

Department of Legislative Services
Maryland General Assembly
2005 Session

FISCAL AND POLICY NOTE
Revised

House Bill 196 (Delegate Morhaim, *et al.*)
Health and Government Operations and Appropriations Education, Health, & Environmental Affairs

Proposed Capital Projects - Planning - High Performance Buildings

This bill authorizes a unit of State government, when requesting an appropriation for the planning of a proposed capital project, to include a justification that a building is appropriate for design as a high performance building in its program submission to the Department of Budget and Management (DBM). If a justification is submitted, DBM must evaluate whether it is practicable and fiscally prudent to incorporate a high performance building design.

Fiscal Summary

State Effect: Agency costs will increase if the evaluation for the possibility of a green building design is contracted out. Additionally, to the extent that agencies pursue a high performance design, architectural and engineering and construction costs could increase approximately 2%. However, these increases may be offset by energy savings over the life of the building.

Local Effect: Potential increase in operating expenses if local governments choose to contract out the evaluation for possible green building design. Additionally, if a high performance building design is pursued, construction and design costs will increase as well. These costs could be mitigated by potential energy cost savings over the life of the project.

Small Business Effect: Potential meaningful.

Analysis

Bill Summary: A high performance or “green” building is a building that achieves at least a silver rating according to the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) green building rating system, as adopted in 2001 by the Maryland Green Building Council or a comparable numeric rating according to a nationally recognized, accepted, and appropriate numeric sustainable developing rating system, guideline, or standard. A building may also qualify as a high performance design by meeting at least a two-globe rating according to the Green Globes program as adopted by the Green Building Initiative. Finally, a project qualifies by meeting any nationally recognized, consensus-based, and accepted green building guideline, standard, or system approved by the State.

Current Law: Before an appropriation may be authorized for preliminary planning of a proposed capital project, the unit of State government requesting the appropriation is required to submit to the Department of General Services (DGS) a program describing, in detail, the scope and purpose of the project. The Secretary of Budget and Management must approve the program. Before an appropriation may be authorized for construction of a proposed capital project, the unit of State government requesting the appropriation must submit to DGS and DBM a detailed design program, which must include all information required by DGS and DBM; and both the Secretary of General Services and the Secretary of Budget and Management must approve the detailed design program.

Background: Chapter 519 of 2004 provides a property tax credit for buildings meeting at least a Silver LEED rating. Additionally, the Secretary of General Services, the Secretary of Transportation, and the Chancellor of the University System of Maryland are required to establish a percentage price preference, not to exceed 5%, for the purchase of products made from recycled materials.

The 2003 Maryland Consolidated Capital Bond Loan provided construction funding, as a pilot program, for three construction projects designated as green buildings: Student Services Building at St. Mary’s College of Maryland, Academic Building at St. Mary’s College of Maryland, and the Hammerman Beach Services Building at Gunpowder Falls State Park. None of these buildings have been completed. For two years after construction is completed, DGS is required to evaluate the energy and other savings attributable to the green building components of the projects and whether green building components are beneficial for all types of projects.

LEED is a rating system for designing, constructing, and certifying buildings based on environmental and energy efficiency standards. The program offers training, accreditation, resource support, and third-party certification of building performance. LEED certification is available for commercial buildings including offices, retail and

service establishments, institutional buildings (e.g., libraries, schools, museums, churches, etc.), hotels, and residential buildings of four or more habitable stories. LEED certification for new construction utilizes a 69 point scale in six major categories: (1) sustainable sites; (2) water efficiency; (3) energy and atmosphere; (4) materials and resources; (5) indoor environmental quality; and (6) innovation and design process. Certification requires a score of 26-32 points; Silver certification requires 33-38 points; Gold certification requires 39-51 points; and Platinum certification requires 52 or more points. The ability to measure and verify energy efficiency is one component of the certification checklist. LEED is scalable to account for various local zoning and planning codes.

“Green Globes” is an interactive, online building assessment and design protocol that rates buildings on the basis of their environmental and energy performance. Ratings range from: 1 (score of 35% to 54%); 2 (score of 55% to 69%); 3 (score of 70% to 84%); and 4 (score of 85% to 100%).

These scores can be used as self-assessments internally, or they can be verified by third-party certifiers. Projects that have had their scores independently verified can use the Green Globes logo and brand to illustrate their environmental performance. The Green Globes questionnaire corresponds to a checklist with a total of 1,000 points listed in seven categories.

