Mechanical and Electrical Systems
Existing Conditions Narrative

Arts Barn
Madison, Connecticut

3/11/10

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CES Project No. 29066.00

A. ***PLUMBING NARRATIVE***

APPLICABLE CODES AND STANDARDS

The plumbing systems will be reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.

1. 2005 Connecticut State Building Code
2. 2005 Connecticut State Fire Safety Code
3. 2003 International Building Code(IBC)
4. 2003 International Plumbing Code
5. 2003 International Energy Conservation Code
6. NFPA, Latest Version
7. ASHRAE 90.1

PLUMBING UTILITIES

1. Domestic Water:
   a. Existing Domestic Water Service: The building is currently served by a domestic water main fed from Connecticut Water Company. This water service currently serves all of the building's domestic water needs.
2. Natural Gas:
   a. Existing Natural Gas Service: The building is currently served by natural gas fed from the local utility's distribution system.
3. Sanitary:
   a. Existing Sanitary Service: The building's sanitary sewer system provides sanitary waste drainage for plumbing fixtures located throughout the building. The sanitary waste piping discharges to a septic tank and leaching field.
4. Storm:
   a. Existing Storm System: Building is served by gutters.

PLUMBING FIXTURES AND SPECIALTIES

1. Existing plumbing fixtures are as follows:
   a. In general, fixtures are original to the building renovations in 1994 and are in fair condition.
   b. Urinals are wall mounted; vitreous china with flush valves. Water pressure appeared to be low at the flush valve.
   c. Lavatories are vitreous china.

d. Water closets are floor mounted; tank type, vitreous china.

DOMESTIC HOT WATER SYSTEMS

1. Existing Domestic Hot Water System: The domestic hot water is generated by a 20 gallon, electric water heater. The water heater is original to the building renovations in 1994 and is in fair condition.

B. ***FIRE PROTECTION NARRATIVE***

FIRE PROTECTION SERVICE

1. There is no central fire protection system (sprinklers) currently at the facility.

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.

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

EXISTING SYSTEMS

1. Heating, Ventilating and Air Conditioning (HVAC) is provided primarily by a Carrier packaged rooftop unit. The unit is a single zone type with gas heat and electric air conditioning.

2. The building is also served by a smaller, split system HVAC unit and a gas fired, heating only furnace.
3. Temperature control systems are local, stand alone, electric type thermostats.

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.

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

EXISTING SYSTEMS

1. The building is served by a Square D distribution panel, rated at 800 amperes, 480Y/277volts, 3 phase. This panel is fed from a 400 amp disconnect switch located at the Town Gym. The feeders from the Town Gym to the Town Hall are installed underground. The service equipment at the Town Gym consists of a 1200 amp main disconnect switch and distribution gear to the Town Gym, Town Hall and Arts Barn. The service equipment and distribution panels are in good condition. Also refer to the MEP Narrative of Existing Conditions at the Town Gymnasium.

2. Emergency Generator: The generator located adjacent to the Town Gym is a 350 KW Kohler with a 550 gallon diesel tank. The generator provides backup power to the Town Gym, Town Hall and Arts Barn.
3. Lighting consists of a variety of types of fixtures due to the different uses of the spaces such as the platform area, respective open space, pool room and café. There are some older fixtures with T12 fluorescent lamps.
4. Site lighting has fair coverage with building mounted fixtures and bollards.
5. Emergency lighting is handled by 2-head emergency lighting fixtures with integral battery packs.

6. The fire alarm system is a Firelite zoned system which does not appear to have been upgraded in 1994.

E. ***MEP SYSTEMS CONCLUSION***

In general, the MEP systems are in fair condition. The electric service to the building and main distribution panel are in good condition. As a minimum, it is recommended the light fixtures, switching and fire alarm system be scheduled for partial or complete replacement. The following capital needs survey form highlights the major systems in need of replacement and their respective capital costs to implement.

Town of Madison								
Capital Needs Survey Form								Total Floor Area (sf):
Arts Barn								12,240

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 - Electrical								
Site - Lighting								
Site - General								N/A
Division 15 -Plumbing								
Water Main								
Water Distribution System								No short term recommendations.
Plumbing Fixtures	3	3		2014	12,240	$4	$48,960	Partial renovations suggested
Water Heater	2	2		2014	12,240	$0.5	$6,120	
Division 15 - HVAC								
Renovate HVAC Systems	3	3		2014	12,240	$30	$367,200	
Temperature Control Systems - Upgrade	3	3		2014	12,240	$3	$36,720	
Division 16 - Electrical								
Electrical Service/Distribution Panels								No short term recommendations.
Lighting								
General upgrades	1	1		2014	12,240	$4	$48,960	
Lighting Controls	1	1		2014	12,240	$3	$36,720	Occupancy sensors, daylighting
Emergency Lighting								No short term recommendations.
Fire Alarm System	1	1		2014	12,240	$5	$61,200	
							$ 605,880	
							$ 50	per sf