



Designers for the Peninsula Medical Center near San Francisco worked with the local utility to cut the hospital's energy use. The down-sized mechanical system will more than pay for the cost studies. Rendering by Anshen+Allen

Hospitals are making strides toward sustainability

Applying green principles makes three hospitals healthier

By ADAM KERNER and
BARBARA BRECKENFELD

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Architects across the globe are beginning to apply sustainable design principles to their health care projects. There will be many "firsts" as we delve into the unique challenges and opportunities to bring sustainable solutions into health care.

Efforts are under way to develop national sustainable guidelines for health care facilities and find inventive ways to design hospitals that will be efficient to build and operate.

Healthier hospitals

Consider this: health care facilities have 24/7 operations, infection-control issues, medical waste, substantial building code requirements, and intensive water, chemical and energy needs. These facilities offer wonderful challenges and opportunities to expand our cur-

Green Guide for Health Care

The Green Guide for Health Care provides a way for health care organizations to gauge their progress towards sustainable goals.

Developed in 2003 by health care industry leaders, the guide is the industry's first attempt to integrate environmental health into planning, design, construction and maintenance.

The guide, still in its pilot phase, is organized similarly to LEED. For now, it does not provide point-based rankings.

The Green Guide for Health Care is not affiliated with LEED or the U.S. Green Building Council.

rent approaches to sustainable design.

Green health care design has many benefits. By providing a nontoxic or low-toxic environment, green medical facilities can improve healing for patients and offer

healthier workplaces for staff.

Health care facilities — especially hospitals — consume enormous amounts of resources. Health care designers are finding ways to use less and reduce the amount of waste sent for disposal in landfills or by incineration.

By increasing energy efficiency, green design can reduce operating costs for health care facilities already running on slim margins. Good design can reduce energy costs, daylighting can improve productivity, good indoor air quality can improve recovery time and reduce staff absenteeism, and appropriate interior finishes can cut cleaning and maintenance costs.

With a mission to enhance both individual and community health, and as major community institutions, health care organizations are embracing the social responsibility associated with green design and building operations. As major purchasers of a vast array of products, they are expanding the market for non-toxic building materials and products used in day-to-day operations.

Health care facilities can increase their competitiveness in the marketplace through improved indoor air quality and non-toxic environments for patients with chemical sensitivities and environmental-related illnesses. Faced with high staff turnovers, green health care institutions can offer better work environments and improve employee retention.

Anshen+Allen has three large health care projects in design and construction, each using green design principles.

Health institutions committed to environmental health are adopting policies to reduce or build without vinyl (PVC), use paints and adhesives free of volatile organic compounds, and install tiles that don't support bacteria and fungi growth.

Peninsula Medical Center

Peninsula Medical Center in Burlingame, Calif., is planning to build a sustainable hospital. The 440,000-square-foot replacement hospital, scheduled to open in 2010, is owned by Mills-Peninsula Health Services, an affiliate of Sutter Health.

The client made decisions using sustainable design programs such as the Green Guide for Health Care, LEED and Savings By Design, a program administered by California utility companies.

Guided by these programs, the design team challenged the typical assumptions about health care energy use. Through extensive life-cycle cost and thermal comfort analyses, the team created a highly efficient design that avoids prohibitive upfront costs and minimizes future

maintenance costs.

Designers, working with the Pacific Gas & Electric utility company, identified and analyzed all the energy-saving measures that could work within stringent health care building codes. The design now includes 100 percent outside air supply, variable air volume delivery for perimeter patient rooms, and heat recovery equipment designed to reduce energy consumption.

The resulting mechanical system was significantly smaller, and the cost savings more than paid for the studies.

RiverBend

Bellevue-based PeaceHealth is building its new RiverBend campus for Sacred Heart Medical Center in Springfield, Ore., on 26 acres along the McKenzie River. PeaceHealth asked to use as many sustainable design practices as possible.

Those practices have included reducing power consumption, using low-emission materials, using CFC-free equipment, purchasing from nearby manufacturers, using daylight instead of light fixtures and using green building materials whenever possible.

Laguna Honda

Laguna Honda Hospital and Rehabilitation Center in San Francisco is a public long-term care facility for over 1,000 residents. A new 800,000-square-foot replacement hospital is under construction that will hold 1,200 beds, built in phases on the existing site.

Laguna Honda will seek LEED certification even though the project was budgeted before the Green Guide for Health Care, a sustainability tool for the health care industry, was published. The hospital anticipates being the first such LEED-certified facility in California.

Even for this budget-conscious facility, many green design choices are possible.

Engineering models show that operating savings will be \$7 million over 10 years — a 30 percent decrease in energy use — compared with designs built to conventional California energy code specifications.

Building upon the foundation provided by the LEED certification system, the Green Guide for Health Care outlines ways to create healthier environments for patients and staff. The examples given here illustrate just the beginning of what is possible.

Adam Kerne is managing principal of the Seattle office of Anshen+Allen, an architecture firm specializing in health care and academic facility design. Barbara Breckenfeld is principal of Breckenfeld Communications & Marketing.