



BC Building Performance Study

Hotel Sector

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British Columbia's existing buildings account for two-thirds of all energy consumed in the Province and 41% of the Province's total GHG emissions. Recognizing the significant role that buildings play in meeting the Province's efforts to address climate change, energy, and water consumption and waste generation, this study sought to evaluate the performance of buildings in British Columbia and provide special consideration to the potential impact of third-party rating systems on achieving public policy objectives.

The Building Performance study reviewed energy, water and waste data for 281 buildings from across the Province, including 147 BOMA BEST certified buildings and 134 non-certified buildings which included retail, office, multi-unit residential, warehouses, and hotels.

"This study validates what we suspected internally. It's worth certifying not only our new buildings, but we are now considering all our existing buildings."

- Jonathan Meads, Sustainability Manager,
Concert Properties

In cooperation with Tourism Vancouver the study was able to attain data from 19 hotels in the lower mainland and compare their performance in terms of energy and water use against a number of metrics such as national averages, size, number of floors, occupancy, age and number of rooms.

Key findings from the hotels included:

- Hotels displayed a large variation in energy and water consumption by age, size, number of rooms and number of floors.
- Poor performing hotels used 20 times more water per room and 4 times more energy.
- The energy only utility cost to operate hotels in the study ranged \$8 / m² year to \$38 / m² year; nearly a five times difference.
- Older hotels can perform as well as newer hotels; however this could have a lot to do with the type/class of hotel and not simply the age.
- In order to truly normalize hotel data; information such as size and number of swimming pools and hot tubs, in house laundry and restaurants is necessary.

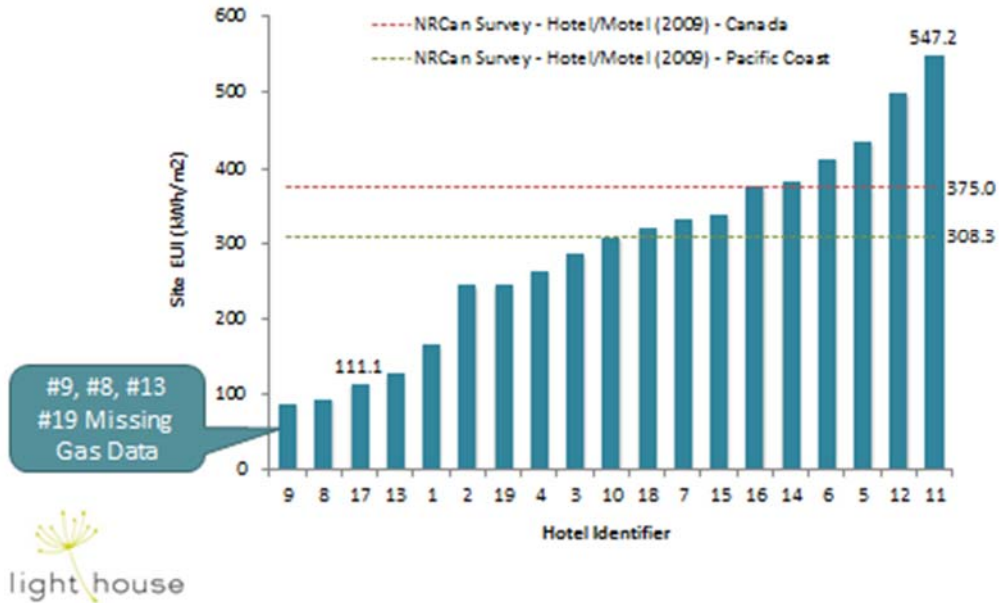
As a hotel owner information like this helps to make informed decisions. Knowing where you stand compared to other similar hotels and how you are performing compared to your own benchmark allows you to allocate resources to increase building performance and to further study and understand poor performance.

"There are now over 8400 Hotels Benchmarking their energy and water performance using Energy Star Portfolio Manager in the United States. We now have great opportunity here in Canada."

