CASE STUDY

Lighting Load Reductions – Cost Savings of $575K/Year

OVERVIEW

Through an internal auditing program, Six Sigma, Staples Canada asked all departments to identify potential areas for further reductions in ongoing operating costs. The Staples Energy Committee (SEC) submitted our proposal for lighting load reductions and it was accepted by the Six Sigma Lead as an actionable project.

GENERAL SCOPE OF PROJECT

It was determined that substantial savings could be gained by reducing specific lighting loads within the Staples locations that have Building Automation Systems (BAS). At the time that the program was initiated, Staples Canada had 235 such locations at which lighting schedule changes could be implemented. Each location already had schedules established for certain levels of lighting such as “Unoccupied (closed)”, “Employee” and “Customer (Open)”, but it was determined that these schedules could be tightened further in an effort to reduce electric usage and increase overall cost savings.

ACTION TAKEN

1. Employee Lighting: This load is generally ½ lights prior to store opening while staff arrive and after closing before staff leave for the day. The load was reduced at each store by 3.5hrs/week on average.
2. Customer Lighting: This load is full lighting during normal business hours. Generally most Retailers have these lights come on slightly before opening and remain on for a period of time after the store closes. The load was reduced at each store on an average of 6hrs/week. Staples Administration made the decision to only have these lights come on 5 minutes before opening and remain on for only 5 minutes after store closing.
3. Occupancy Connections: For optimum performance, all BAS locations should have the system linked to the security keypad so that lighting schedules are all activated or deactivated based on when the security system is armed at night or disarmed in the morning. This would then minimize the amount of time that excess lighting is on while no one is within the store. Upon investigation, 80 stores were identified as having connection issues and these were repaired.

RESULTS

Once the lighting load project was selected, the supporting documentation was collected and assessed over the next 3 months. Based on the original calculations that were verified & approved through the Six Sigma Program, each store would save on average $2448/year. This would then equate to $575,280/year for all 235 stores with BAS installed.

CONCLUSION

The results of this project have been overwhelming. Normally one would not think that such little changes could add up to much, but when you are looking at implementing these changes on a National basis across a large number of locations, the savings begin to snowball.

By leaving these schedule changes in place moving forward, Staples Canada continues to reap the rewards. They have reduced both their usage and costs as well as avoided future increases in operational costs should utility rates rise. Added to this, Staples Canada can also be proud of the fact they continue to reduce their carbon footprint on the environment. The project has reduced Greenhouse Gas Emissions by 4065.5 Metric Tons annually which is equivalent to 846 passenger vehicles off the road, or the energy needed to power 564 homes for a year. **Are you doing your part to help the environment and saving money at the same time? Contact us and let Powerhouse help you gain peace of mind.**

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