIES

Armored Cable N/A

Other N/A

(c)Emergency System:

General or (type & capacity) NONE

B. COMMENTS:

1. PANEL BOARDS LOCATED ON EACH FLOOR ARE AT CAPACITY. NO NEW CIRCUITS SHOULD BE ADDED.
2. A NEW GROUNDED ELECTRICAL DISTRIBUTION SYSTEM IN THE BUILDING IS NEEDED.

C. COMPONENT RATING: $(\$ 131,198) \times (0.71) = \$ 93,151$
Possible Condition Component
Value Value Multiplier Value

SAFETY STANDARDS

FAC # 042 DATE: 1-24-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

(a) Exits:

Stair Construction:	N/A	Sat	Att
concrete _____	[X]	[]	[]
steel <u>FRAMES WITH TERRAZZO TREADS</u>	[]	[]	[X]
wood _____	[X]	[]	[]
Number of exits <u>TWO (2) STAIRWELL EXITS</u>			

(b) Fire Rating:

Construction Type: I X II ___ III ___ IV ___ V ___ VI ___
 Building Height: 65 FEET, FOUR (4) stories

(c) Extinguishing Systems:

Portable <u>LOCATED ON EACH FLOOR</u>	[]	[X]	[]
Standpipe _____	[X]	[]	[]
Hose Cabinets <u>LOCATED AT STAIRWELLS EACH FLOOR</u>	[]	[X]	[]
Sprinklers _____	[X]	[]	[]
Suppression _____	[X]	[]	[]
Other _____	[X]	[]	[]

(d) Detection & Alarm Systems:

Manual Alarm <u>PULL STATIONS AT EACH FLOOR</u>	[]	[X]	[]
Annunciator <u>LOCATED ROOM #15</u>	[]	[X]	[]
Smoke Detectors <u>LOCATED IN DUCTS OF AIR HANDLERS</u>	[]	[X]	[]

(e) Lighting Systems:

Exit Signs <u>AT EACH STAIRWELL</u>	[]	[X]	[]
Exit Lighting _____	[X]	[]	[]
Emergency Lighting _____	[X]	[]	[]
Emergency Generator _____	[X]	[]	[]

B. COMMENTS:

1. EMS, FIRE PREVENTION, HAS IDENTIFIED SEVERAL AREAS WITH BREACHES THAT NEED TO BE REPAIRED TO PREVENT THE SPREAD OF FLAMES, SMOKE, & TOXIC GASES.

C. COMPONENT RATING: $(\$ 233,783) \times (0.53) = \$123,905$
 Possible Condition Component
 Value Value Multiplier Value

BUILDING PERIMETER EVALUATION

FAC # 042 DATE: 1-22-92 INSPECTOR: RDL

A. SYSTEM DESCRIPTION

	N/A	Sat	Att
1. Structural Access:			
Driveway <u>FROM 17TH AVENUE TO THE LOADING DOCK</u>	[]	[X]	[]
Loading Dock <u>LOCATED AT THE NW CORNER OF THE 1ST FLOOR</u>	[]	[X]	[]
Sidewalks			
Front <u>BRICK PAVERS ON THE EAST (COLLEGE ROAD)</u>	[]	[X]	[]
Side <u>ASPHALT OVER BRICK PAVERS ON THE NORTH (17TH AVE)</u>	[]	[X]	[]
Rear <u>CONCRETE WALKS ON THE WEST (REAR OF BLDG)</u>	[]	[X]	[]
Steps			
Front <u>CONCRETE AND MARBLE STEPS ON THE EAST</u>	[]	[X]	[]
Side _____	[X]	[]	[]
Rear _____	[X]	[]	[]
Handicap Ramp <u>LOCATED AT THE NW ENTRANCE (FRONT)</u>	[]	[X]	[]
2. Lawn and Landscaping:			
Lawn <u>THERE ARE SOME BARE AREAS IN THE FRONT (COLLEGE)</u>	[]	[]	[X]
Shrubs <u>SHRUBBERY IS OVER GROWN</u>	[]	[]	[X]
Trees <u>TWO (2) TREES LOCATED IN THE FRONT</u>	[]	[X]	[]
Undesirable Insect _____	[X]	[]	[]
Bedding Material _____	[X]	[]	[]
Watering System <u>BUILDING HAS OUTSIDE HOSE BIBBS</u>	[]	[X]	[]
3. General Site Information:			
Signage <u>LOCATED ON THE EAST SIDE, COLLEGE ROAD</u>	[]	[X]	[]
Address Identification <u>LOCATED ON IDENTIFICATION SIGN</u>	[]	[X]	[]
Security Lights <u>FOUR (4) LAMPPOST IN FRONT, ONE IN REAR</u>	[]	[X]	[]
Street Lights <u>LOCATED ON COLLEGE RD AND 17TH AVENUE</u>	[]	[X]	[]
Drainage <u>FRONT YARD SLOPES TO COLLEGE ROAD.</u>	[]	[X]	[]
Storm Drains <u>LOCATED IN COLLEGE RD & 17TH AVENUE</u>	[]	[X]	[]

B. COMMENTS:

1. SHRUBBERY IS OVERGROWN AND NEEDS TO BE TRIMMED.
2. IVY SHOULD BE REMOVED FROM GROWING ON THE EXTERIOR OF THE BUILDING.
3. LAWN AREA IN FRONT NEEDS SEEDED TO ELIMINATE BARE SPOTS.
4. EXTERIOR LIGHTING IS ADEQUATE.

