

SAN ANTONIO'S EMILY MORGAN HOTEL REALIZES REBATES WITH QUATTRO DRIVES MAGNETEK QUATTRO® DC ELEVATOR DRIVE



PROJECT Emily Morgan Hotel,
San Antonio, Texas

OWNER Westmont Hospitality Group

CONSULTANT Lerch Bates Inc.

OEM KONE Inc.

PRODUCT Quattro DC Elevator Drive

Challenge

- Reuse of the existing DC motor
- Improve efficiency of the elevator's energy consumption
- Deliver near unity power factor and very low harmonics
- Quantify future energy savings for utility company rebate programs
- Reuse the existing power wiring and breakers

Solution

- Provide Quattro regenerative DC drives for modernization project
- Deliver a 45% reduction in watt-hours
- Deliver a 31% reduction in peak-demand charges
- Qualify for energy rebates

Results

Magnetek, Inc. introduced the first North American commercial installation of the Quattro regenerative elevator drive at the Emily Morgan Hotel in San Antonio, Texas.

As a result of using the green technology of Magnetek's Quattro elevator drive, the Emily Morgan Hotel will realize \$16,865 in commercial energy rebates from the local utility CPS Energy as part of rebate program offered in 2007 by San Antonio City Public Services.

Quattro drives were installed as part of an elevator modernization project by KONE Inc., at the hotel that is one of the most widely recognized landmarks in downtown San Antonio.

One of the objectives of the project was to improve the efficiency of the elevator's energy consumption.

The Westmont Hospitality Group consulting with Lerch Bates & Associates chose to modernize the existing General Electric DC gearless machines with KONE's ReSolve with Unity Drive Control System with customized Quattro 200 Amp DC elevator drives.

Other energy studies indicate a savings of at least 40% compared to motor generator sets and 25% compared to DC-SCR drives because the Quattro regenerates efficiently with a near unity power factor and very low harmonics on the utility line.



Qualify for utility rebate savings – many utility companies offer for reduced peak and average power demand, and clean harmonics.

This study, with actual before-and-after energy consumption measurements taken in a side-by-side 17-day operating period during the modernization, demonstrated a 45% reduction in watt-hours, a 78% reduction in volt-amp hours, and a 31% reduction in peak-demand charges with the Magnetek Quattro drives in place.

Quattro is an optimal choice for use on large DC motors. Isolation transformers and ripple filters are unnecessary, and because of near unity power factor, there is less loading of the AC feeder lines to the elevator equipment, which eliminates the need for larger feeder wiring to the elevator.

Magnetek's Quattro allows for efficient reuse of an existing DC motor, offering additional cost savings to the Emily Morgan modernization project. The Quattro provides energy savings, lower installation costs, and superior ride quality. The regenerative and low harmonic technology of Quattro is the green solution for yesterday's, today's – and tomorrow's – buildings.

Save money through lower installation costs. There is no need to replace costly power wiring or breakers because of the near unity power factor.

QUATTRO vs M-G DC

Data for a 17-day measurement period during the modernization.

	Quattro 600 fpm (3.05 m/s) 2,500 lbs, guest car	M-G Set DC 430 fpm (2.18m/s) 2,500 lbs, service car
Numbers of runs	22,619	20,541
kWhr net	894.4	1,484.4
kVAHr total	1,110.6	5,031.6
Average number of runs per day	1,331	1,208
Average net Whr/run	39.5	72.3
Overall Power Factor	89%	30%
Average utility meter savings per run with Quattro	45%	

Separate utility metering of all elevator power to each unit was measured by a utility qualified Electro Industries SHARK-100.

Continuous daily operation included busy periods with bursts up to 130 runs per hour and significant periods of non-use.



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