Garage DCV System Case Study: South Main Senior Lifestyles, Milpitas, CA

NES FG-20 Digital System Limits Baseline Energy Consumption to Just 3% of Full-load Capacity

The Property

Located at 1620 South Main Street in Milpitas, CA, South Main Senior Lifestyles was developed by SRM Development. It consists of 199 residential living units totaling 266,000 square feet, with a below-grade parking structure measuring 61,000 square feet.

South Main Senior Lifestyles, Milpitas, CA

The Savings Opportunity

The property's garage mechanical ventilation system is powered by two, 10-horsepower (HP) motors and two, 7.5-HP motors, which run continuously (24/7) as required by California code.

Power measurements by NES show the system consumes more than 225,750 kilowatt hours (kWh) per year, with a correlating peak-period demand of nearly 26 kW. With no means of motor control in place and applying a utility rate of $0.16/kWh, property management's cost to ventilate the garage amounts to more than $36,000 annually.

The NES System Solution & Results

The South Main Senior Lifestyles garage ventilation system is not controlled by a building management system (BMS), so NES specified our FG-20 digital demand-control ventilation (DCV) system for commercial garages. The NES FG-20 is our "stand-alone" system, but it can be readily scaled to comport with building management systems with BACnet® and Modbus® communication protocols, delivering a high degree of functionality and value-added features, including Internet accessibility.

The FG-20 comes standard with a 10" Android display providing HTML graphic capabilities (its mounted in the controller cover), enabling the property manager to set and manage the system's operational parameters at the controller, with real-time views of system performance, e.g., VFD and motor speeds, individual CO sensor readings, milliamp continuity, etc.

Consumption	Without NES Controls	With NES FG System	$ Savings	% Savings
Total kWh	**225,780**	**6,773**	**219,007**	**97.0%**
Total Cost @ $0.16/kWh	**$36,125**	**$1,084**	**$35,041**	**97.0%**
Total kW Demand	**25.77**	**0.77**	**25.00**	**97.0%**

Post-installation measurements of kW consumption at the respective garage-fan motors show the NES FG-20 system is reducing the garage mechanical system's baseline of energy consumption by more than 219,000 kWh a year – a 97% savings. Peak kW demand was reduced by 25 kW, which also equates to a 97% savings. Including the cost of installation, the NES system pays for itself in just 17 months.

About Nagle Energy Solutions (NES)

Based in San Mateo, CA, Nagle Energy Solutions, LLC (www.nagle-energy.com) develops, manufactures and distributes a patent-pending DCV system for commercial garages which markedly reduces energy consumption by increasing operational.

Our sales and service capabilities extend nationally and internationally.

NES digital controllers and peripherals are scalable and conform to several building management system (BMS) and energy management system (EMS) communication platforms, as well as monitor / report on energy consumption/savings.

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