

# Green Elevator Upgrades Can Keep Operating Costs ‘Going Down’

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QUINCY, MASS.—Elevators don’t use a lot of energy compared to air-conditioning, heating—or even compared to computers and lighting. But when you add together all the little ways to cut energy use in a large building, the savings can add up. According to John Powers, president of [Century Elevator Co.](#), a family-owned firm based in Quincy, Mass., new elevators use a small percentage—less than 5 percent—of a building’s overall energy consumption.

Elevators more than 20 years old use motor generators that must convert AC power into DC power to move the cab. DC used to be the current needed to control leveling, acceleration, deceleration and positioning. Advances in AC technology now allow elevators to operate without the energy-consuming power conversion.

Powers notes there are still 200,000 motor generator drives in elevators across the United States. These older models use 40,000 kWh of electricity annually, some 72 percent more than modern drives. The additional energy is enough to power 80,000 homes for a year.

Another side benefit of switching to non-motor generator equipment is the decrease in required machine room cooling. Using newer technology can result in a 45 percent reduction in BTUs, a substantial savings over the building’s lifetime.

## Indoor Air Quality Issue

In addition, most DC generators use carbon brushes, which throw off carbon dust. A generator usually has 16 brushes, which in total, can emit up to 7 pounds of carbon dust per year. “Multiply this by the number of elevators and you’ve got some dangerous dust floating around your building,” Powers says.

Another way to save energy in elevators is through a regenerative drive system that recycles the electricity used to power the elevator’s movement. Here, as the cab moves up and down, a counterweight moves in the opposite direction. The electricity used to move the cab and counterweight is recycled into other parts of the elevator’s power, such as lighting. Extra energy can even be directed to other uses in the building, thus saving more electricity.

Other ways to cut energy costs when dealing with elevators: Use LED lights and program the controller to shut off the fan and lights when the unit is not in use.

## Green Upgrades Worth the Investment

“Whether you’re upgrading an older elevator or installing new units, reduced operating costs through green upgrades can outweigh capital upfront costs within a reasonable time, and more than pay for itself over the average 35-year lifespan of your elevators,” Powers says.

Not only will these energy improvements help keep rents down and make your elevators more efficient and less likely to break down; they’ll also help with tenant retention. Besides energy savings, it may even be possible to save on taxes if the building qualifies for certain green tax incentives.

Powers points to another way to show customers you care about the environment: “There are many recycled materials being used in cab interiors,” he says. “Using reclaimed metals and wood is a selling point. One of our clients is an engineering firm that promotes green technology. When we buy materials from our vendors, we specify that they be part of the ‘green system.’ That way, we go ‘up’ in our customers’ opinion—and so do they.”