



## Tips for Green Buildings

Green building, sometimes called sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation and maintenance. Sustainable building takes into account the building's entire lifecycle – there could be slightly higher initial costs, but green designs, upgrades and operations create savings that will almost always pay for the added costs, reduce the use of other resources and enhance productivity. Green building practices can help organizations achieve and maintain operational efficiencies that help create a sustainable future for the community, economy and environment.

Whether it's new construction or renovating an existing infrastructure, below is a list of tips that can help facility managers implement green building practices:

### ***For New Construction***

- When determining whether your new construction project will be a green/sustainable facility the following questions should be considered:
  - Will the facility use less non-renewable energy to operate?
  - Will the project take fewer resources to build?
  - Will the facility have a longer life cycle without undue effort to extend its life?
  - Will the facility produce less pollution with less damage to ecosystems?
- Set clear and realistic goals not only for the building project, but for the project's environmental targets. Sample goals include a facility with low operational energy use, low renewable energy source and long facility lifecycle.
- Budget appropriately – while this applies to construction in general, it is especially true of building green. Plan for slightly higher costs up front knowing that green building will create enough savings down the line to pay for the added costs.
- [Host an integrated design charrette](#) – An integrated design charrette is an intensely focused, multi-day meeting with all stakeholders such as architects, engineers, contractors, product manufacturers, building users and project management staff. It is important that all relevant decision makers attend the sessions to maximize their efficiency and effectiveness. This collaborative approach helps to define and prioritize goals, creates realistic and achievable design ideas and helps transform a project from a static, complex problem to a successful, buildable plan.
- Be adamant on building commissioning – this may seem obvious for most building owners but often time this is the part being neglected (or value engineered) due to shortening of the construction schedule. Ensuring the building automation system has been tuned according to the specific building requirement will reduce unnecessary operating expenses and occupant complaints.
- The following are six fundamental principles that define a sustainable building design and should be considered when planning a green facility:
  - Selecting the proper building site that integrates with a sustainable building design – the location, orientation and landscaping of a building affect the environment and energy use.
  - Optimizing energy use – it is essential to find ways to increase energy efficiency, reduce load and utilize renewable energy resources.
  - Conserving water – a sustainable building should use water efficiently, reuse and recycle water, and reduce, treat and control site runoff.
  - Using environmentally preferable products that minimize life-cycle environmental impacts such as global warming and resource depletion as well as have a reduced effect on human health and the environment.
  - Improving indoor air quality – a facility that maximizes daylighting, has appropriate ventilation and moisture control will have a significant impact on occupational health, comfort and productivity.
  - Optimizing operational and maintenance practices will contribute to reduced energy and resource costs and prevent system failures. For example, ensure the building automation overrides are removed and building controls are maximized to help optimize energy use without sacrificing comfort.

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## ***For Existing Facilities:***

- When debating whether to make energy efficient upgrades on existing facilities, consider that investments in high-performance buildings often can be funded within current energy and operating budgets. Funding can come from a variety of sources; in addition, energy efficient savings combined with lower maintenance costs can partially offset asset replacement.
- Consider a facility audit to identify savings opportunities, appropriate energy conservation measures and establish a “not to exceed” cost. Use [Energy Star’s Portfolio Manager](#) benchmarking system to establish the baseline energy usage for your building as it relates to similar buildings.
- When trying to determine the potential return on investment, weigh the proposed infrastructure investment against a conservative estimate of future energy costs compared to historical costs. To derive the identified return on investment, it is important to diligently follow the plan through the entire project.
- Explore funding alternatives such as performance contracting, which provides financing for facility improvements that have longer-term payback through guaranteed energy savings and incentives from state and federal agencies.
- Leverage available funding for your infrastructure by seeking out clean energy funds, utility rebates, manufacturer discounts, cost-deferment programs and other budget subsidies.
- Be vigilant. Keep up with code compliance as well as industry standards and regulations. Also make sure management is kept updated – especially where deficiencies exist. Be aggressive about correcting deficiencies, yet realistic in terms of timeline and expense. At first plan the work, then work the plan.
- Monitor utility usage and costs to help confirm the value of the project. Regular occupant surveys will help you to understand the programmatic areas and enhance occupant satisfaction. Starting a productivity measure will help solidify the existing business case and open opportunities for future upgrades.
- Simple things like scheduling filter changes and routine maintenance as well as ensuring building automation systems are optimized can help reduce energy costs and save resources.

## ***Additional Resources***

There are many resources to provide details and additional information regarding green building including:

- U.S. Green Building Council ([www.usgbc.org](http://www.usgbc.org)).
- Building standards for energy
  - ASHRAE 90.1
  - [http://www.energycodes.gov/implement/state\\_codes/index.stm](http://www.energycodes.gov/implement/state_codes/index.stm)
- Environmental Protection Agency (<http://www.epa.gov/greenbuilding>)
- Consult the [U.S. Green Building Council’s website](#) for information regarding and determining interest in [Leadership in Energy and Environmental Design](#) (LEED®) certification.

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