‘Green’ Schools Fail to Make the Grade
State building rules do not raise student test scores

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Six years ago, the Washington state legislature passed legislation requiring that all new schools in the state meet “green” buildings standards, known as the Washington State Sustainable Schools Protocol. The law's backers promised a range of benefits, including significant energy savings and healthier buildings.

During the past six years, research has consistently shown these schools do not meet the energy efficiency targets promised by “green” building advocates. Data from the schools show that most “green” schools are less efficient than comparable new schools in those same districts — in some cases actually using 30 percent more energy per square foot despite costing more to build.

Proponents also claimed the new “green” schools would improve student test scores by creating a better learning environment. The larger windows and increased sunlight required in the “green” schools were supposed to improve student test scores by over 20 percent.

These claims were based on a limited number of studies, and since only a handful of schools in Washington had adopted the guidelines in 2005, there was little real-world data available to confirm or deny the claims. Faced with studies forecasting energy savings, healthy buildings and higher test scores, legislators were reluctant to vote “No” and reject a law that appeared to be good for children and good for the environment.

Today there are more than 40 “green” schools operating in Washington state. We can compare the actual results with the lofty promises made in the lobbying efforts to pass the bill. Given the failure of these schools to meet expectations, the results should not be surprising.

The data show that students at Washington's “green” schools have a lower average education achievement ranking than traditionally built schools, according to data from the State Board of Education's 2010 Public School Achievement Index.

With increasingly tight budgets, the state’s school districts should not be required to waste precious dollars on building standards that do not help meet the basic goal of education: helping children learn. Now that the results are in, the legislature should repeal these failed costly and ineffective “green” building mandates.

1 See for instance Todd Myers, “Five Years of Environmental Policy: Are We Making a Difference?” April 2010, http://www.washingtonpolicy.org/publications/brief/five-years-environmental-policy-are-we-making-difference
The Big Promises of Green Schools Advocates

In 2005, environmental activists, professional architects and the Superintendent of Public Instruction all promised significant improvements in student test scores as part of their lobbying effort to pass the new “green” school regulations. To justify the additional two percent to six percent cost of “green” schools, they said test scores would increase by up to 26 percent.

In its briefing on “High Performance Green Buildings,” the Washington Environmental Council claimed the new schools would “Increase student test scores by 20 percent.”

To back up those claims, the Office of Superintendent of Public Instruction (OSPI) and the State Board of Education hired green building architect Paladino and Company to study the impact of these schools. The study noted “Improvements of over 20 percent on standardized tests have been substantiated with approaches like incorporating good daylighting in classrooms.” Other design elements, including increased air circulation and improved acoustics also contribute to these learning benefits, says the report.

The result of these regulations, Paladino architects claimed, is “that sustainable school design is associated with better student and teacher performance, showing higher standardized test scores of up to 26 percent.” The OSPI report did note that some studies indicate learning increases of only five percent, but the text of the report downplays those lower projections. Overall, the report says its estimates are “conservative expectations from the cited research.”

Two things are worth noting about the OSPI’s claims.

First, not all of the research used relates to “green” schools. The OSPI report notes that some of the benefits relate only to “schools with better buildings.” In other words, the research examined new schools, whether designed as “green” or not. This research may support spending money to upgrade old schools, but it does not justify requiring schools to meet the additional “green” standards.

Second, the state has actually moved away from the increased sunlight regulation required by the 2005 legislation. The 2010 version of the Washington State Sustainable Schools Protocol notes, “Daylighting in schools is a complex and evolving issue.” State officials have cancelled the requirement for daylighting, replacing it with a point system that rewards daylighting without requiring it. There are a number of reasons for this change, including concerns that large windows make school buildings less energy efficient.

Legislators promised the public significant improvements in student test scores, with improvements of 20 percent being the most frequently mentioned figure. Since this number was considered “conservative,” it provides a good baseline against which to compare the actual performance of real-world “green” schools.

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4 Ibid., p. 17
5 Ibid., p. 44
6 Ibid., p. 44
Education Data Shows Green Schools Fall Short

In early 2010, the Washington State Board of Education released the “Achievement Index,” rating every school in the state on a scale of 1 to 7. The Board said, “The Achievement Index was developed by the Washington State Board of Education and offers individual school data from 2007-2010,” and is “is designed to provide users with a comprehensive and clear analysis of school performance.” The index rates more than just test scores, combining the Measurement of Student Progress, High School Proficiency Exams and graduation rates to assess each public school.

