

PRINCIPAL FINANCIAL GROUP



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COMPANY PROFILE

Principal helps people and companies around the world to build, protect and advance their financial well-being with retirement, insurance and asset management expertise. With innovative ideas and real-life solutions, Principal makes financial progress possible for clients of all income and portfolio sizes. A member of the FORTUNE 500®, the Principal Financial Group has \$572.2 billion in assets under management and offices in 18 countries throughout Asia, Australia, Europe, Latin America and North America.

Principal is headquartered in Des Moines, Iowa, with about 6,000 employees working at its corporate campus and about 15,000 employees worldwide. Principal is consistently ranked as one of the best workplaces in the United States. In 2015, Principal was also named a CDP S&P 500 Climate Performance Leader for the third consecutive year and a CDP S&P 500 Climate Disclosure Leader for the second straight year.

PROJECT BACKGROUND

The Principal asked its Pollution Prevention intern to identify energy efficiency opportunities at its field office locations and benchmark the energy performance of a newly renovated corporate office in Des Moines. With this information, the intern developed recommendations to reduce energy usage and emissions and lower associated operating costs.

INCENTIVES TO CHANGE

“This company is guided by a strong sense of social responsibility,” says Dan Houston, chief executive officer at The Principal. “It drives us to do the right things for each of our stakeholders. And it translates into a deep commitment to protecting the environment, through conservation of resources, recycling and other sustainability initiatives.” The Principal strives to be a leader in sustainability by reducing carbon emissions and water usage and by increasing solid waste recycling.

RESULTS

The intern conducted energy audits at several of the company’s field offices and at the corporate campus. The compiled data was used to develop cost-effective recommendations for increasing energy efficiency at the facilities.



PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
WEST DES MOINES LED RETROFIT	\$719	10,202 kWh	IMPLEMENTED
CEDAR RAPIDS DE-LAMP	\$2,213	18,438 kWh	RECOMMENDED
VENDING MACHINE CONTROLS	\$6,489	115,259 kWh	IN PROGRESS
HVAC STATIC PRESSURE RESET	\$21,672	192,474 kWh	IN PROGRESS
AIR HANDLING UNIT SETPOINT CORRECTION	\$2,404	42,698 kWh	IMPLEMENTED
CAMPUS LIGHTING SCHEDULES	\$54,952	969,663 kWh	RECOMMENDED

West Des Moines LED Retrofit: Many employee common areas at the West Des Moines field office location were lit with fluorescent 32 Watt, T-8 light fixtures. These fixtures were retrofitted with 12-Watt LED tubes to reduce their power draw by more than 60 percent and generate a competitive financial payback. The project proved to have a competitive return-on-investment and is under consideration to be implemented at other field office locations.

Cedar Rapids De-Lamp: The Cedar Rapids field office also uses 32 Watt, T8 fixtures. The office space was lit well above the recommended levels set by American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards. Available rebates for LED bulbs were not enough to make a retrofit cost-effective at this office location; however, by removing the middle lamp of the existing fixtures, the office can reduce energy consumption while still maintaining ASHRAE recommended lighting intensity.

Vending Machine Controls: Vending machine controls use motion sensors to optimize the amount of power used by the machine lighting and cooling systems. Control systems were tested on vending machines at field offices and on the corporate campus, and were found to reduce energy consumption of the machines by 38 percent. The intern recommends installing the controls on all refrigerated vending machines at the corporate campus and all field office locations.

HVAC Static Pressure Reset: The Heating, Ventilation and Air Conditioning (HVAC) system at 750 Park, The Principal’s newly renovated office building, modulates the static pressure of the system based on building air demand. Controlled by variable air volume (VAV) boxes, the higher the static pressure is set to support increased air demand, the more energy the system consumes. The intern identified areas where VAV boxes were

incorrectly allowing the main air handling units to consistently operate at the maximum static pressure. Creating a dashboard of VAV operating scenarios within the building automations system will enable monitoring and investigation of maximum static pressure instances and eliminate unnecessary energy consumption.

Air Handling Unit Setpoint Correction: A setpoint for discharge air temperature on one of the supplemental air handler units was flipped, causing the discharge air temperature to always be at its minimum. The problem was fixed and the discharge air temperature began to modulate as designed, which resulted in immediate energy savings.

Campus Lighting Schedules: Most of the lighting controls on the corporate campus are set to pre-programmed ON/OFF hours. By adding manual override switches to the buildings, the programmed schedules could be shortened and lights could be overridden if employees are still working in the space.

