



KEY POINT SUMMARY

OBJECTIVES

To develop a tool that could aid managers and facility design and operation professionals in comparing the costs of running their facilities with the costs of others, and to compare a sample of LEED-certified hospitals with their non-LEED counterparts to assess differences in operation and maintenance costs.

DESIGN IMPLICATIONS

LEED certification may promote more environmentally friendly design and managerial decisions, but as always, the costs of renovation, operation, and maintenance should be carefully considered prior to any shift in an institution's physical or managerial makeup.

Performance evaluation of 32 LEED hospitals on operation costs

Sadatsafavi, H., & Shepley, M. M. 2016 | *Procedia Engineering* Volume 145, Pages 1234-1241

Key Concepts/Context

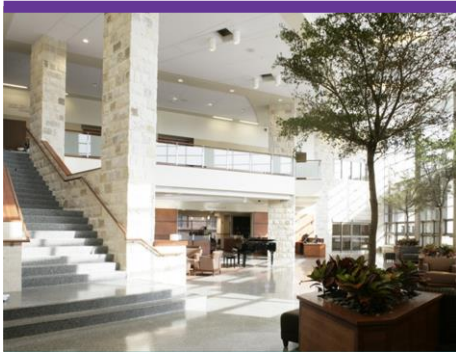
As healthcare needs increase, providers strive to reduce operational costs while simultaneously increasing healthcare facility construction and renovation efforts. At the same time, certification programs such as Leadership in Energy and Environmental Design (LEED) are examples of the emerging concerns regarding the environmental impact of healthcare facilities. The authors note that the number of studies documenting the benefits of more "green" facilities is limited; however, they hypothesize that upon comparing LEED-certified hospitals with uncertified ones, the LEED facilities will prove to have lower-than-average maintenance costs.

Methods

The authors created an online tool to help compare operation and maintenance costs of different healthcare facilities. The comparison group included hospitals of comparable location, size, and ownership. Overall, seven types of hospitals were included in the comparisons: short-term acute care hospitals, children's hospitals, critical access hospitals, long-term care hospitals, psychiatric hospitals, rehabilitation hospitals, and other. Then the tool was used to compare the costs from a sample of LEED healthcare facilities with uncertified facilities of comparable ownership, type, and location. All data were retrieved from publically available resources: the USGBC LEED project directory, and the Healthcare Cost Report Information System (HCRIS) by the CMS.

Findings

The authors identified 32 LEED hospitals from the HCRIS data files, the majority of which were short-term acute care (75%) and nonprofit (72%) institutions, and half had Gold-level certification. Some 116 comparisons were possible for these 32 facilities, and the authors found that LEED facilities only had lower median costs than their non-LEED counterparts on 39 occasions (33% of the time). No meaningful



The Center for Health Design: Moving Healthcare Forward

The Center for Health Design advances best practices and empowers healthcare leaders with quality research that demonstrates the value of design to improve health outcomes, patient experience of care, and provider/staff satisfaction and performance.

Learn more at
www.healthdesign.org

correlation was found between LEED credits achieved and hospital performance. Overall, the authors found no evidence that achieving LEED credits results in lowered operation and maintenance costs.

Limitations

All data were sourced from online databases, which only count for a certain number of institutions. Half of the LEED-certified buildings included in this study were Gold-rated, begging the question of whether results would have been different had more Platinum-level institutions been included. The authors note that higher levels of performance were not correlated with LEED certification, but this is largely fiscal analysis that does not take into account other potentially important dimensions underlying LEED certification, such as environmental impact or staff and patient perspectives on green amenities and efforts.

The Knowledge Repository is provided with the funding support of:



Additional key point summaries provided by:



RESEARCH DESIGN
connections