Mechanical and Electrical Systems
Existing Conditions Narrative

Auditorium at
Walter C. Polson Middle School
Madison, Connecticut

3/11/10

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CES Project No. 29066.00

A. ***PLUMBING NARRATIVE***

APPLICABLE CODES AND STANDARDS

There are presently no plumbing systems in the auditorium affected by this study.

B. ***FIRE PROTECTION NARRATIVE***

APPLICABLE CODES AND STANDARDS

The fire protection systems will be reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements, including the Bureau of School Facilities.

1. 2005 Connecticut State Building Code
2. 2005 Connecticut State Fire Safety Code
3. 2003 International Building Code(IBC)
4. NFPA 13 and 14, Latest Versions
5. State Department of Education School Construction Program

EXISTING SYSTEMS

1. There is no central fire protection system (sprinklers) currently at the facility. In addition, there are no stand pipes at the stage.

C. ***MECHANICAL NARRATIVE***

APPLICABLE CODES AND STANDARDS

The mechanical systems will be reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements, including the Bureau of School Facilities.

1. 2005 Connecticut State Building Code
2. 2005 Connecticut State Fire Safety Code
3. 2003 International Building Code(IBC)
4. 2003 International Mechanical Code
5. 2003 International Energy Conservation Code
6. NFPA, Latest Version
7. ASHRAE 90.1
8. State Department of Education School Construction Program

EXISTING SYSTEMS

1. The Auditorium and Sound & Light Booth are presently served by heating and ventilation equipment located in two mechanical rooms at the upper level adjacent to the sound booth. One room houses a return/exhaust fan. The other room houses a supply fan and hot water heating coil. The system is a ducted supply air with a return air system that is partially a plenum system. The ventilation system does not have mechanical cooling capabilities, however it appears to be able to take advantage of "free cooling" when outside are temperatures allow the economizer cycle to work. The equipment was installed in 1965.

2. The temperature controls serving the H&V equipment are outdated, pneumatic controls, however if new equipment is installed it can take advantage of new RCMS Automated Logic DDC system installed in the area.
3. The adjacent spaces such as Storage Rooms are served by local exhaust fans and unit heaters.

D. ***ELECTRICAL NARRATIVE***

APPLICABLE CODES AND STANDARDS

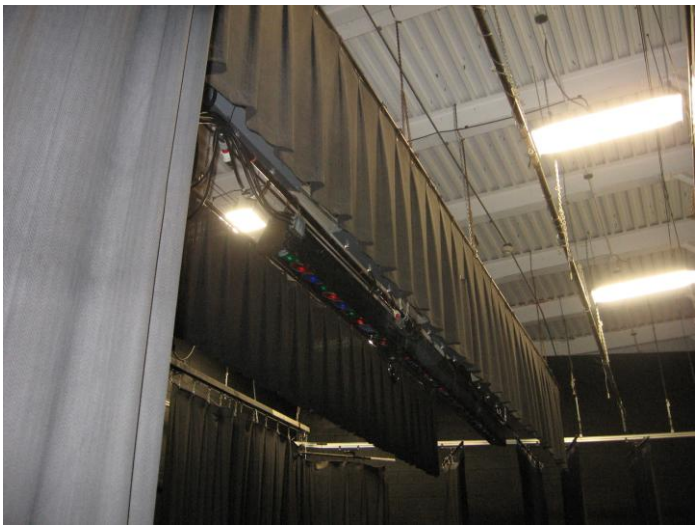
The electrical power, interior lighting, and fire alarm systems will be reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements, including the Bureau of School Facilities.

1. 2005 Connecticut State Building Code
2. 2005 Connecticut State Fire Safety Code
3. 2003 International Building Code(IBC)
4. 2003 International Energy Conservation Code
5. 2005 National Electrical Code, NFPA 70 (NEC)
6. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition

7. ASHRAE 90.1
8. State Department of Education School Construction Program

EXISTING SYSTEMS

1. Lighting at the seating area and stage consists of relatively newer T5 light fixtures. Theatrical lighting is outdated technology.



Sound & Light Booth

2. The audio-visual equipment at the Sound & Light Booth is outdated technology
3. The fire alarm system is a Notifier system with a Fire Lite dialer. There are presently manual fire alarm pullstations and smoke detectors in the spaces.
4. Emergency lighting is handled by 2-head emergency lighting fixtures with integral battery packs.

E. ***MEP SYSTEMS CONCLUSION***

In general, all MEP systems are over 45 years old and should be replaced if renovations are to occur. If the auditorium is to be air conditioned, the HVAC system will need to be replaced in its entirety and may require expansion of the mechanical room. Depending upon the level of renovations, new sprinklers and/or fire protection stand pipes may need to be installed. New electrical power to the area will be required to support the renovations. Renovations shall include new power distribution, theatrical lighting, emergency lighting, audio-visual equipment, fire alarm systems and replacement of some light fixtures due to replacement of HVAC systems.

Town of Madison								
Capital Needs Survey Form								Total Floor Area (sf):
Polson Middle School Auditorium								12,000

Note: The "System Priority Rating" (1 to 4 rating) and "Condition of the Existing System Rating" (1 to 5 rating) are to be reviewed together to assist in prioritizing replacement and/or upgrades. As an example, we recommend line items with a System Priority rating of 1 and Existing Conditions rating of 1 be prioritized for replacement and/or upgrades.

SYSTEM	System Priority 1 to 4 (1-Highest Priority, 4-Lowest Priority)	Condition of the Existing System 1 to 5 (1 Poor, 5 Excellent)	Last Major Reconstruction (Year)	Projected Replacement (Year)	Quantity	Unit Price	Current Replacement Cost	REMARKS
Division 2 - Site Construction								
Site - Fire Protection	1	N/A	1965	2015	1	$ 50,000	$50,000	New buried FP main from street
Other Site - Included in line items below								
Division 15 - Fire Protection								
Overall Fire Protection Reno - includes:	1	N/A	N/A	2015	12,000	$8	$96,000	
Alarm check valves/risers								
Sprinkler system throughout								
Standpipes at stage								
Assumes a fire pump is not needed								
Division 15 -Plumbing								
Overall Plumbing Renovations - includes:	2	1	1965	2015	12,000	$4	$48,000	
Minor Water Distribution Renovations								
Plumbing Fixtures								
Division 15 - HVAC								
Overall HVAC Renovations - includes:	2	1	1965	2015	12,000	$28	$336,000	
Ductwork Distribution								
Air Handling Unit(s)								
Compressor-condenser(s) on roof								
Refrigerant and Hot Water Piping								
Exhaust Systems								
Temperature Control Systems								
Structural steel - new roof mounted equip	2	1			1	$10,000	$10,000	
Division 16 - Electrical								
Overall Electrical Renovations - includes:	2	1	1965	2015	12,000	$18	$216,000	
Audio-Visual Equipment								
Distribution and Local Panels								
Lighting - general								
Emergency Lighting								
Misc Low Voltage Systems								
Fire Alarm System								
							$ 756,000	
							$ 63	per sf