



3/11/13 – New NRC Report Regarding GREEN Building Findings [RESOURCE]

A new National Research Council report titled: *Energy-Efficiency Standards and Green Building Rating Systems Used by the Department of Defense for Military Construction and Major Renovations*; includes a literature review that synthesizes the state of the knowledge about the costs and benefits, return on investment, and long term payback of ASHRAE Standard 189.1-2011 for the Design of High-Performance, Green Buildings, ASHRAE Energy Standard 90.1-2010, the LEED and Green Globes green building rating systems. It also identifies potential factors and approaches that the DOD should consider in developing a comprehensive strategy for its entire portfolio of facilities. Some of the key findings and recommended approaches are as follows:

Finding 1: The committee did not identify any research studies that conducted a traditional benefit-cost analysis to determine the long-term net present value savings; return on investment; or long-term payback related to the use of ASHRAE Standard 90.1-2010, ASHRAE Standard 189.1-2011; and the LEED or Green Globes green building certification systems.

Finding 2: There is some limited evidence to indicate that provisions within ASHRAE Standard 189.1-2011 may need to be selectively adopted if use of this standard is to be cost effective in the DOD operating environment.

Finding 3: Research studies indicate that the incremental costs to design and construct high-performance or green buildings typically range from 0 to 8 percent higher than the costs to design and construct conventional buildings, depending on the methodology used in the study and the type of building analyzed. The additional incremental costs to design and construct high-performance or green buildings are relatively small when compared to total life-cycle costs.

Finding 5: The evidence from the literature search indicates that high-performance or green buildings can result in significant reductions in energy use and water use. The cost savings associated with the reductions in energy and water use will vary by geographic region, by climate zone, and by building type.

Finding 6: Not every individual high-performance or green building achieved energy or water savings when compared to similar conventional buildings.

Finding 9: Effective operation of high-performance buildings requires well-trained facilities managers.

In addition, the report has a series of “*Recommended Approaches.*” Two key approaches are No. 1: Continue to require that new buildings or major renovations be designed to achieve a LEED-Silver or equivalent rating in order to meet the multiple objectives embedded in laws and mandates related to high-performance buildings; and No. 3: Put policies and resources in place to measure the actual performance of the Department of Defense’s high-performance, green, and conventional buildings to meet multiple objectives.

The report is publically available at http://www.nap.edu/catalog.php?record_id=18282