



Facility Audit Report

New Hampshire Local Audit Exchange Program

Oyster River High School

Addendum No. 1

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Prepared for:

Oyster River Cooperative School District
55 Coe Drive
Durham, NH 03824-2023

Prepared by:

Acadia Engineers & Constructors
20 Madbury Road, Suite 3
Durham, NH 03824-2023



Purpose

This addendum has been prepared to clarify the findings associated with the issues presented in the Facility Audit Report for the Oyster River High School (ORHS) dated January 2012; and to present information discovered subsequent to the final report. Improving the performance of the ORHS facility through budgetary expenditures and programmatic changes requires an understanding of the relevant and significant issues.

The intent of a Facility Audit is to:

1. Evaluate facility use, systems, and the operation and control of systems;
2. Identify issues that reduce total facility performance;
3. Provide best-value energy efficiency measures; and,
4. Present any secondary observations.

Secondary observations are issues identified in the course of the facility survey that do not have a direct impact on energy consumption. Examples include indoor air quality and building code compliance.

Building Code Compliance

As a New Hampshire licensed Professional Engineering firm, AEC is obligated by NH State Law to provide a minimum Standard of Care to the owner and the general public. Therefore, any potential code infractions identified during the facility survey must be brought to the attention of the facility owner.

Several potential code compliance issues are presented in the report; the following clarifications are provided:

1. No egregious code compliance issues warranting an imminent life safety concern were identified in the ORHS.
2. Some of the noted code issues relate to current standards not in effect at the time of construction, however, they are recommended for a K-12 facility based on modern building standards and technologies. Examples include demand control ventilation and lighting system controls.
3. Many of the code compliance issues noted in the report are attributable to post-construction facilities management. For example, an above-ceiling lighting junction box was found to have no cover with wires hanging from the box. Presumably, this occurred during a maintenance / repair event after the 2003-2004 construction was completed.
4. Minor code issues are typically identified and corrected within the existing facilities operation and maintenance program. As example, a large threshold in the corridor is not secured and presents a tripping hazard that could impede emergency egress.

Construction Quality Management Organization

Construction Quality Management (CQM) for large commercial facilities is typically provided by a qualified independent Owner's Agent. Considering the magnitude of work associated with the ORHS 2004 construction project, a formal and substantial CQM program was warranted. The recommended CQM organization would have included: 1) a Senior Construction Quality Manager experienced with large K-12 facility construction; 2) a Field Engineer responsible for daily inspection and documentation; 3) an independent testing and inspection consulting firm (geotechnical, concrete, structural steel, roofing); and, 4) a Commissioning Agent. An adequately resourced CQM organization is expected to provide a minimum review and inspection of 80% of all building systems. The function of a Commissioning Agent is to verify the operation and ensure optimization of all HVAC equipment and the automated controls system.

Based on accounts by ORCSD personnel referred to in our January report; and upon our further investigation with the Town of Durham since the January report, the CQM organization for the 2003-2004 construction was limited to a single representative (Clerk-of-the-Works) working directly for the ORCSD. A Commissioning Agent was not employed for the project due to budget constraints.

Professional Responsibilities and Authority

The facility design completed by the Owner-commissioned Architectural-Engineering (A-E) firm is presumed to comply with minimum building code standards in effect at the time of design. The effective code adopted by the Town of Durham at the time of ORHS design was the 1990 BOCA National Building Code. The NH State Building Codes had not yet been adopted. To ensure that the ORHS design complied with effective code standards, the Town of Durham obtained an independent third-party code compliance review by the International Code Council (ICC).

Because local (Town) building authorities do not have adequate resources required to provide total inspection of large commercial facilities, they rely upon the Owner's CQM organization. Consistent with standard industry practice, the local building authority: 1) ensures that an Owner commissioned CQM program is in place; and, 2) completes review and inspection of approximately 10% of the facility systems.

The A-E firm is obligated by law to provide a minimum Standard of Care. The CQM organization and the General Contractor are obligated to substantially comply with the contract documents (plans and specifications) and building code standards. An occupancy permit issued by the local building authority does not relieve the A-E firm(s), the CQM organization, or the General Contractor of these requirements, nor does it constitute total compliance with applicable and relevant building codes and standards. Post-construction, the Owners facilities operations and maintenance organization is responsible for identifying issues and implementing corrective measures.

Facilities Operations and Maintenance

Three (3) significant technical findings were identified in the Facility Audit Report: 1) design issues; 2) construction issues; and 3) and facilities operation and maintenance (FOM) issues. The lack of a preventative maintenance program and deferred maintenance increases costs and reduces occupant comfort.

An adequate FOM program would have identified and corrected many of the apparent issues presented in the report. Improving the efficiency and effectiveness of the current FOM program provides the greatest opportunity for reductions in energy consumption and operating costs for the ORHS.

Summary

Based upon the building evaluation and a review of available information, the following notable items are evident:

1. The level of workmanship and internal quality control provided by the General Contractor was below industry standards.
2. The CQM organization for the ORHS 2003-2004 construction did not have adequate resources.
3. The level of inspections provided by the Town of Durham building authority was consistent with industry standards. This included assistance from the Town of Durham Fire Prevention and State inspectors from the NH Electrical Board, the NH Plumbing Board, the NH Elevator Division, and the NH Boiler Division.
4. The implementation of an adequate facilities operations and maintenance program will: 1) correct minor issues associated with design and/or construction; 2) reduce energy consumption; 3) reduce equipment repair costs; 4) improve building performance; and, 5) significantly reduce current FOM costs.