Providence Central High School Renovation, RI

Providence Central High School is a large urban campus which is comprised of three buildings. The main building, which serves as home for academic programs was built in the 1920's. The Hanley building, which houses the career/technical programs was built in the 1950's and is the vocational compliment to Central High School. The third building, functions as the Central High School cafeteria and gym. This campus serves a population of 1,600 students.

Project Summary

High Performance Building Envelope Features
- High Performance Glazing

Efficient Mechanical Equipment and Systems
- Variable flow hot water pumping system
- Optimized chiller plant
- Demand ventilation in cafeteria and gym with CO2 sensors
- Occupancy based HVAC controls for classrooms

High Performance Lighting Systems and Controls
- Recessed indirect lighting fixtures
- Reduced Lighting Power Densities
- Daylight harvesting controls

Technical Assistance
- Full life cycle cost analysis for all measures including utilization of DOE2 simulation for energy saving measures and integrated engineering principals

Savings Summary

The need – A state of the art school building utilizing high performance design principles

The solution – An integrated approach utilizing computer modeling through the Comprehensive Design Approach Program

Design Assistance from National Grid - $14,000
Anticipated National Grid CDA Incentive - $157,000

| Estimated Annual Electric Energy Savings | 470,318 kWh |
| Estimated Annual Gas Savings For All Measures | 2677 terms |
| Predicted Avoided Annual Energy Cost | $36,214 |
| CO₂ Lifetime Reduction | 5,232 tons |
| Payback after Incentive | 1.0 years |

These efficiency services and materials are paid for by the customers of Rhode Island’s Electric Utilities.