



Commissioning Case Study

Sachem High School East

Farmingville, NY

Background

LIPA's Commercial Construction Program provided \$130,000 in incentives and energy modeling under the Whole Building Approach guidelines for the construction of the new Sachem High School East campus. Shortly after the opening of the facility, the district was experiencing higher than estimated energy costs.

With the assistance from LIPA, a pre-qualified commissioning agent was assigned to review the energy bills and evaluate the facility to determine the cause for the higher than expected billing. LIPA funded \$21,500 for these services and assigned Horizon Engineering Associates, LLP (HEA), to the task.

Description

A plan was developed to evaluate the energy model and compare the assumptions of operating and equipment schedules to the actual operating conditions of the installed equipment in the building. Billing information through LIPA was analyzed and evaluated against the assumed energy consumption predicted by the model. The results showed Sachem High School East consumed approximately three times more energy than estimated by the energy model. Additionally, a sample performance verification of select equipment was conducted for comparison to the assumptions identified in the energy model.

Solution

A final report with recommendations were presented to the building owner to significantly reorganize the Building Management System (BMS) and occupancy schedules and to place specific lighting groups on timers or sensors. Some of the major items that contributed to the high energy consumption of the school included:

- HVAC unit operating schedules exceeded the time frames allotted.
- Over-illumination of corridor spaces.
- 22 AHU's were accounted for in the model – 37 AHU's were installed.
- 66 exhaust fans were not accounted for in the energy model.

A sample of the results of the evaluation concluded:

- 2,418 kWh could be saved in hallway lighting every two weeks with the use of timers or sensors.
- 2,600 to 3,700 kWh could be saved per day in making programming changes in the BMS schedules for the AHU's and exhaust fans.
- 1,611 kWh could be saved every two weeks in areas such as the wrestling room and gymnasiums through the reorganization of the BMS.

As a result of the identified issues, a potential \$200,000 in annual energy savings would be accomplished if all recommendations were implemented.



Commissioning Provider:
Horizon Engineering Associates, LLP
Customer Name:
Sachem High School East
Location: Farmingville, NY
Building Size: 600,900 sf
Commissioning Fee: \$21,500
LIPA Cx Funding: \$21,500
Annual Savings: \$200,000