

Sustainability in Healthcare: Dollars and Sense

by Andy Stapleton, LEED AP, senior MEP engineer, Mortenson Construction
(First published in *Chicago Hospital News*, March 2009)

It is difficult to pick up a newspaper, magazine or trade journal and not find an article dedicated to “Green Buildings” or Sustainability. The impact of climate change is widely recognized as a real threat to our way of life. This environmental call to action is welcome provided it is balanced with informed decision making rooted in long term lifecycle analysis.

First there was LEED

Developed by the U.S. Green Building Council (USGBC) and introduced in 2000, the Leadership in Energy and Environmental Design (LEED) for New Construction (LEED-NC) rating system provides owners, designers and builders with a tool for measuring implementation of sustainable practices in new commercial and institutional projects. It addresses five key areas: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

The first sustainability document focused on healthcare was the Green Healthcare Construction Guidance Statement published in January 2002 by the American Society for Healthcare Engineering (ASHE).

The Green Guide for Health Care (GGHC), released in 2004, follows a similar point structure to the LEED format, but differs in two key respects. First, it is a voluntary, self certifying program whereas LEED projects are reviewed and certified by the USGBC.

Second, the GGHC is broken into two primary sections (Construction and Operations) whereas LEEDNC is focused primarily on the initial design and construction of a facility.

Over the past four years the GGHC and USGBC have been working together to develop a LEED for Healthcare rating system. It is expected to be released this year. The Joint Commission published *Health Care at the Crossroads: Guiding Principles for the Development of the Hospital of the Future* states “These (energy) costs plus growing concern over global warming are influencing hospitals to use cleaner, more efficient sources of energy.”

What can be done?

Guidelines and toolkits are valuable, but what are some of the strategies hospitals are using to be more energy efficient and environmentally responsible?

- Specifying carpet, paints and wall coatings with low VOC (volatile organic compound) content significantly reduces the number of particulates that may cause respiratory problems or adversely affect patients with compromised immune systems.
- When local materials are specified, transportation costs and fuel usage is reduced, reducing carbon dioxide emissions.
- A common misconception is that a building’s energy performance is tied primarily to mechanical (heating and cooling) and electrical (lighting) systems. But there is more to it. The architect has the greatest potential to impact energy usage. An efficient enclosure coupled with well designed ventilation and lighting is a true recipe for success.
- Design and construction professionals should not be afraid to push the envelope for new ideas. On one healthcare project, the team used solar panels instead of the traditional equipment screens on the roof. It is proving both financially and environmentally advantageous.

The key to establishing the cost associated with environmental sustainability initiatives is twofold. First, think in terms of both direct and indirect costs. A design that provides additional day lighting and more access to natural environments may not appear to have a measurable payback because it isn't associated with energy savings. However, a reduction in staff errors and increased employee effectiveness and satisfaction may improve a healthcare provider's ability to recruit and retain team members.

Second: think total cost of ownership or lifecycle cost. Yes, you may earn a LEED point by installing bicycle racks for less money than upgrading the core equipment of your mechanical facilities. But over the life of the facility, the payback from more efficient mechanical equipment will likely save more money and have a greater impact on the fight against global warming.

The movement toward green building and sustainability is undeniable. However, the successful implementation of these strategies depends on a thorough and well informed vetting process that takes a holistic cost approach to environmental responsibility.