

**High Performance  
Public Buildings:  
Impact on Energy  
Use is Mixed  
Report 11-7**

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STATE OF WASHINGTON  
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## REPORT SUMMARY

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### **In 2005, the Legislature Established High Performance Public Building Requirements**

The 2005 Legislature passed ESSB 5509, which established high performance building requirements for public buildings. High performance buildings, also known as “green buildings,” must be designed and constructed to standards intended to promote environmental conservation. The bill required that state agencies, higher education institutions, school districts receiving state funding for new construction or major renovations, and certain recipients of capital funds through the Department of Commerce follow high performance building standards. The bill also required state entities and school districts to document and report the added costs and operational savings of their projects.

### **Agencies and School Districts Report That High Performance Building Requirements Have Increased Public Building Costs by 1 to 3 Percent**

Construction and renovation costs have increased for most building projects completed under the requirements of the 2005 legislation. JLARC estimates that incorporating high performance features added \$2.5 million, or about 1 percent, to the costs of 17 projects completed by state agencies and higher education institutions. JLARC estimates that the new requirements added \$9.5 million, or about 3 percent, to the cost of 14 new schools completed under the program. However, the University of Washington reported that following high performance requirements reduced construction costs for two projects.

### **Four Metrics Show That High Performance Buildings Have Mixed Results in Reducing Energy Use**

JLARC measured energy performance in four ways. Because energy data was not available for all buildings using any single measurement approach, the four approaches provide the Legislature with the most possible information, given data limitations.

As shown on the following table, three of the four metrics show that while some high performance buildings meet expectations for energy efficiency and savings, others do not. The final metric shows that performance improves over time. These results are based on limited experience and suggest that a definitive conclusion about the benefits of Washington’s high performance building program may be premature at this time.

Actual Energy Use Compared With:	Results for High Performance Buildings Reviewed:
Estimated energy use	Energy use exceeded design estimates in five of six K-12 projects. Energy use met design estimates for the one state agency/higher education project for which data was available.
Similar buildings owned by organization	Actual energy use in five of nine K-12 high performance school buildings is lower than the average energy use among comparable buildings within their respective districts. Actual energy use at a high performance correctional facility is between 24 and 29 percent less than comparable facility.
National benchmark	Five of 13 K-12 school buildings qualify for an Energy Star designation.
Change over time	Actual energy use declined in eight of nine K-12 school buildings reporting more than 22 months of operations data.

In addition, school districts implementing resource conservation management programs have reported significant reductions in utility use and cost in old as well as new buildings

### **JLARC’s Ability to Assess Performance of All High Performance Public Buildings Is Limited Because State Agencies Are Not Reporting Information as Required by Law**

The reporting system envisioned by the 2005 legislation is incomplete. The Department of General Administration (GA) and the Office of Superintendent of Public Instruction (OSPI) established procedures and formats for state entities and school districts to submit required data. However, state agencies and institutions have not submitted reports on a timely basis. Both GA and OSPI report that the staff available for monitoring high performance public buildings and analyzing data has been reduced in recent years due to budget reductions. The Department of Commerce has not yet reported on affordable housing projects and does not believe reports are required for community development projects.

In addition, JLARC was unable to assess other anticipated benefits of high performance buildings, such as recycling and use of regional materials because of limited data. Lack of clear linkage between building design and building occupant performance prevented JLARC from measuring the impact of high performance buildings on worker productivity and student performance.

### **Conclusion**

Washington’s high performance public building program has been in existence for five years. Only a relatively few buildings have been completed and in operation for more than one year. Because of this, JLARC concludes it is too early to make any overall judgments about the long-term effectiveness of the program. However, in order for the Legislature to make informed decisions about the program, it will be necessary for GA, OSPI, and Commerce to improve energy use and cost data and reporting.

### **Recommendation**

- 1. The Department of General Administration, Office of Superintendent of Public Instruction, and Department of Commerce should develop plans to ensure that they receive complete and accurate data on high performance buildings and they should analyze program results.**
- 2. If the Legislature wishes to obtain information on operating savings for high performance projects supported by community development grants from the Department of Commerce, it should consider revising the reporting requirements of Chapter 39.35D RCW to specifically require the Department of Commerce to obtain that information from grant recipients.**