

Green Schools Don't Make the Grade

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by Todd Myers

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Congress is considering funding a range of projects designed to reduce carbon emissions, including the 21st Century Green High-Performing Public School Facilities Act, which would provide \$20 billion to build public schools that meet “green” environmental standards. House Education and Labor Committee Chairman George Miller (D-Calif.) says the legislation will not only save

proving student health. Advocates also claimed that the natural lighting and other features of the schools would increase student test scores.

At the discretion of local school boards, some school building projects approved prior to the mandate were also built to LEED standards. The state provided funds to assist districts with some of the additional costs of implementation. Several pilot schools in the Olympia, Northshore and Spokane school districts were created to test the effectiveness of the strategies. By the summer of 2007, all but one of these schools had been open for at least one year and data were available to compare their performance with conventional schools recently built in the same districts. The results are clear. Figure I shows:

- In no case was the green school the most energy-efficient in the district.
- In some cases the green schools were more efficient than the most recently built nongreen school, but the difference between them was often very small.
- In no case were the energy costs for a green school 30 percent less than at comparable schools as supporters had projected.

Outside the pilot districts [see Figure II], energy costs at three green schools were at least 25 percent higher than the most-efficient nongreen school in the same district.

Failing to Reduce Absenteeism.

Green schools were expected to reduce absenteeism, but the numbers reflect a different result. Many districts do not track absences for more than one year, and data were only available for three districts with green schools. In

energy, but also make the facilities safer and cleaner and dramatically reduce costs. Advocates claim that such schools will use 35 percent less energy.

Because the push for green schools is new, nationwide data is lacking. However, in Washington state — the national leader in embracing the green school movement — schools built to comply with green standards have consistently failed to meet the energy saving targets claimed by supporters, and have not shown improvements in student health or other metrics.

Failing to Reduce Energy Costs.

In 2005, Washington passed legislation mandating that new public schools meet standards based on the Leadership in Energy and Environmental Design (LEED) criteria developed by the U.S. Green Building Council. LEED rates building designs in terms of site sustainability, water and energy efficiency (including reduced carbon emissions), the use of green or recycled materials, appliances and fixtures, and indoor air quality.

At the time the legislation was passed, supporters cited studies indicating the schools would save 30 percent to 50 percent a year in energy costs and would reduce absenteeism 10 percent by im-



Dallas Headquarters:
12770 Coit Rd., Suite 200,
Dallas, TX 75251
972-386-6272
Fax: 972-386-0924
Web site: <http://www.ncpa.org>

Washington Office:
601 Pennsylvania Ave., N.W.
Suite 900, South Building
Washington, D.C. 20004
202-220-3082
Fax: 202-220-3096



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Spokane, where there are three new green schools, the average absence rate per student is slightly higher than the rate for the district as a whole. In both the Northshore and Lake Washington school districts attendance rates are very similar. In all cases, however, there are wide variations among schools, indicating that other factors had a more significant impact than the design of the school building.

Failing to Reduce Economic Costs.

Not only have the energy savings and educational effects proved disappointing, green schools have cost more than projected. Estimating the cost of green elements is very difficult and no district asked was able to completely disaggregate the costs of the additional elements required to meet the new standards. Officials within several districts, however, agreed the best estimate was that green buildings cost about 6 percent more than nongreen buildings. The most common nationwide estimate for the additional, up-front cost of green schools cited by LEED advocates is about 2 percent. Worse, Washington's legislature promised additional funding to help pay these expenses, but cut those funds in the next

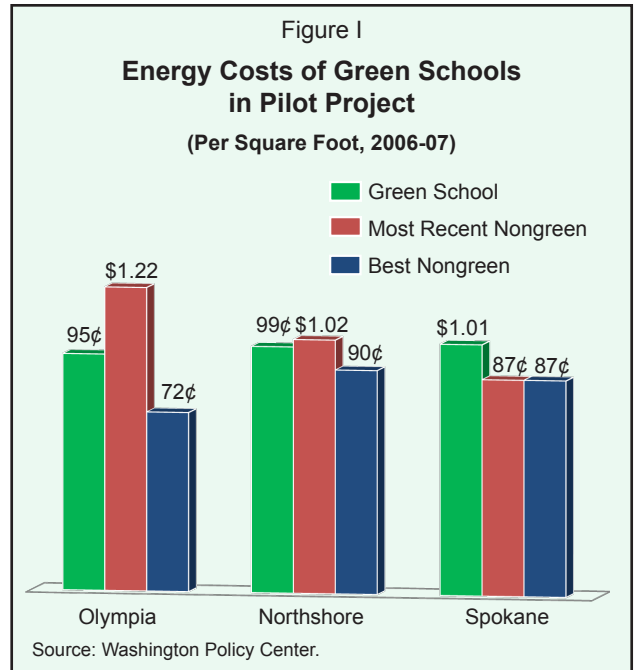
fiscal year due to budget pressures. They did, however, leave the mandate.

Reasons Why Goals Were Not Met.

There are a number of reasons why the green standards have not lived up to promises made when the legislation was passed. First, the initial projections were extremely rosy. It is likely that supporters chose the most optimistic estimates to help pass the legislation. They over-promised and it is not surprising that districts are now under-delivering. The energy savings claims of Congress are likely to be equally unrealistic.

Second, the standards rely on a cookie-cutter approach, requiring expenditures that sometimes do little to achieve energy savings or other goals but must be met to receive the required certification points. In Spokane, for instance, additional bike racks were installed to meet a requirement aimed at reducing the number of kids driven to school, but those racks now sit largely unfilled.

Third, the standards often try to achieve contradictory goals. The rules call for increasing the amount of natural light in the belief that more daylight increases test scores. However, larger windows also increase energy costs by letting in the cold in winter and heat in the summer. Similarly, the schools recirculate air more frequently to improve the "health" of the buildings. That also means running heating and air conditioning systems more frequently, increasing energy use.



Given these contradictory goals, it is not surprising that buildings don't meet the high standards set for each of these areas. Achieving these goals may be desirable, but expecting that all can be met without tradeoffs is folly.

Conclusion.

Before Congress puts its final stamp on a plan to spend billions to meet these new standards, it should be skeptical of projected energy savings and reductions in student absenteeism. Washington's experience with green building standards demonstrates that these buildings have higher than expected costs, and the energy savings and other projected benefits are either small or nonexistent.

Would an additional \$20 billion from Washington, D.C., actually improve student performance, reduce school operating costs, or reduce emissions? Based on the available evidence, it appears highly doubtful that federal funds being spent to construct green schools will meet any of these goals.

Todd Myers is director of the Center for the Environment at the Washington Policy Center and an NCPA E-Team adjunct scholar.

