REAL ESTATE WEEKLY

HVAC systems saving energy and reducing costs

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With more and more attention being paid to green technologies and green building, a heightened awareness has developed among building owners of the various benefits of building green. Going green addresses several of building owners major concerns related to maintaining their buildings; namely energy conservation, indoor air quality, building asset value and impact on the environment.

Due to the well-documented benefits of building green, building owners are increasingly turning to energy-efficient heating, ventilating and air conditioning (HVAC) systems.

The most modern HVAC system designs now provide higher energy efficiency, reduced carbon emissions, enhanced comfort and reduced first cost and operating expenses. Energy is the single largest operating expense in a typical commercial building, accounting for over $100 billion in expenses for commercial buildings each year.

Furthermore, according to the American Council for an Energy Efficient Economy (ACEEE), heating, cooling and ventilation accounts for over half of commercial buildings' energy use and costs. Therefore, energy-efficient HVAC systems offer a significant potential to reduce energy expenses.

Even minor changes in conventional HVAC design yield substantial environmental and financial results over the lifetime of a building. An example of an energy-efficient chilled-water system being used by building owners today is Trane's EarthWise[TM] Systems. In accordance with the U.S. Environmental Protection Agency's "Responsible Use" policy, this system cost effectively drives energy efficiency to its highest levels, while driving emissions to their lowest levels. EarthWise systems are good for business, with returns typically over 33%, andresponsible to the environment, with the ability to reduce millions of pounds of utility generated greenhouse gases emissions.

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EarthWise systems employ a low flow, low temperature, high efficiency design to create an energy-efficient chiller-water system.

Chilled-water systems or ice cooling systems cut energy costs by generating ice at night when energy costs are low due to lower demand.

During the daytime when the power grid is at its worst stress level, the ice melts and the cool air is used to supplement cooling.

Trane engineers installed an ice cooling system for Credit Suisse in the 1.9 million-square-foot Metropolitan Life Tower in Manhattan. Credit Suisse is now saving over $1 million each year in energy costsas a result of the system. Furthermore, the ice storage tanks have reduced carbon

dioxide output by the equivalent amount of taking 223 cars off the street or planting 1.9 million acres of trees to absorb electricity usage.

Credit Suisse also obtained about $820,000 in energy incentives from the New York State Energy Research and Development Agency since installing its chiller.

EarthWise Systems and similar HVAC systems available now use smaller pipes and pumps, which require fewer natural resources and less energy for water circulation. The colder water makes colder air, which is distributed throughout zones in smaller ducts, therefore using less energy for fan circulation and less material for the ductwork.

Energy-efficient HVAC systems essentially optimize energy use, reduce a building's carbon footprint and allow better environmental control for a more productive, comfortable workspace.

Not only does supplying less airflow at colder temperatures reduceenergy costs and use fewer natural resources, but it also increases indoor air quality.

It permits quieter operation and reduces relative humidity in the building. Comfort of occupants is very important as it affects workerproductivity and tenant retention and satisfaction. The systems alsorequire less space and smaller equipment rooms. This leaves more space for the architect to design and the owner to rent or sell.

Although building owners naturally worry about the additional costthat might be involved when installing new systems, energy-efficientHVAC systems are sometimes less expensive to install due to the reduced use of natural resources and material. Whether energy-efficient HVAC systems are installed into a new building or existing systems areupdated, they offer lower operating costs than conventional designs.

Thus, these systems are a cost-effective way to save on energy costs on a life-cycle basis. According to the U.S. Department of Energy (DOE), adopting energy-efficient design and technologies for new office buildings can cut energy costs by as much as 50% and can yield savings of up to 30% by replacing older systems in existing buildings.

In short, energy-efficient HVAC systems are a simple and effectiveway for building owners to increase financial performance, help the environment and enhance tenant satisfaction.