What projects qualify as green (sustainable) design? Apply the "whole building approach"

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Building owners and municipalities exploring energy efficiency concepts for their buildings commonly approach design professionals with the preconceived idea that they need to install solar panels to attain green status for their projects. This high-tech option obviously fits the bill however there are many alternative energy conscientious options available. Virtually all building systems have an effect on energy usage at some level and facility managers should be cognizant of all options available to them, as many of them could provide a greater energy reduction benefit.

The best way to consider a building's green potential is to apply the "whole building approach" considering site issues, water efficiency concepts, building systems, and material options on multiple levels. Of course it is rare when every green alternative can be implemented into a single project, but each option should be weighed on its energy reduction potential to maximize energy usage reduction and its associated benefits. Regardless of project budget it makes little sense to spend money on one system when greater energy savings could be achieved by other means.

Available site concepts include maximizing open space, minimizing hardscape, stormwater management, landscaping with native adaptive species, and minimizing site lighting. Collectively these items can reduce heat island effect, shade a building, reduce the need for irrigation systems, and reduce electrical usage, resulting in reduced heating and electrical demand loads thereby justifying the use of smaller more energy efficient systems to serve a building.

Fresh water and wastewater technology green options are also available. Reducing the quantity of either, or both, saves energy and reduces emissions as both of these systems utilize power, and as both have a great effect on the world's most important natural resource.

There is obvious green potential in building system selection, but solar panels are not the only alternative. Means available include wind turbines, geothermal, low impact hydro, and other technologies. And system strategies can also include control systems for thermal comfort and lighting, energy efficient lighting, and daylighting strategies. Lighting considerations play a major role as the heat generated within a facility by lighting often has a great effect on the air conditioning loads; while material choices often offer the greatest potential for energy savings especially on alteration projects. Consider how ineffective any of the above strategies would be if the walls, floors, roofs, windows, and doors are not as energy-efficient as possible. Green building envelope considerations must always be considered, and they are usually the most cost effective way to save energy and reduce a building's carbon footprint.

The spaces in which we work and live are integral to our quality of life and the health of our planet. We have seen that green buildings are healthier, have less of an impact on the environment and cost less to operate. As part of a building's design there is a need to develop an environmental approach that is balanced, economical and project specific. To assist in the attainment of that goal

one system that may be imployed is the LEED rating system which stands for Leadership in Energy and Environmental Design as established by the U.S. Green Building Council (USGBC) in 1993. The LEED rating system serves as the benchmark for high performance buildings and serves to identify and evaluate potential green opportunities that will have an immediate, measurable impact on key concerns like energy conservation, global climate change, and occupant health.

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