The data from the Accountability Index provides a useful, objective metric to compare the overall performance of “green” schools. The ratings also provide an independent and agreed-upon data set that avoids concerns about “cherry picking,” that is, including only the data which lean one way or the other. While some district officials will quibble about the ratings at individual schools, the relative ratings across all schools are unlikely to change much, offering a sound comparison between traditionally built schools and those build under the state’s “green” building rules.

To determine whether “green” schools are improving test scores as promised, we compared the average Index rating for 42 green schools in eleven school districts to the 403 traditionally built schools in those same districts. We also compared school performance district by district. This prevents one outlying district skewing the overall results either positively or negatively.

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<th>Districts Where Traditionally Built Schools Perform Better</th>
<th>Districts Where “Green” Schools Perform Better</th>
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9 For purposes of comparison, we removed schools that were either non-traditional or did not have buildings. For instance, we removed the Hutch School in Seattle, which provides services to children while being treated at the Fred Hutchison Cancer Research Center. We also removed the Internet Academy in the Federal Way School District since it does not have a building.
The 42 schools included in this study were provided by the school districts we contacted. Unfortunately, there is no comprehensive list of “green” schools in Washington state. The OSPI only tracks those schools that received support from the state, leaving many “green” schools off their list. As a result, the only way to compile a comprehensive list is to call districts with “green” schools and ask them which of their buildings meet the standards. This study covers districts representing one-fifth of the total school buildings in the state, a significant sample size.

The results show that “green” schools are performing below expectations and, on average, are actually performing worse than the traditionally built schools in those districts. The average rating for the 42 green schools was 3.71. Traditionally built schools in those same districts scored about two percent better, receiving an average rating of 3.79. This difference, however, is well within one standard deviation, indicating that the difference is probably not related to differences in school buildings. The data demonstrate that the difference between green schools and traditionally built schools is negligible – green schools show no meaningful improvement in student learning.

This finding is supported by the district by district data. Of the eleven school districts studied, traditionally built schools perform better in six of them. “Green” schools perform better in five districts. This distribution shows that the average performance is representative and is not distorted by a district where “green” schools perform extremely well or extremely poorly.

With the recent release of the study by the Joint Legislative Audit & Review Committee (JLARC) of “green” schools, we also analyzed the schools included in that report, comparing them to schools in that same district. The results are very similar to the larger group of schools studied above.

The 12 “green” schools in the JLARC study receive an average rating of 4.01 on the Accountability Index. The 109 traditionally built schools in those same districts receive an average score of 4.02. Again, the numbers are close, but the “green” schools actually perform worse than the schools built without the “green” elements.

One reason the difference between the “green” schools and those built without the mandates is small, is districts were already voluntarily including building design elements that improved the learning environment, long before legislators in Olympia made these elements mandatory. This argues for allowing

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school officials to have more flexibility, since they know what works best for students in their district, and can avoid the cost of design elements that do not help students.

These results demonstrate that “green” school requirements are not living up to their promise, falling well short of even the “conservative” improvements promised by green building advocates. Ratings at the “green” schools would need to improve by 26 percent to meet those “conservative” promises.

The Cost of Failing to Make the Grade

The failure of schools built to the Washington State Sustainable Schools Protocol has a cost. Supporters of the standards admit that meeting the regulations adds at least two percent to the initial construction cost. Facilities directors at the school districts report higher initial costs, estimating an average additional cost of about six percent. While environmental activists claim these costs will be recovered some day through energy savings, the data have demonstrated repeatedly this is not the case.

Wasting any taxpayer dollars means less funding is available for other uses and the increased cost for the state and school districts is significant. For 2011, the state will provide $264,627,874 for new school construction to districts across the state. An additional two percent amounts to $5.3 million. The local school districts will provide an additional $338,591,583 for those schools. Two percent would amount to an additional $6.77 million. For 2011 alone, then, the green schools standards will cost an estimated $12 million in education construction funding. If the six percent estimate offered by facilities directors is used, the amount wasted jumps up to $36 million to meet the required standards.

There is disagreement about whether Washington’s schools are adequately funded and the impact additional funding would provide. There is no doubt, however, that spending tens of millions of dollars each year on efforts that yield no improvement in student learning, or for the environment, is a senseless waste of public resources.

Legislators have pledged to take a close look at state expenditures, judging the effectiveness of programs and their priority. Given the failure of “green” schools to improve education, legislators should repeal the costly and ineffective Washington State Sustainable Schools Protocol and put the power back in the hands of the local district leaders, allowing them to spend taxpayer money where it will make a real difference for the environment and for children.

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