

Exterior of the Rosa Parks School in Portland, Ore. The school was honored for its green efforts as a K-12 Winner in Learning by Design.



Controlling energy costs—a school district's second largest expense after personnel—is critical for districts that are constantly searching for more funds. One way to do that is to build energy-efficient, high-performance schools that combine good lighting, comfort, acoustics, and air quality.

The U.S. Department of Energy's EnergySmart Schools program provides information for districts that want to build these high-performance schools. While obtaining financing is a hurdle for any school construction project, taking this approach to design and construction can give your school district more financing choices.

In the past, the initial cost for such schools could be significantly higher than for their traditional counterparts. Now, thanks to technology advances and integrated design practices, the premium for a well-planned project is far lower—or even nonexistent. Today, school districts enjoy fast paybacks—usually five to eight years—as well as ongoing returns on their energy efficiency investments.

In short, the business case for an EnergySmart approach has become stronger than ever.

Making the right moves

For any project, it is important to consider the balance between up-front costs, which simply measure initial price, and life cycle costs. To determine whether a specific project—be it a new boiler or new building—is worth the initial investment, many schools do a life cycle cost analysis.

This accounting method determines the total costs associated with an upgrade over its lifetime, considering such factors as:

- Purchase or construction costs
- Fuel costs
- Operation, maintenance and repair costs
- Replacement costs
- Resale or disposal costs
- Loan interest payments

■ Non-monetary benefits

A number of software programs can calculate life cycle costs, including free Building Life-Cycle Cost programs from the Federal Energy Management Program (www1.eere.energy.gov/femp/information/download_blcc.html).

Documenting the savings that will be realized in an energy-saving project can help your district bolster its case to taxpayers, state officials, and financial institutions as you pursue funding. This bottom-line benefit, however, is just part of the story. In some areas, additional benefits associated with EnergySmart construction can translate to financing opportunities for school districts. Some states, for instance, provide financial incentives for energy efficiency because it helps them meet environmental and business development goals.

Financing options

In most cases, a district uses its own operating or capital funds to finance smaller, short-term projects with short payback periods. The district can retain all of the energy cost savings, and the project can be implemented quickly by avoiding complex contract negotiations. Many districts, however, do not have enough funds available for energy-efficient improvements.

Some different types of financing options to consider include:

Revolving investment funds: A district creates a revolving investment fund when it uses its own money for energy-efficient projects. Savings that accrue from avoided energy costs are put into the revolving fund. As the energy savings compound, so do the returns to the fund. Profits can be reinvested in other energy-saving projects. This approach is limited to districts that have taxing authority and are authorized by state statutes.

Debt financing: Bank loans generally finance small, short-term energy efficiency improvements. For bigger projects, many districts with bonding authority turn to the municipal bond market by issuing a general obligation bond. These bonds

A project of Dull Olson Weekes Architects, the school is a LED Gold-certified school. Green features include photovoltaic cells that provide real-time readings of energy consumption, a stormwater retention and discharge system, and a recycling center for community use.

Margo Appel

The Smart Approach

Building energy-efficient, high-performance schools is an investment that pays you back

are often tax-exempt, which lowers their cost, but they also require voter approval and incur a debt that is reflected on the school's balance sheet.

Lease or lease-purchase agreements: Under these agreements, a school secures equipment or energy efficiency improvements from a private vendor, who gets repaid over the term of the lease through cost savings from the project. There are no up-front costs for the school, and the equipment can be bought at the end of the lease for a pre-negotiated price. These agreements can require complex administration as well as financial expertise.

Energy-saving performance contracts: These contracts, known as ESPCs, can be used to upgrade equipment and to improve the energy performance of existing facilities. An energy services company and the school district contractually agree to a set payback period and annual savings. Additional energy savings above the agreed-to figure go to the district. Most contracts result in a positive cash flow for the district annually, allowing you to shorten payback periods on energy-saving measures or shorten the contract period.

State programs: State grants and low-interest loans are available for schools wanting to do energy efficiency upgrades. The Database of State Incentives for Renewables & Efficiency (www.dsireusa.org) provides information about these initiatives on a state-by-state basis.

Utilities: Local utilities may offer reduced-interest loans or rebates for energy-efficient projects or features. Utilities may also offer technical assistance to help schools identify and evaluate potential projects. National Grid, a utility in the Northeast, offers financial incentives to schools for energy efficiency through its small-business program (www.nationalgridus.com/masselectric/business/energyeff/3_small.asp).

Supplemental environmental projects: These energy-efficient projects, known as SEPs, are funded by companies that are not in compliance with federal environmental regulations. Designed by the U.S. Environmental Protection Agency,

the SEP program allows the companies to fund these projects in lieu of fines.

Public benefit funds: In some states, legislation requires electric utilities to add a fee to their monthly bill for what is called a public benefit fund, or PBF. Utilities or state-administered programs then use the funds for a variety of energy-efficient projects. Links to specific PBFs can be found on the EnergySmart Schools website (www.energysmartschools.gov).

Foundations: A number of foundations provide grants to support energy improvements in schools. The Kresge Foundation's Green Building Initiative, for example, awards planning grants to elementary and secondary schools that predominantly serve individuals with physical and developmental disabilities.

For more information about energy-efficient financing and other topics, go to the "Financing" section of www.energysmartschools.gov. The new *ASHRAE Advanced Energy Design Guide for K-12 School Buildings* gives you concrete guidelines to help your school district save 30 percent or more on energy costs.

The guide features easy-to-follow recommendations for various climate zones, and how-to tips using real-life construction case studies of schools around the country that have achieved or exceeded the 30 percent target. Written with support by the U.S. Department of Energy, it can be downloaded for free at www.ashrae.org/freeaedg. Or look for your hard copy—16,000 copies have been mailed to every school district in the United States. ■

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