

SMART GREEN—Ways to Make Your Medical Office Building Green



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ning for 15 years. In addition, he partners with developers to build, as well as own, “On Campus and Suburban Based” Medical Office Buildings and Surgical Centers. Bill has held his SIOR designation for 11 years.



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By William Wiebe, SIOR and P. Richard Krehbiel, AIA, LEED-AP

Everyone has a scorecard. The baseball game is hits, runs, and errors and the basketball game has goals, fouls, assists, steals, and rebounds. The U.S. Green Building Council (not a part of the government) has its scorecard for achieving the coveted “Leadership in Energy and Environmental Design” (LEED®) rating. The key to certifying your project is to get a score of 26 out of a possible 69 points. One of the best features of the LEED system is the way that it organizes the concept of “going Green” into six categories:

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

Each category has options that can be tailored to suit your project’s use, location, and owner preferences. Want energy savings? Go for those points. Prefer to build with healthy indoor materials? Achieve credits in that category.

Because of this flexibility, what is commonly thought of as a complicated expensive process can be simple and cost-effective for medical office buildings (MOBs). Typical MBOs undergo scrutiny for adherence to local governmental building codes because of the nature of their use. Most MOBs already have standards high enough to make the step up to LEED certification a logical one. In fact, in some of the categories, the building standards far exceed what is required for LEED certification. Only 26 points are needed for your MOB to become a LEED-certified building.

Although the LEED Scorecard is too large to include in this article, it can be accessed on the US Green Building Council Web site at <http://www.usgbc.org/ShowFile.aspx?DocumentID=3998>

Richard Krehbiel and I have developed 18 ways that you can get the certification with less than four percent of increased building

costs. We call it “Smart Green.” These particular features are what we think are the smartest Green points—the ones that can be earned for the least amount of gold.

Because the cost of construction has increased dramatically over the past two years, the cost of alternative, LEED-certified building materials is coming closer to the cost of traditional materials.

Total construction in the United States consumes three billion tons of raw materials per year. Almost 40 percent of municipal waste is from construction and demolition alone. If you can get companies to act and think differently, the opportunities to conserve are enormous. It starts with a plan, a commitment, and a scorecard. The investment will pay off in cost savings, energy reduction, and a complete overhaul of the employee/patient benefit and environment.

Sustainable Sites

If you pick a site in an urban or Brownfield redevelopment that is near a bus line (required by most hospitals) and has a foot print that increases open space, then you have already begun collecting points that contribute to your LEED certification. It is as easy as planning a building with intelligent site parameters—including adequate open areas. A site that is near light rail or bus lines and provides preferred parking for car pools as well as a secure spot for bicycles can also earn your building LEED credits.

By implementing a storm-water management program on the site that results in a 25 percent reduction of storm water volume can acquire points. Today, different materials for pavement are close in cost to more traditional materials such as concrete. The new permeable materials sift out suspended solids and also allow storm water to be absorbed over a larger area. This can eliminate the need for costly underground storage.

Water Efficiency

Use water efficiently inside and out. Pick plants that provide shade and require little water. Some local hospitals have installed new liquid waste disposal systems in the operating rooms. As a result, filtering cycles allow the fluid to be disposed of through regular drains instead of medical waste. You also can reduce water use by 20 percent with low flow bathroom fixtures that will increase water efficiency.

Energy and Atmosphere

The first thing that comes to mind in Green building strategy is energy efficiency. Buildings consume 40 percent of our total energy and 60 percent of our electricity. (If we have not thought about it enough, we have “T. Boone Pickens Jr.,” to remind us.) Optimizing energy through improved HVAC systems and eliminating the outdated refrigerants and fire suppression systems can save on energy usage and add to the bottom line.

In medical office construction there has been an increase in the use of materials such as low-emissive glass. The glass used is in vacuum-sealed, double pane windows that reduce the transfer of heat, keeping more warm air inside during the winter and preventing heat from entering during the summer. In addition, it provides the patient’s room with more natural light, which has been proven to help in the healing process.

