



By Sasha Bailey

'Going Up' The Rise of Green Elevators

Today, more than ever before, the building and construction industries are aware of their responsibility to the environment. As green initiatives become an essential part of many building projects, several elevator companies are creating and executing long-term business plans with a goal of sustainability. These plans encompass service, maintenance and new products, and benefit stakeholders from an environmental, economic and social perspective. Sustainability is more than an emphasis on environmental issues; it is also about reducing waste, partnering with the community and giving employees tools to improve their productivity and work in the best possible conditions.

Some companies are evaluating and quantifying the current environmental impact of their products using Life Cycle Assessments (LCA), a methodology detailed by the International Organization for Standardization in *ISO 14040*. LCA, as they pertain to vertical transportation, include evaluating the manufacturing processes, energy consumption in manufacture and use, the amount and type of waste generated in all of the communities that a company operates and the transportation associated with the fleet, including shipping, installation, service calls and other needs.

Frequently, specifiers and building owners and operators ask elevator manufacturers about the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Rating System™ certification process, as it relates to elevators. Manufacturer training programs are a great way to equip sales professionals with this knowledge, and sustainability courses can be delivered across the country through Web-based seminars. Although elevators do not play a large role in the LEED rating system, the knowledge to help customers through the process and assist with paperwork is an important service.

ELEVATORS AND ENERGY

All elevators use energy. Although levels of energy efficiency may vary among them, most new elevators make up a very small percentage of a building's overall energy usage. In an average three-story building, a small capacity elevator's energy consumption is minimal. For instance, one three-stop elevator would constitute one percent to 1.25 percent of the entire building's energy consumption.

The most dramatic energy savings are captured by upgrading older

units. Upgrading from a motor generator (MG) drive to a variable voltage variable frequency (VVVF) drive on a 10-stop, 2,500-pounds-capacity elevator could save approximately 50 percent on energy consumption. Upgrading the lighting to LED and programming the controller to shut off the fan and lights when the unit is not in use are both simple and cost-effective methods of saving. Elevators become less energy efficient with age, and units that are 20- to 30-years-old drastically increase energy consumption.

Clearly, efficient elevator systems help building owners save money and reduce their overall carbon footprint. Initial expenses associated with creating a sustainable elevator range from the low-hanging fruit of minor upgrades (such as LED lighting installation) to more expensive options (such as a completely modernized system installation).

Elevator manufacturers are also considering distribution centers, especially as fuel prices continue to rise. Fleets in corporate and branch offices should be analyzed for greater driving and distribution efficiency. Some manufacturers utilize these distribution centers, which enable trucks to drop off a multiple product load to multiple centers. Filling trucks to capacity and implementing more distribution centers across the country enables companies to make larger deposits at fewer locations—which reduces travel distances, fuel emissions and costs.

DESTINATION DISPATCH

Modernizing elevator systems by installing destination-based dispatching software can create up to 35-percent more-efficient passenger transportation, yielding energy savings and improved productivity. Grouping elevators by destination improves routing, ideally enabling fewer cars to take fewer trips. A dispatching system directs passengers

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Destination-based dispatch software can reduce energy use by coordinating elevator rides

to the elevator that will get them to their destination with the shortest travel time. By grouping people together based on the floor to which they are traveling, the number of stops is reduced and the overall efficiency of the building traffic is improved. This technology can, in turn, improve the productivity of building tenants.

Systems equipped with destination dispatch systems move a larger number of people compared to units with demand-based controlling systems. Depending on the specifier's request, there is no need for buttons inside the car. Instead, passengers can use the keypad or touch screen to register what floor they are traveling to. The keypad or touch screen graphically directs each passenger to the appropriate car for his or her destination. Once the car arrives, lobby position indicators allow the passengers to see the designated stops for the elevator. This practice can reduce user wait-time up to 30 percent and increases handling capacity, which is the amount of people an elevator can transport efficiently in a set amount of time. And because these systems improve building efficiency, they can even increase overall property value.

SERVICE

Elevators that run at their peak performance will utilize less energy. One way to ensure consistent service is through a service contract for

elevator maintenance. Remote monitoring keeps an eye on service issues from anywhere in the world for the building management. This allows for better diagnostic capabilities and easier trouble-shooting. The result is optimal performance, comfort and reliability for passengers.

Communication devices inside the controller cabin are able to track service history and remotely detect problems. When a service issue arises, the monitoring center is notified and maintenance personnel make contact with building management. This reduces service

Five things to consider when selecting an elevator service contract

1. EXPERIENCE

It is essential that service professionals are knowledgeable of all new products and technology, industry standards and, most importantly, all safety precautions. Training programs that include field and local training, as well as regular factory seminars, are crucial. Field engineers should also be available at any time.

2. SERVICE

When your warranty has expired, you'll want to make sure your elevator receives exceptional preventive maintenance to ensure optimum and safe performance. This includes fast, reliable service and expertly trained technicians to protect your valuable investment.

3. PARTS

Choose a service provider that has extensive inventory of spare parts and access to a parts distribution system so they can provide quality replacement parts at a moment's notice.

4. COMPLIANCE WITH REGULATIONS

The Americans with Disabilities Act (ADA) stipulates that buildings must comply with the new requirements that make elevators easier to operate by people with disabilities. Should it be determined that your elevator is not in compliance with current regulations, your service provider should be able to provide quick, cost-effective solutions.

5. MODERNIZATION

Elevator modernization products can dramatically improve an old elevator's performance and appearance. Experienced technicians and engineers can customize a modernization package that is both time- and cost-efficient.

problems that contribute to elevator inefficiency. Remote monitoring also reduces the number of service trips, which, in turn, decreases service vehicle emissions.

GREEN CERTIFICATION AND ELEVATORS

Choosing efficient elevators is one step toward a more sustainable building. Elevators are often limited in the types of green certification points they can contribute to projects, because they are excluded from the total value of materials calculations on many credits. Therefore, having the assistance of a LEED Accredited Professional (LEED AP) on your elevator project can streamline the process and help customers avoid sometimes costly mistakes as they relate to misinterpretation of the rating system.

For example, elevators are made from steel, one of the most recycled and recyclable building materials; therefore, they are unlikely to end up in a landfill. Despite this recyclability, elevators are ineligible to contribute to points under LEED NC 2.2 credit Materials & Resources (MR) Credit 4, *Recycled Content*.

With energy consumption and costs reaching an all-time high, builders are increasingly looking for green alternatives. Whether upgrading the current system or installing new elevator technology, choosing green elevators is beneficial for building occupants, owners and the environment.

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