Sustainable Solutions for Healthcare

Answers for infrastructure.
Hospitals are complex organizations.

Challenged to satisfy numerous goals at once, hospitals are charged with ensuring quality patient care and serving as a steward for the community.

To satisfy these goals, hospitals strive to provide an optimum healthcare environment that not only contributes to quality patient care, but must also consider revenue generation, regulatory compliance, improving operational performance, recruiting and retaining staff, as well as other hospital objectives. As a result, hospitals are adopting green strategies and more sustainable practices in an effort to:

- Enhance patient health and well-being
- Provide for faster patient recovery time
- Achieve operating cost savings
- Increase building efficiency
- Reduce energy costs
- Improve air quality

Hospitals have a significant impact on America’s natural resources. According to the U.S. Environmental Protection Agency, the healthcare industry spends nearly $6.5 billion on energy per year — making it the second highest consumer of energy by industry. In a typical hospital, the lighting, heating and hot water systems represent between 61 and 79 percent of total energy use — many opportunities exist to enhance the sustainability of healthcare environments.

Green Guidelines

For hospitals interested in creating greener environments, two rating systems are now widely accepted. The U.S. Green Building Council’s LEED® (Leadership in Energy and Environmental Design) rating system is an internationally recognized, third party framework for using strategies to improve a building’s performance. The LEED for Healthcare Rating System is now in draft form.

In addition to LEED, the Green Guide for Health Care (GGHC) is a voluntary, self-certifying tool for sustainable design, construction, and operations. The GGHC is modeled on the USGBC LEED® building rating systems and is tailored to address specific healthcare regulatory requirements that control many aspects of acute care hospitals’ physical environment and facility operations.

The LEED for Healthcare Rating System and The Green Guide for Healthcare are specifically designed as guides for healthcare organizations as they adopt more sustainable practices. The rating systems provide certification points in various environmental categories that impact the design and operation of buildings.

Major categories of the rating systems include:

- Energy and Atmosphere
- Indoor Environmental Quality
- Innovation and Design Process
- Materials and Resources
- Sustainable Sites
- Water Efficiency
Siemens Expertise

Siemens understands the unique environmental, regulatory and energy needs of a hospital. From the surgical suite to the patient’s recovery room, Siemens works with you to customize sustainable solutions for an environment specifically tailored toward your patient’s well-being.

We understand the critical needs of a surgical suite. It is imperative that the environment established in the suite supports successful outcomes and minimizes the risk of patient infection. Siemens’ building technology solutions enable surgical rooms to meet the appropriate temperature, relative humidity, air flow and room pressurization requirements needed for unique environments.

Delivering Green solutions and services to healthcare organizations is one of the many elements in the overall construct of a complex healthcare facility. Siemens provides expertise in the design and maintenance of a hospital’s infrastructure and programs to minimize your facility’s energy consumption. Together, these elements allow our clients to optimize building performance and create a more sustainable environment for their patients and staff. Expertise in this wide range of healthcare related areas uniquely qualifies Siemens to provide superior results for healthcare organizations.

Dell Children’s Medical Center of Central Texas — The World’s First LEED Platinum Hospital

Siemens worked with Seton Healthcare to provide the APOGEE® building automation system that monitors temperature, pressure and humidity throughout the nearly half million square foot Dell Children’s facility. It’s estimated that efficiency measures at Dell save enough power to fuel 1,800 homes. The hospital contains numerous greenhouse features including motion and natural light sensors that shut off unneeded lights; low flow plumbing throughout; use of local materials, like stone, which saves fuel for shipping; and healing gardens and open courtyards designed to improve both patient and personnel morale.

Green Categories | Examples of How Siemens Can Help Hospitals

| LEED® Water Efficiency | • Water Treatment
| | - Water treatment systems to remove contaminants
| | • Measurement and Verification
| | - Monitor water consumption using meters and submeters on the hospitals water sources
| LEED® Energy & Atmosphere | • Fundamental Commissioning
| | • Enhanced Commissioning
| | • Optimize Energy Performance
| | The following mandatory controls are required for HVAC system energy efficiency:
| | - Zone Isolation
| | - Shut-off Damper Control
| | - Low-Leakage Dampers
| | - Ventilation Fan Shut-off
| | - Humidifier Preheat
| | - Freeze Protection
| | - Demand Control Ventilation
| | • Measurement and Verification
| | - Metering must be provided for electrical and mechanical systems such as: Lighting Power Loads, Chillers, Data Centers, Critical Electrical Distribution Systems, Air Distribution Systems, and Motor Loads.
| LEED® Environmental Quality | • Monitor Outdoor Air Delivery
| | • Maintain minimum indoor air quality
| | • Monitor CO₂
| GGHC Operations | • Annual Energy Audit
| | • Outdoor Air Introduction and Exhaust System
| | • Ongoing Commissioning
| | • Staff Education
| | • Building Systems Monitoring

For more information about how Siemens can help your hospital, call your local Siemens office or email our healthcare experts at: healthcare.us.sbt@siemens.com.