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## **Greening existing buildings: Long term annuity starts today**

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The drumbeat of green initiatives is growing louder by the day. Private and public institutions alike are increasingly looking for ways to decrease the environmental impact of the buildings they own and manage.

When considering how to make a building "greener" or more sustainable, organizations often focus first on energy usage, since energy accounts for a significant portion of building operating expenses.

But the benefits of implementing energy savings measures - from lighting controls to more efficient boilers - extend beyond cost savings. Reducing energy usage with the existing building stock can deliver large-scale environmental benefits. In the U.S. alone, commercial buildings account for nearly 50% of the energy consumed and over 40% of carbon dioxide emissions reductions. Building owners and managers can also improve the sustainability of facilities through a variety of other initiatives, from employing green cleaning products to implementing water conservation measures.

At the end of the day, the many potential greening initiatives an organization can undertake compete with a myriad of other capital and operational investments - for renewing building systems, completing building renovations, and undertaking new construction. An evaluation of buildings should address sustainable practices in place today, and identify options for improving the building's sustainability and performance. By comparing the associated costs and expected impact of these initiatives, organizations can determine which investments will optimally support sustainable facilities and provide the greatest results over the short and long term.

Determining which green initiatives will provide the greatest impact - both in operational savings and environmental benefits - requires an evaluation of five key areas of building operation- energy performance, materials and construction, water conservation, indoor air quality and environment, and site sustainability.

An analysis of energy performance, including electrical and mechanical systems and renewable energy sources, should target recommended actions to reduce operating and consumption costs and decrease carbon emissions. Identifying energy savings opportunities can free up dollars to spend on other sustainability improvements such as interior retrofits that improve the quality of the environment for the occupants. Opportunities in this area often center on light quality, heating/cooling controls, enhancing use of low-emission materials, and reducing or eliminating ozone depleting gases from HVAC, refrigeration and fire suppression systems.

When embarking on a major building renovation or even a straight system replacement such as a roof, reducing landfill waste by using construction waste recycling programs and choosing building materials with the shortest distance from source to site will yield both cost and environmental savings. Water treatment, consumption and waste system conservation technologies and products are more frequently used today as the mainstream public is becoming more aware of water resource issues. Green opportunities don't stop at the walls of the building.

Organizations have opportunities for promoting a more sustainable building site by looking at ways to employ exterior lighting more effectively, alter landscaping to reduce erosion and water consumption, and reduce the overall heat footprint of the site by changing surface materials. Once a building owner has determined the long-term strategic plan for the building, whether it will undergo a major renovation or continue as occupied with no major change, greening opportunities will become clearer within the context of the future. By incorporating green into ongoing building maintenance and capital improvement programs, organizations can view greening existing buildings as an investment that begins today and a long term financial and environmental annuity.

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