

APPENDIX- MEPFP ASSESSMENT DEFINITIONS

Outlined below is a list of definitions for assessment categories identified in the Mechanical, Electrical, Plumbing and Fire Protection Assessment and how the recommendations are prioritized by Fitzemeyer & Tocci Associates, Inc.

Priority Condition

1. Code Compliance

The deficiency or condition represents a potential hazard to life or safety requiring immediate correction to bring into compliance with current codes and regulations. Examples include exposed wiring, missing alarm devices, missing safety devices or interlocks, water cross connections, and similar conditions that pose a potential hazard. This category typically does not include recent policy mandated changes or code compliance conditions related to construction materials or design standards that were compliant with codes and regulations at the time the building was constructed but have since been superseded or revised.

2. Functionality

The equipment or system is essential to the proper functioning of the building but is aged or in a state of disrepair to an extent that it does not function as designed or is inoperable. Also includes conditions if neglected in the short term will lead to damage to other building elements (such as leaks, condensation, mold, freezing, etc.). May also include design deficiencies that prevent the optimal performance or capacity of equipment or systems.

3. Integrity and Capacity

The equipment or system is essential to the proper functioning of the building but is aged or in a state of deferred maintenance such that failure is likely to occur within one or two years without frequent unscheduled maintenance, emergency calls, and repetitive repairs. The equipment may have degraded to a point such that its design capacity has been reduced. Examples include heat exchangers, burners, generators, etc. This category also includes equipment or systems that are at their limiting capacity and further short-term adaptation of the facility cannot be accommodated without an upgrade.

4. Policy Mandated Retrofit

The equipment or system was designed and constructed to standards that have been superseded by current codes, regulations and policies. Examples include seismic restraints, ADA accessibility, asbestos abatement, mandated energy efficiency, refrigerant replacement, egress requirements, sprinkler systems, and water use reduction. Also includes replacement of materials of construction that are currently not allowed by current codes or regulations.

5. Lifecycle Renewal

The equipment or system is approaching or has exceeded its intended service life. The equipment is nominally operational and may have the perceived benefit further useful life, but future necessary repairs, preventative maintenance, unscheduled service and emergency calls may present increased operational costs that are avoidable by replacement with new equipment or materials.

6. Lifecycle Efficiency

The equipment or system may or may not have aged beyond its intended service life, but the energy efficiency of the equipment or system presents ongoing operational costs that may be significantly reduced by replacement or alteration of the equipment. Examples may include the retrofit of air conditioning equipment, changing fuel sources, adding sustainable energy elements such as solar or geothermal, or energy efficient lighting. This would be typically recommended if there is an anticipated payback within a timeline suitable to the owner.

ENERGY SAVINGS PROGRAMS

Introduction

It is understood at the time of this study that the future of the Mitchell and Hillside schools is unknown and that recommendations should be limited to address maintenance that is critical to keep the facility running safely. Any energy conservation measures that might achieve payback within a five year period would fall into one of the two following categories.

Quick Fix and Low Cost: These projects require little or no systematic energy consumption tracking or educational focus.

Energy Awareness: These projects focus on communications and education to garner support from teachers, students, and staff members for voluntary conservation.

System balancing, as recommended in the mechanical report, will result in some energy savings and improve thermal comfort. Additionally energy conscience habits such as turning lights off when not needed, closing windows at the end of the day and keeping thermostats set low will result in savings without any additional cost. Additional recommendations can be found in the Department of Energy Operating and Maintenance Guide (http://www1.eere.energy.gov/buildings/energysmartschools/o-and-m_guide.html) which also provides educational information for teaching school children about energy cost and ways to save.

Programs Available From Your Local Utility (NSTAR)

NSTAR has money available to fund both building systems analysis and physical upgrades. It may be possible that NSTAR would also help with the cost of balancing the existing systems. Dore & Whittier is available to assist you with this incentive program prior to beginning an improvement project.

U.S. Green Building Council

The U.S. Green Building Council is a non-profit organization working to make green buildings available to everyone within a generation. The LEED for Existing Buildings rating system helps building owners and operators measure operations, improvements and maintenance on a consistent scale, with the goal of maximizing operational efficiency while minimizing environmental impacts. LEED for Existing Buildings addresses whole-building cleaning and maintenance issues (including chemical use), recycling programs, exterior maintenance programs, and systems upgrades. It can be applied both to existing buildings seeking LEED

certification for the first time and to projects previously certified under LEED for New Construction, Schools, or Core & Shell.

It is not practical to enroll in LEED for existing building at this time due to the uncertain future of the buildings however, the schools will find useful information and guidelines within the LEED manual that can greatly improve operations in the areas of indoor air quality, non-toxic cleaners and more frequent air filter replacements when applicable.

Renewable Energy Potential

No on-site renewable energy options are recommended within a 5 year payback. There is however, an opportunity for the school to specify that the power it receives from the utility company be from renewable sources with a Power Purchase Agreement (PPA). The NSTAR Green Program allows customers to specify that either 50% or 100% of their power comes from regional large scale wind farms in upstate New York and Maine. There is a cost premium to this option but it would also serve as a learning tool for students. This program is certified by Green-e Energy.

Operation and Maintenance Manual

Implementation and oversight of energy savings strategies by facilities staff is critical to achieving energy goals set forth by the school and Design team. Employees who occupy and maintain the school play a key part in seeing through a comprehensive energy savings plan. The *Guide to Operation and Maintaining Energy Smart Schools* published by the U.S. Department of Energy (http://www1.eere.energy.gov/buildings/energysmartschools/o-and-m_guide.html) offers many tips that can assist maintenance staff with intermediate to advanced knowledge of building systems in identifying and achieving energy savings.