



Gould Academy Energy Conservation

Challenge

CVAL Innovations was engaged by Gould Academy to evaluate and develop cost-effective energy conservation recommendations for eleven of Gould Academy's buildings located at 39 Church St, Bethel, ME 04217. The facility covers 456 acres and serves as a college preparatory school with classroom-laboratory buildings, dormitories, dining hall, health center, residential buildings, field house and athletic fields. Due to the need to be sustainable and save energy and resources, Gould Academy wanted to conduct detailed engineering assessment to identify opportunities for reducing their energy costs.

Solutions

Energy auditors from CVAL Innovations conducted site assessments of eleven (11) buildings at Gould Academy. The purpose was to conduct an ASHRAE1 Level II Audit of the facility, to review equipment operations and provide recommendations to reduce energy consumption. CVAL conducted the detailed energy assessment of facility and has identified opportunities to reduce energy use by 58% vs baseline design. Some of the recommendations detailed below.

LED Lighting Retrofits

Gould Academy has already realized much of the energy savings potential from LED lighting having converted more than 80% of its lights to LED. CVAL conducted a detailed lighting assessment and implemented energy conservation measures in dining hall & conference center that reduced lighting energy use by 77%.

Heating System Upgrade

The current system is in poor condition and has numerous problems. There are several leaks in the steam piping that have been identified. CVAL have identified 3 options to upgrade the heating system. Option A is fixing the current system, Option B is converting the steam system to hot water, and Option C is VRF.

Roof Insulation

CVAL Auditors found little or no attic insulation on most of the buildings at Gould Academy. It was observed that having R19 insulation reduced the energy consumption by 33% on VRF and 42% for current heating system. The team recommends 3 inches of closed cell insulation to meet the savings objective.

Building Details

- **Location:** Bethel, Maine
- **Building Type:** Boarding School
- **Building Height:** Multi-facility
- **Year Built:** 1939
- **Building Area:** 203,045 sq ft
- **Energy Assessment:** August 2018
- **Investment:** \$462K
- **Operational Savings, \$/yr:** \$62K
- **Simple Payback, years:** 7.45