Most of the MOBs that apply for LEED certification use third-party resources to evaluate the optimization of energy and to select a LEED-qualified professional; this also contributes to LEED points and overall accreditation.

Materials and Resources

You can achieve LEED points by considering ways to incorporate Green from the beginning of your project and by substituting Green products and materials that are similar in cost to traditional materials. You can also add to your point score simply by purchasing most of your materials locally. In addition, recycled paper products for wall covering, floor covering with low VOC content, and non oil based paint are more abundant now and at competitive prices.

Indoor Environmental Quality



Window shading and placement at lobbies, exam rooms, and offices will contribute to Daylighting (credit EQ 8.1) Shown here is the Northern Kentucky Children’s Advocacy Center.

By applying LEED principles to medical office buildings, you are not only saving money in the long run, but you are also creating a healthier environment that enhances

the healing process. Sometimes it is as simple as eliminating noxious fumes in the materials that you use.



Daylighting (credit EQ 8.1) is an important consideration for orientation of the building.



Rapidly renewable materials (credit MR 6) can be used in interiors by incorporating wheatboard into casework and installing linoleum flooring. Shown is the Pediatrics center at St. Luke Hospital in Florence, Kentucky.

important for every building, but it is critical in medical facilities.

Innovation and Design Process

You can earn one LEED point simply by using a LEED accredited architect. Up to four more points can be earned by using innovative ideas including those that promote patient healing. In past projects, design ideas such as advanced energy controls, green cleaning, advanced air filtration, and GreenGuard certified furniture have been awarded points for their innovative thinking. The USGBC catalogs these innovative ideas, and posts a list for use in brainstorming ideas for your projects. The concept is to promote Green design innovation.

Let the light shine in! “Daylighting” is a term used to describe the use of sunlight to illuminate interiors. It is a proven fact that daylight improves employee productivity and has measurable results on patient outcomes.

According to the Environmental Protection Agency, we spend 90 percent of our time indoors. Indoor pollutants far outweigh outdoor pollutants and are among the top five environmental hazards facing Americans today. LEED principles suggest that we design MOBs with single-patient rooms to reduce the risk of airborne disease and speed up recovery. Proper ventilation is essential not only in promoting the health of the patient but in enhancing the productivity of the workers. Carefully managing indoor air quality from day-to-day and during construction is

The Score

Earning LEED points can be achieved with a good plan outlined in the LEED design process. We have presented examples totalling 18 points out of the 26 that are needed to achieve certification of a new building. As you can see, we are nearly there already, and we have just started. That is why we call it Smart.

Medical office buildings have an impact on lives and should promote a healthy environment for the healing process. Good design and Green medical office buildings are not mutually exclusive. By implementing Green building policies, programs, technologies, standards, and design practices you can help the way we think, grow, and heal.

As the Green building sector grows, more and more health professionals are seeing the benefits of Green buildings and LEED certification. Green design not only makes a positive impact on health and the environment, it also enhances building and organizational marketability, increases worker productivity, and creates a sustainable community. LEED fits into this market by providing a rating system that is voluntary, consensus based, and market driven; it uses accepted energy and environmental principles and strikes a balance between established practices and emerging concepts. As Green designers and developers, we do this for a number of reasons. The Green MOB recognizes a commitment to environmental issues, a commitment to the organization, and a commitment to patients, in addition to addressing an array of state and local government initiatives. Healthcare REITS, lending institutions, and investors also see the benefits of the sustainable facilities. So, if Al Gore doesn't get you motivated, then a shift in the cap rate by 50 basis points certainly will.

The energy crises of the 1970s and 1980s as well as today's energy situation have changed our views and shaped our opinions on how we interact with our environment. The Green concept is not just a trend but a lifestyle and a manner of thinking that in itself is sustainable.

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