



## **Delivering High Performance Schools in Tough Economic Times**

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During last year's New Jersey School Boards Association (NJSBA) Workshop, many school administrators and board members told us that school improvements are not feasible in today's economic environment. A typical conversation on the exhibition floor sounded like this: "School improvements; not even worth talking about. My capital funds are tapped. My taxpayers won't support a bond referendum in this economic climate. And we have little school funding support from the School Development Authority."

### **The Benefits of High Performance Schools**

Improving student learning and creating schools with high academic standards are of vital interest to educators and administrators in New Jersey. There are several factors that affect how students learn, including the facilities. According to the U.S. Environmental Protection Agency (EPA), High Performance Schools – well-designed physical facilities, including the school buildings and grounds - "can improve the learning environment while saving energy, resources, and money."

High performance designs that incorporate proper lighting (including daylighting), air temperature, humidity and noise levels have been shown to enhance student learning. One recent study of school districts in California, Washington, and Colorado indicates a strong correlation between increased day lighting and improved student performance. In the California district, for example, students in classrooms with the most day lighting progressed 20% faster on math tests and 26% faster on reading tests in one year than those in classrooms with the least amount of daylight.

According to the EPA, a High Performance School is:

1. **A healthy and productive place for students to learn and teachers to work**

Students and teachers enjoy large amounts of natural daylight, good acoustics, superior indoor air quality (IAQ), and the safety and security of automated building systems.

2. **Cost effective and easy to operate and maintain**

High performance schools employ cost-effective design characteristics such as energy analysis tools that optimize energy performance, a life cycle cost approach that reduces the total cost of ownership, and a commissioning process that ensures operations follow the design's intent. These practices reduce utilities and maintenance costs.

3. **Integrate several systems for sustainable operations**

These structures combine energy conservation and renewable energy strategies with highly efficient mechanical and lighting systems, environmentally responsive site planning, environmentally preferable materials and products, and water-efficient design.

## **Reducing Energy Use Contributes to High Performance**

The pressure to cut operational costs yet maintain high performance school buildings has forced New Jersey school districts to more closely scrutinize services and expenditures. Energy is one area that is getting – and deserves – increased attention.

According to the U.S. Department of Energy, in most U.S. school districts, utilities are the second largest budget item after personnel related items, with more than \$6 billion spent on energy by schools nationwide. Unfortunately, about 25 percent of the energy used in a typical school is wasted due to inefficient building systems and operations.

Uncertainty about financial conditions may cause some schools to forego capital improvement projects such as installing new systems, routine maintenance, and annual audits. However, districts can now leverage efficient energy operations and building management to fund building improvements through two programs through New Jersey's Clean Energy initiative.

These programs offer school districts the ability to get energy-related school improvement work done without the need to dip into capital reserves, go through the bond referendum process, or increase the operations budget.

### **Pay for Performance (P4P) Program**

All public schools in New Jersey qualify for the Pay for Performance or P4P program. Private schools that have an annual peak demand greater than 200 kW also qualify for the program. P4P provides incentives that help reduce the costs of infrastructure improvements relative to energy saving school improvements. The scope of improvements includes:

- School envelope improvements: new roofs, windows, and doors
- Boiler and HVAC systems replacement
- Installation of digital control systems

- Lighting improvements
- Other conservation measures that reduce energy consumption.

Schools work with an approved Pay for Performance partner to develop an Energy Reduction Plan (ERP). Only districts that can demonstrate an annual energy savings greater than 15% qualify for the incentives that are paid by the New Jersey Board of Public Utilities (BPU). These incentives can defray the cost of the improvements.

The more energy efficiency that is available to a school district, the higher the potential P4P incentive. In addition to reducing the overall cost associated with the project, this program also has a component that ensures long-term operational costs savings by providing sustainable energy savings. Sixty percent of the incentive is paid at the time of installation and 40 percent of the incentive is paid one year after installation, pending the school district's energy performance over the course of that year. If the school district has exceeded the savings expectations, it will receive the full amount of the balance of the incentive and perhaps more. If the school district's energy savings have not met expectations, they will not receive the full amount of the balance of the incentive.

The reaction, for many, is: "Great program. Defraying the cost of the project is nice. Providing year-over-year energy savings to reduce my operations budget is even better. But my school district still doesn't have the funds to support the balance of the project."

The good news is there is help available in the form of the **Energy Savings Improvement Program (ESIP)**.

### **Energy Savings Improvement Program (ESIP)**

The ESIP was implemented in New Jersey in January 2009. It allows school districts to fund the energy related capital improvements that your schools need *today* with expected annual energy savings that will be realized *tomorrow*.

According to NJSBA, in 2010, school bond referendums saw a 50% success rate, which is the lowest on record since 1998, when NJSBA began tracking school-construction proposals. School districts that have had a recently failed bond referendum may be excellent candidates to explore ESIP as a means to fund energy-related school improvements.

With ESIP, the capital improvements are financed through expected annual energy savings from the efficiencies gained through smarter system design with upgraded infrastructure. The goal in an ESIP project is to develop a budget neutral or better scenario for the school district. ESIP projects can be financed up to 15 years. In cases where renewable energy alternatives are included in the project scope, the projects can be financed up to 20 years.

ESIP projects allow school districts to combine the normally fragmented elements of design, finance, installation, commissioning, service, and maintenance into one comprehensive agreement with an Energy Services Company (ESCO) which is responsible for financial and operational outcomes. The ESCO provides a “performance guarantee.”

In an ESIP project, the liability of any shortfall in savings expectation is assumed by the ESCO. If the expected energy savings in a given year was \$100,000 and only \$75,000 was delivered, under the performance guarantee the ESCO is obligated to assume the liability for the \$25,000 shortfall and write a check to the school district for the equivalent amount. Conversely, should the savings exceed the expected amount, the school district keeps the overage.

In New Jersey, school districts can make much needed improvements in the near term. Utilizing the P4P program to defray improvement project costs and following up with the ESIP program to finance the balance of the cost of the project is a viable solution for

school districts looking to upgrade their infrastructure without going to a bond referendum.

With these programs, students get an enhanced environment in which to learn. School administrators have the means to deliver the learning environment their teachers and students warrant. Taxpayers are not asked to incur higher taxes to support a school improvement initiative and we all help preserve resources and the environment through more efficient use of energy. Everyone wins!

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