nerej
CELEBRATING 55 YEARS

Optimizing energy efficiency in commercial buildings

October 25, 2012 - Green Buildings

According to the Department Of Energy's Information Administration, 47 percent of all greenhouse gas emissions in the U.S. are produced by existing buildings. Therefore, when commercial building owners and managers are seeking to increase their energy efficiency and reduce their carbon footprint, the most effective and least expensive method is optimizing the operation of the building's energy infrastructure. By focusing on superior operations and maintenance, with a focus on achieving building performance targets rather than the lowest labor costs, commercial buildings can reduce lifecycle costs, reduce their energy consumption, and reduce their greenhouse gas emissions. By taking an active role in optimizing building performance through superior operations, in addition to lighting and equipment upgrades, commercial buildings can often reduce their electricity consumption by up to 20 percent. Too often, the focus on building owners is to minimize the cost of maintenance personnel. However, merely achieving the lowest labor costs with personnel who lack the expertise to both extract the maximum value from energy infrastructure and extend the useful life of equipment is more expensive in the long run. In contrast, energy services experts can analyze a building's consumption, identify cost-saving opportunities for improvement, assume responsibility for building operations (e.g., in common areas) and then provide guaranteed energy savings. Establishing performance targets that improve upon baseline consumption is critical to optimizing energy efficiency, as improvements occur when buildings understand their usage patterns. Solutions to increase energy efficiency within commercial buildings can include sub-metering rooms and floors to identify what drives energy consumption, along with actions to reduce electricity consumption in common areas. In addition, further energy savings may be realized through outsourcing the purchase of the energy commodities. Energy-efficient buildings contain efficient equipment and systems that are properly designed and sized, and are also actively managed to optimize operating performance. Upgrades to lighting, boilers, chillers, refrigeration units, industrial processes, and compressed air systems are all important, but it is critical to couple the best available technology with the best practices in operating and maintaining the equipment. Just as we take our automobiles for regular service by specialized experts, the energy infrastructure within buildings is costly and should be operated by experts with the proven expertise to improve performance and guarantee those improvements. Rowan Sanders is director of marketing and communications of Veolia Energy North America, Boston, and is a monthly contributing Energy Efficient Solutions author for the New England Real Estate Journal's Green Building section.