

## CASE STUDY

Kaiser Permanente Distribution Center, Northern California

# Lighting Retrofit Cuts Energy Costs and Improves Lighting Quality at Kaiser Permanente

With large spaces occupied for only brief periods each day, project managers at Kaiser Permanente's Northern California Distribution Center knew that a lighting and controls upgrade would bring substantial energy savings.

Not only did lights remain on throughout the day in the 300,000 square foot warehouse, the light fixtures were also inefficient and provided poor illumination.

Kaiser decided to implement a comprehensive project that would save both on energy costs and improve lighting quality.

Robert Ofsevit of Alamo Lighting, who oversaw the upgrade, had previous success specifying The Watt Stopper's products. He knew that using occupancy sensors to complement new energy efficient T5HO high bays would produce the best results. Occupancy sensors keep lights off during times of vacancy, and the new fixtures use energy more efficiently while also improving lighting quality.

After a feasibility study, Ofsevit estimated that with a retrofit, the facility could see 22% in total site kWh savings and a 72% savings in lighting kWh. He also predicted a net simple payback of 2.14 years and a net ROI of 48%.

Alamo, and its union subcontractor Seagate Electric, installed 630 of The Watt Stopper's occupancy sensors: 45 CX-105-4 PIR sensors for nar-

row aisleway entries and 585 CI-205-1 360° PIR sensors for wide aisles and open areas. The sensors signal lights on immediately when someone enters an aisleway.

To ensure more accurate coverage, installers masked the sensors at aisleway entries; when someone drives by in a forklift or walks near an aisleway, but does not enter it, lights do not trigger on.

In addition to the sensors, the project replaced over 700 HID fixtures with T5HO fluorescent high bays that consume only 234 watts (the previous lights used 458 watts).

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***- Mary-Clare Caruthers  
Facility Services Manager  
Kaiser Permanente***

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Completed ahead of schedule in the summer of 2003, the project took ten weeks to install. The savings in the months following the retrofit surpassed estimates. Mary-Clare Caruthers, Facility Services Manager at Kaiser, said, "We are particularly pleased to see the drastic drop in energy consumption to date."

The large central records section of the warehouse, which sees the least amount of activity, logged the greatest energy savings. On average, people only occupy the aisles for one hour per day. So in a two-shift, 17 hour work day, the rack aisle lights remain



off for approximately 16 hours – before the retrofit, these were kept on throughout the day.

Ofsevit stated, "This upgrade garnered the highest energy savings that I have seen in a warehouse project."

In addition to saving on energy costs, Kaiser received a \$60,000 utility rebate from PG&E's Standard Performance Contract program.

Employee satisfaction with the project is high. Workers even noted how much cooler the temperatures are in the higher areas of the warehouse where the lights are off most of the day, making it more comfortable to work.

With user acceptance high and savings exceeding projections, Kaiser managers are very happy with the results, and with the new lighting and Watt Stopper sensor installation.

*Kaiser Permanente, America's largest not-for profit health care organization, serves 8.2 million members in nine states and the District of Columbia.*