Unlike LEED, however, Green Globes does not hold projects accountable for strategies that are not applicable, so the actual number of points available varies by project. For example, points are available for designing exterior lighting to avoid glare and skyglow, but for a project with no exterior lighting, a user can select “N/A,” which removes those points from the total number available so as not to penalize the project. The same approach is taken with reuse of existing buildings – points are granted when a building is reused, but an entirely new project is not penalized in Green Globes to the extent that it can be in LEED.

Research has varied as to the cost premiums and savings associated with green building design. The Task Force to Study Efficiency in Procurement (created by Chapter 386 of 2003) recommended that procurement officers be permitted to consider the long-term savings of high performance buildings in new construction contracts. The task force heard testimony that increased construction costs for high performance buildings were from 1% to 2% and that the benefits included reduced energy use and increased worker productivity.

The U.S. Green Buildings Council commissioned a study of 33 green buildings across the nation. The report compared the designs of the green buildings with conventional designs for those buildings. The study found that the average premium for green building

design and construction was slightly less than 2%, or \$3 to \$5/square feet. Along with anticipated energy savings, the report also found substantial benefits in employee productivity and health as well as decreased absenteeism.

Green City Buildings: Applying the LEED Rating System, a report by XEnergy, Inc. for the Portland, Oregon Energy Office, found that the cost savings generated by green building design would be 15% of original construction over the life cycle of three examined buildings.

Green Building Costs and Financial Benefits, a report for the Massachusetts Technology Collaborative, found that energy savings from these design come primarily from increased energy efficiency of up to 28%.

Natural lighting, a substantial element of green building design, contributes to energy efficiency. Photovoltaics, or solar energy panels, can generate up to 2% of a green building's on-site power. Natural lighting has also been found to contribute to improvements in employee productivity. DGS indicated that natural lighting concerns often dictate whether green building design is appropriate for a given project. Correctional facilities and warehouses, for example, are not prime candidates for natural lighting. Additionally, in urban areas, where a given site is surrounded on all sides by other tall buildings, natural lighting may not be feasible.

State Expenditures: High performance building design carries a cost premium of up to 2%. However, DGS generally attaches a 10% "green building premium" to capital projects.

An agency will have to include in its program plan a consideration and evaluation of possible green building design, which could increase planning costs. The extent to which costs will increase to evaluate possible green building design is unclear. Some agency capital construction divisions contain the expertise to make this evaluation, while other agencies will be required to contract out this element of the project plan.

Additionally, if the agency decides to proceed with a green building design, construction costs will increase as well to cover the green building design. At this point the aforementioned 2% cost premiums would be applied to the rest of the project.

As mentioned above, while high performance building design carries a cost premium, it is also accompanied by cost savings over the life cycle of the building. These savings have been valued at various levels from 15% of construction costs to 30% less energy consumption or 28% increased energy efficiency. These savings generated by high performance design have been generally found to exceed the associated cost premiums.

As a matter of illustration, for \$100 million in construction projects, a \$2 million premium could be associated with high performance building design (or \$10 million as budgeted by DGS). However, savings of up to \$15 million could be generated in energy savings over the life cycles of the projects.

Local Fiscal Effect: To the extent that State funds are utilized for construction projects, local expenditures may increase to accommodate an evaluation of possible high performance building design. Further, if a high performance building design is selected, design and construction costs will increase. For illustrative purposes, a \$12 million new elementary school might increase \$240,000, or 2%. However, these costs could be mitigated by potential energy cost savings over the life of the project.

Small Business Effect: The bill requires State agencies to justify why a green building design is not appropriate for a capital project. If agencies pass this requirement through to outside consultants, small businesses in this industry could benefit from additional State contracts associated with a given capital project.

Additional Information

Prior Introductions: In 2004, HB 708/SB 206 passed the House, passed the Senate with amendments, and a conference committee was appointed. The conference committee report was adopted and the bill was special ordered. In 2003, a similar bill, HB 172 was introduced. The bill did not receive a hearing in either the Appropriations or Environmental Matters Committees.

Cross File: SB 92 (Senator Brochin, *et al.*) – Education, Health, and Environmental Affairs.

Information Source(s): Department of General Services, Board of Public Works, University System of Maryland, Maryland Department of Transportation, Department of Budget and Management, Department of Public Safety and Correctional Services, Department of Legislative Services

Fiscal Note History: First Reader - February 2, 2005
mp/hlb Revised - House Third Reader - March 31, 2005

Analysis by: Martin L. Levine

Direct Inquiries to:
(410) 946-5510
(301) 970-5510