Case Study

A Small Business Retrofit

simuwatt® provides investment decisions to a small building owner

simuwatt®

INTRODUCTION

Small building owners, who represent over 90% of commercial building holders[1], have an opportunity to leverage energy efficient retrofits that reduce energy expenses by 30-45%.[2] These reductions to operating expenses in turn increase property value by 10-13%[3]. The path to implementation, however, is unclear, complex, and can commonly be costly. Often lacking resources and budget to investigate opportunities, these owners lean on contractors and utilities that provide limited guidance on implementation.

simuwatt® was recently used by a small building owner to overcome these barriers at a newly purchased property. simuwatt found an immediate lighting upgrade opportunity to reduce annual operating costs by $3,193 and increase the property value by an estimated $42,567 with a payback of 3.19 years. simuwatt was also able to identify valuable recommendations on future HVAC and weatherization improvements that could provide an additional $2,500 annual savings - a $33,000 value.

A RETROFIT CHALLENGE

A small business owner recently purchased a 6,500 sq.ft. office building from the 1900s to house business operations. Prior to move-in, the owner planned to invest in a facelift to the outdated property, including the replacement of buzzing T-12 light fixtures. However, the seemingly simple process of identifying cost effective lighting upgrade options was a challenge with a wide array of solutions on the market and no guidance.

Lacking facility staff and budget to hire a high-cost engineering firm, the building owner sought support from the local utility that offered a free energy audit program. The utility's assessment contained unrealistic results suggesting a lighting upgrade that would save more than their current cost of electricity, making the building net-zero, with an unlikely project payback of 1-2 years.

The utility recommended fixture types but did not specify brands or products. "I'm not an expert in lighting design.", stated the owner, "With limited guidance by the utility, I spent countless hours researching product options and going back-and-forth with the utility to verify what qualified."

Hurdles to a Small Building Retrofit

- Small building owners needed education.
- Products marketed to professionals not owners.
- Contractors lacked knowledge.
- Hiring expert engineering firm was cost prohibitive.
- Utility assessment unrealistic, missed opportunities and no actionable guidance.
- Lengthy 3 month process.

[1] *Commercial Buildings Energy Consumption Survey (CBECS).* U.S. Energy Information Administration, 2012. Small buildings are under 50,000 sq.ft.
[2] *Small Buildings = Big Opportunity for Energy Savings.* U.S. Department of Energy, 2013.
[3] *Rocky Mountain Institute, 2015.*

SOLUTIONS WITH SIMUWATT

With simuwatt, the building owner quickly assessed lighting operations at their property using mobile tablet solutions and analyzed different products with more accurate savings predictions based on tenant use. simuwatt not only identified a qualified lighting solution but an opportunity to reduce costly overlighting missed by the utility. This translated to the owner purchasing products that consumed 35% less energy than the products recommended by the utility.

The resulting retrofit is expected to reduce annual energy and maintenance operating costs by $3,193 with a 3.19 year payback. Assuming a capitalization rate of 7.5%, the operating savings is valued at $42,567.

"simuwatt enabled me to choose the best products for my building ensuring we maximize our energy savings."

- Building Owner

Image - Before and after photos of the lighting upgrade.

FUTURE IMPROVEMENT OPPORTUNITIES

In addition to lighting, the building owner used simuwatt to identify other energy saving opportunities that were not captured by the utility in their energy assessment. The majority of the building's heating and cooling equipment is nearing end-of-life and the old structure is drafty, which presents an opportunity to further reduce operating costs. Replacing HVAC equipment with heat pumps, adding outside air reset controls, and weatherization could reduce annual utility costs by up to an additional $2,500. Assuming the same capitalization rate of 7.5%, the operating savings translates to just over a $33,000 value.

CONCLUSIONS

With simuwatt, the small building owner received clarity on opportunities to reduce energy use both in the short-term and long-term at a low cost. They uncovered an immediate lighting upgrade opportunity to reduce annual operating costs by $3,193 and increase the property value by an estimated $42,567 with a payback of 3.19 years. simuwatt also identified valuable recommendations on future HVAC and weatherization improvements that could provide an additional $2,500 annual savings - a $33,000 property value.

Uncover savings with simuwatt today. Contact us - inquiries@simuwatt.com