**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 OSU buildings that the Department of Physical Facilities has budgetary responsibility. These audits will be used to establish corrective maintenance projects and budget cost estimates.

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, engineer's 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.

5. LIMITATIONS

(1) All inspections are visual and do not include physical tests, instrumentation or metering measurements, sampling, or monitoring.

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

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

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

obvious problems and to upgrade the buildings in a reasonable manner in regard to occupant safety.

(5) Cost estimates are in current year dollars and include contractor mark-ups, construction administration costs, and architectural/ engineering costs where applicable. Escalation factors must be applied for future work. 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. Ongoing maintenance and renovation projects are included.

(b) Includes exterior building walls and attached items.

(c) Includes the steps up at all entries. Ramps outside the buildings are included.

(d) Movable furniture is 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

ATT.....ATTENTION
BLDG.....BUILDING
BUR.....BUILT UP ROOF
COND.....CONDENSATE WATER
DD.....DUAL DUCK AIR HANDLING SYSTEM
DDHV.....DUAL DUCT HIGH VELOCITY
DHWR.....DOMESTIC HOT WATER RETURN
DHWS.....DOMESTIC HOT WATER SUPPLY
DX.....DIRECT EXPANSION AIR CONDITIONER
FPM.....FEET PER MINUTE
HID.....HIGH INTENSITY DISCHARGE LIGHT
HPS.....HIGH PRESSURE STEAM (125 PSI)
HVAC.....HEATING, VENTILATING AND AIR CONDITIONING SYSTEM
KV.....KILOVOLTS
KVA.....KILOVOLTS AMPS
KW.....KILOWATTS
LC.....LIQUID COOLED
LPS.....LOW PRESSURE STEAM (15 PSI)
MPS.....MEDIUM PRESSURE STEAM (50 PSI)
MZ.....MULTIZONE AIR HANDLING SYSTEM
N/A.....NOT APPLICABLE
PSI.....POUNDS PER SQUARE INCH
RM.....ROOM
SAT.....SATISFACTORY
SR.....STEAM RETURN LINE
SS.....STEAM SUPPLY LINE
TR.....TERMINAL REHEAT AIR HANDLING SYSTEM
V.....VOLTS
VAV.....VARIABLE AIR VOLUME SYSTEM

APPENDIX

**Building Floor Plans
C-1 Building Space Assignment**

Worksheet

CALCULATION OF BUILDING COMPONENT PERCENTAGE OF TOTAL COST

HUGHES HALL

#042

DATE: 1-28-91

MEAN SQUARE FOOT COSTS

BUILDING SYSTEM	CLASS	LAB.	OFFICE	SUBJECT	% TOTAL
Foundations	2.85	8.61	2.14	2.14	4.24
Columns and Beams	7.70	4.73	6.33	6.33	12.53
Exterior Walls	1.63	2.94	4.56	4.56	9.02
Ext. Windows & Drs.	2.23	2.28	1.29	2.23	4.41
Roofing	1.47	3.01	0.97	4.40	8.71
Partitions & Doors	4.77	5.87	3.76	4.77	9.44
Wall Finishes	1.46	2.96	1.45	1.46	2.89
Floor Finishes	2.76	3.31	4.28	2.76	5.46
Ceilings & Finish	3.93	3.93	3.93	3.93	7.78
Conveying	0.92	0.00	2.04	0.94	1.86
Plumbing	4.54	12.10	1.19	1.19	2.36
Heating	4.80	4.80	4.80	4.80	9.50
Cooling & Vent.	5.51	5.51	3.70	1.98	3.92
Elec. Ser. & Dist.	0.95	0.56	0.73	0.95	1.88
Lighting & Power	6.39	5.50	5.88	6.39	12.65
Safety Standard	1.70	2.66	0.31	1.70	3.35
TOTAL	53.61	68.77	47.36	50.53	100.00

Worksheet

CALCULATION OF THE CONDITION VALUE MULTIPLIER

HUGHES HALL #042

DATE: 1-28-92

	Expect Life	Age	Age Condition Value*	Perf Rate	Performance Condition Value**	Component Condition Value
Foundation	100	44	0.19	1.00	0.67	0.86
Column & Beams	100	44	0.19	1.00	0.67	0.86
Exterior Walls	75	44	0.14	1.00	0.67	0.81
Windows & Doors	60	44	0.09	0.80	0.53	0.62
Roofs	60	44	0.09	0.50	0.33	0.42
Partitions	60	44	0.09	0.90	0.60	0.69
Wall Finishes	15	15	0.00	0.85	0.57	0.57
Floor Finishes	60	44	0.09	0.90	0.60	0.69
Ceiling & Finish	40	40	0.00	0.80	0.53	0.53
Conveying	40	5	0.29	1.00	0.67	0.96
Plumbing	60	44	0.09	0.80	0.53	0.62
Heating	50	44	0.04	0.85	0.57	0.61
Cooling & Vent.	30	30	0.00	0.90	0.60	0.60
Electric Serv.	50	44	0.04	1.00	0.67	0.71
Lighting & Power	40	40	0.00	0.60	0.40	0.40
Safety Standards	25	25	0.00	0.80	0.53	0.53

* The age condition value is column (C-B) x 33.33%.

** The performance condition value is column E x 67.77%.