



High Performance Public Buildings

Proposed Final Report

Joint Legislative Audit & Review Committee

June 23, 2011

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Overview of Audit Results

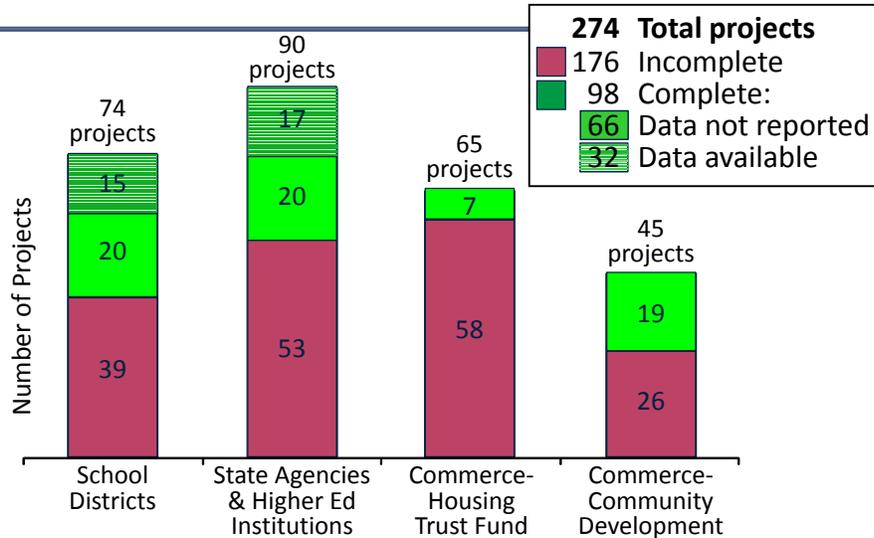
- High performance requirements add 1 to 3 percent to public building design and construction costs
- High performance building energy efficiency is mixed
- Lack of data and methodology issues limit evaluation of building performance
- Definitive conclusion is premature

Public Buildings Must Meet High Performance Standards



- Required by ESSB 5509 (2005) to:
 - Promote efficient use of energy and other resources; and
 - Create productive learning and working environments for occupants
- Legislation establishes reporting requirements
 - Legislature intended to monitor results

274 Projects as of June 2010



Source: JLARC analysis of information provided by GA, OSPI, and Department of Commerce.



The Evergreen State College
Seminar II building

Impact of high performance requirements on public building design and construction costs

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Added Cost of Meeting High Performance Requirements Ranges from 1% to 3%



- Estimate presented to Legislature in 2005
 - High performance requirements would add about 2% to design and construction costs
- Average percent of added cost:

17 State agency/higher education projects	0.9%
14 K-12 school projects	2.6%



Rachel Carson Elementary
Library Media Center

How high performance buildings actually perform

JLARC Review Analyzed Energy Performance in Four Ways



- 1. Actual use** **Compared to** **Design estimate**
 2 of 7 buildings achieved estimated energy efficiency
- 2. High performance buildings** **Compared to** **Similar conventional buildings**
 In 5 of 8 school districts high performance buildings were more energy efficient than conventional buildings
- 3. Energy use** **Compared to** **National benchmark**
 5 of 13 schools earn Energy Star designation
- 4. Energy use** **Compared to** **Change over time**
 8 of 9 schools with more than 22 months data improved energy efficiency

Energy Performance is Mixed



- JLARC review shows that for each measure some high performance buildings demonstrate greater energy efficiency while others do not
- Definitive conclusion is premature at this time

Why Actual Energy Use May Not Meet Estimates



- Building managers and construction professionals identified various factors, including:
 - Operation and maintenance practices
 - How occupants use or don't use high performance features
- Some school districts have created positions to educate building managers and occupants in energy conservation practices



Lynnwood High School

Lack of data and methodology issues limit evaluation

Information About High Performance Buildings Is Not Complete



- GA and OSPI created procedures for collecting cost and operational data
 - Information for many projects has not been reported
- Department of Commerce
 - Has not reported on affordable housing projects
 - Interprets law as not requiring reports on community development projects

JLARC Was Not Able to Assess Building Impact on Workers and Students



- Most studies of worker productivity are based on subjective information, such as surveys
 - Two studies that measure productivity focus on industrial production
- National Academy of Sciences found no evidence-based studies that analyze whether green schools differ from conventional schools on student performance

Recommendation 1



- The Department of General Administration, OSPI, and Department of Commerce should develop plans to ensure that they receive complete and accurate data on high performance buildings and analyze program results.
 - Report to JLARC and legislative fiscal committees by December 2011

Agency Responses	General Administration	Concurs
	OSPI	Concurs
	Commerce	Concurs
	OFM	No comment

Recommendation 2



- If the Legislature wants information on high performance projects supported by community development grants, it should clarify Chapter 39.35D RCW to specifically require the Department of Commerce to obtain that information from grant recipients.

Agency Responses	General Administration	No comment
	OSPI	Concurs
	Commerce	Concurs
	OFM	No comment

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