Healthcare GOES GREEN

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Fundamentals remain in flux as groups organize green requirements for healthcare

Healthcare facilities face daily challenges in promoting the well-being of their patients. These challenges are exacerbated by a difficult economic environment, the current questionable future of healthcare reform, and ongoing changes in the healthcare market. At the same time, the design and construction industry has experienced a flood of interest in sustainable design and development.

The intersection of healthcare facilities and green building is fertile ground. The interplay between green buildings and their potential impacts on occupant health is vital, and new developments seem to appear daily.

Green building and health

Topics such as energy efficiency, carbon footprints and water conservation often receive the most attention in discussions of green building. Despite this attention, the green building movement focuses significant attention on indoor air quality and the purported health impacts of poor design, construction, operations and maintenance.

Everyone knows the preeminent player in the green building arena is the U.S. Green Building

Council's Leadership in Energy and Environmental Design and its various ratings systems. While the most recent version of LEED has somewhat reduced the relative importance of indoor environmental quality, or IEQ, for the new construction rating system, there still are a significant number of credits focused on the well-being and health of a building's occupants.

The overview section of the IEQ section of the USGBC's *LEED 2009 Reference Guide for Green Building Design and Construction* reflects this emphasis. The guide states, "Americans spend an average of 90 percent of their time indoors, so the quality of the indoor environment has a significant influence on their well-being, productivity, and quality of life…Strategies to improve indoor environmental quality have the potential to… improve the health of building occupants."

There is no doubt that the sick and injured may spend even more time than the average office worker indoors. Clearly, improving the overall well-being and health of building occupants should be a top consideration for anyone involved in the construction of medical facilities.

When it comes to the health of building occupants, the USGBC takes a holistic approach to IEQ through improving ventilation, managing air contaminants, and allowing occupants to control desired settings. In regard to chemical emissions, LEED provides credits for using materials with low emissions of volatile organic compounds, including adhesives, sealants, paints, coatings, flooring systems, composite wood and agri-fiber products, and ceiling and wall systems. The ratings even cover certain types of furniture and furnishings. The project can earn points for its methods of handling construction-related contaminants both during construction and after completion. In addition to air quality, the system provides for consideration of humidity, lighting and temperature controls, daylighting and views, as they also impact the perceived well-being of building occupants.

As operators of healthcare facilities well know, terms like 'well-being' and 'quality of life' are extremely difficult to quantify, particularly in the context of conducting a cost/benefit analysis. There have been efforts to study these questions. In May 2009, Michigan State University released a study by a group of students and a professor documenting their evaluation of the performance of two LEED-certified

office buildings. The study used self-evaluation information from occupants who moved into the buildings and compared their ratings of well-being before and after the move. Perhaps most interesting, they also included quantitative data regarding productivity, including sick days, tabulated both before and after the move. The study concluded occupant well-being and productivity benefits far exceeded the associated costs, indicating these are economically viable investments.

While this study was conducted in the office building context, its findings are exciting to those interested in green design and construction of healthcare facilities. Critics may point to the somewhat nebulous nature of the description of feelings of well-being by building occupants. Nevertheless, the study showcases how poor indoor environmental design and conditions can negatively affect an occupant's health, mood and overall well-being. It also emphasizes the potentially significant health benefits associated with a feeling of well-being among building occupants. Extrapolating this data and information into hospitals, for example, could lead to improved patient outcomes and results purely based on the psychology of the patients and their reaction to being treated within green facilities.

It is probably too early to consider this subject closed based on the results of one study. What is clear is that the interface of well-being, health, and building design and construction is a worthwhile topic for analysis and discussion, particularly among those in the healthcare industry.

Growth of interest, development of attention

As green building interest has exploded nationally, the USGBC has continued to refine and analyze the LEED rating system. In particular, USGBC has begun to develop specific rating systems for more specialized uses. Not surprisingly, healthcare facilities have received particular attention.

USGBC has announced a joint agreement with the Green Guide for Health Care to foster best practices and ensure that the healthcare industry has the tools and resources it needs to build green. This partnership resulted in an extended period of analysis of the existing LEED for New Construction standards and their application to healthcare facilities. Healthcare facilities face a number of specific challenges. One easy example for laypeople to grasp is that some healthcare facilities operate 24 hours a day. This creates unique energy and lighting demands; it also creates unique opportunities to use creative design, construction and management practices in order to enhance energy efficiency.

GGHC already was invested into guidance for healthcare facilities. In January 2007, GGHC version 2.2 was released after a two-year pilot period involving 115 projects. GGHC and USGBC released the first version of LEED for Healthcare for comment. The initial public comment period is completed and closed. We can look forward in the future to subsequent release of revisions, comments and finalization of the standards.

While it is difficult to predict a time frame, it appears certain that LEED for Healthcare will be part of the design and construction landscape of the future. Owners, designers and contractors need to keep abreast of these developments. In the interim, professionals interested in greening their facilities still can use the base LEED for New Construction, LEED for Existing Buildings and GGHC materials as guidance on how to approach green building for their facility. The green building movement is here to stay. The direction and focus may change, as we can see most recently from LEED 2009's release with its increased focus on energy efficiency and carbon footprint. With respect to healthcare facilities, the future almost certainly holds the finalization and issuance of LEED for Healthcare. Finally, the preliminary data that is available offers exciting indications that use of green building practices can in fact promote the well-being of occupants, and that may translate to improved patient outcomes. Guarded optimism on this front is warranted, and everyone should promote further study to make sure that sustainable development includes economic feasibility as part of the model. ■

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