



BOMA BC Case Studies: Energy & Environment Series

Developed by BOMA BC's Energy & Environmental Committee



From Energy Benchmarking to Conservation Projects

“To reduce the building’s electricity consumption, the operations team regularly reviews operating trends to proactively identify and address any operational issues. By making smart and timely upgrades in our existing buildings we reduce environmental impacts and improve efficiency. Through recoverable costs and utilizing incentives, these improvements are often achieved with little costs incurred by building owners.”

-Dr. James Gray-Donald

Executive Summary

It’s clear that benchmarking the energy intensity of buildings gives an organization a strategic advantage over those who don’t benchmark. By benchmarking your real-estate portfolio you increase your organization’s ability to strategically manage the energy consumption of buildings. And by comparing a building’s current performance to its own past performance, and the performance of comparable buildings, an owner or manager will be better informed on how to manage and improve the energy efficiency of their facilities and subsequently have the ability to strategically reduce energy consumption and greenhouse gas emissions across a

portfolio, increase marketability of rentable space, increase asset value, and gain the ability to manage risk when developing properties. In a study completed on one of Bentall Kennedy’s building complexes –Cliveden Centre and Cliveden Place, an eight building complex with 810,930 ft² of combined gross leasable area- they were able to measure the impact that benchmarking had on the management of the complex and have been able to show a significant reduction in energy consumption.

Key Team Members

The key team members for implementing a building energy benchmarking initiative are the: building management team (e.g., Building Operators, Property Manager, accounting department), benchmarking software (e.g., Energy Star Portfolio Manager, Energy Management Information System), service providers (e.g., electricians, consultants) and utilities (when incentives apply to project).

Key steps

To reduce the building's electricity consumption, the operations team regularly reviews operating trends to proactively identify and address any operational issues.

1. Select a professional (in-house/external)
2. Meet regularly with internal departments (e.g., accounting, engineering) to collect and review building and energy information
3. Select your method of benchmarking (e.g., Portfolio Manager, energy tracking software) and input/update the required information
4. Analyze consumption patterns for anomalies or periods of high usage
5. Set targets for reducing energy usage
6. Identify ways to reduce these increased periods of consumption (e.g., technology upgrades)
7. Identify utility incentives available for project
8. Implement conservation project
9. Monitor consumption, compare to targets and take any corrective actions necessary

Barriers

There are a few key barriers an organization may face when benchmarking their facility and moving to implementing a conservation project, they are listed below:

Cost can be an issue as resources are needed in the form of a professional (internal/external) to collect, input/update, and analyze the benchmarking information. Depending on the benchmarking software used there can be cost associated with set up and updating. And of course there are potential costs associated with implementing a conservation project (e.g., electricians, consultants, products).

Capacity and knowledge can also pose a barrier if, for example, an organization doesn't have enough staff or if their staff doesn't have the necessary skill set to perform the benchmarking duties (e.g., collect information, benchmark building, analyze information, identify and implement projects, monitor success) or

interpret the benchmark results. Many buildings have the added problem of not having access to the full building's utility information (e.g., anchor tenant is unwilling to share with landlord). The analysis aspect of benchmarking can be particularly difficult as there are numerous factors that can influence energy consumption (e.g., occupancy, outside temperature) and identifying the key factors can be complex. Having a knowledgeable professional is critical to sort through this information. The implementation of the project also brings barriers, selecting qualified contractors, appropriate products, determining budget and timelines with competing priorities is no small feat.

Summary of Results

By monitoring the operating trends of the buildings in the complex, the management team was able to implement strategic conservation projects (e.g., upgrading lighting to LED) and monitor their actual savings, which were a massive 35% reduction in electricity consumption compared to the previous year which represented a 31% savings in electricity costs. These improvements not only improve energy efficiency and reduce operational costs, they can also improve building certification scores (e.g., BOMA BEST®) and align operations with corporate sustainability objectives.

Conclusion

Benchmarking buildings energy information can highlight both the low performing buildings that require attention and assistance, and the high performing buildings that should be recognized and rewarded for their efforts. Today we are seeing many organizations implementing benchmarking as part of a management program, and these organizations are seeing the tangible results. Bentall Kennedy is one such organization that has fully embraced benchmarking and has benchmarked 100% of their portfolio demonstrating their commitment to the strategic practice.