- Gwendal Castellán, Energy Specialist, Tourism Vancouver

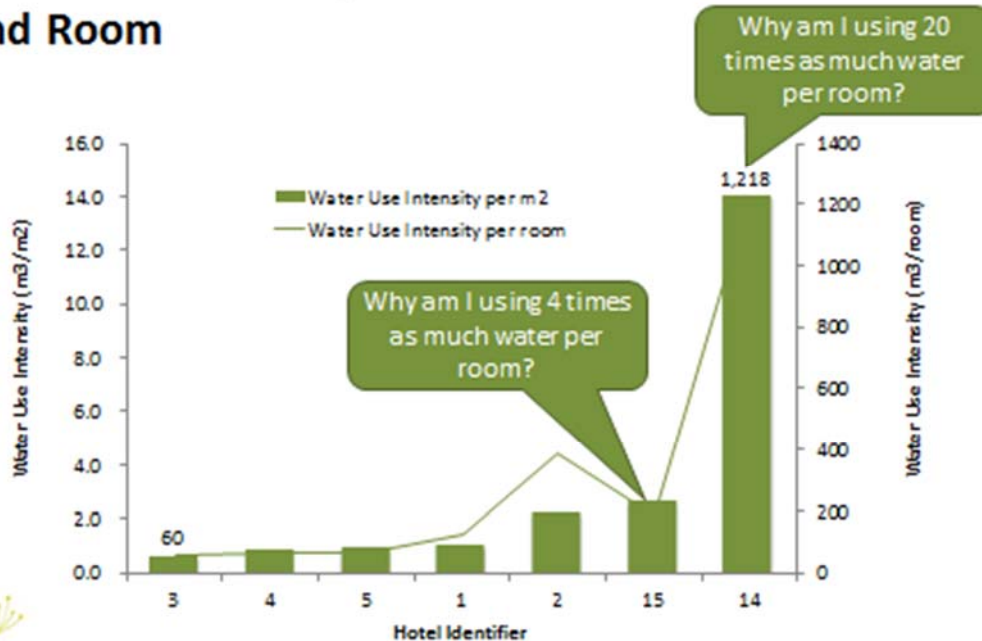
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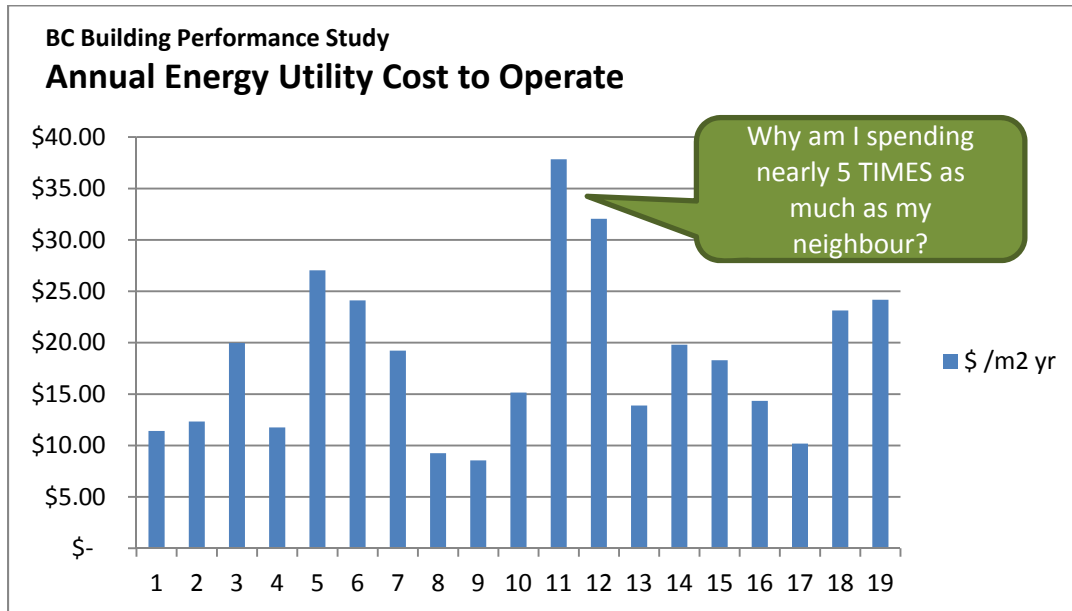
EUI of 19 Hotels versus National Averages



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Water Use Intensity versus Hotel Size and Room





Hotel Facts and Figures

- The average site energy use intensity (EUI) for all hotels in the study was 1.05 GJ/m² per year (292 ekWh/m²/yr), 5% lower than the NRCan benchmark for hotels along the Pacific Coast and 22% lower than the NRCan benchmark for hotels in Canada. The top 25th percentile had an average EUI of 0.727 GJ/m² per year (202 kWh/m²/yr) compared with 1.35 GJ/m² per year (375 kWh/m²/yr) for the bottom quartile.
- The average energy utility cost for all hotels in the study was \$18 / m² year.
- The average water use intensity of all hotels in the study was 1.37 m³/m²/yr, with the bottom quartile of buildings exhibiting values exceeding 2.45 m³/m²/yr.
- There was not a statistically relevant difference in performance between newer and older hotels.

BOMA BEST Certification

While there is not a direct BOMA BEST Certification for Hotels, the recommended pathway to certification is to follow BOMA BEST for MURBs. A few highlights from the study found that:

- BOMA BEST office buildings that recertified showed a 25% improvement in energy use intensity (EUI) over buildings that had only

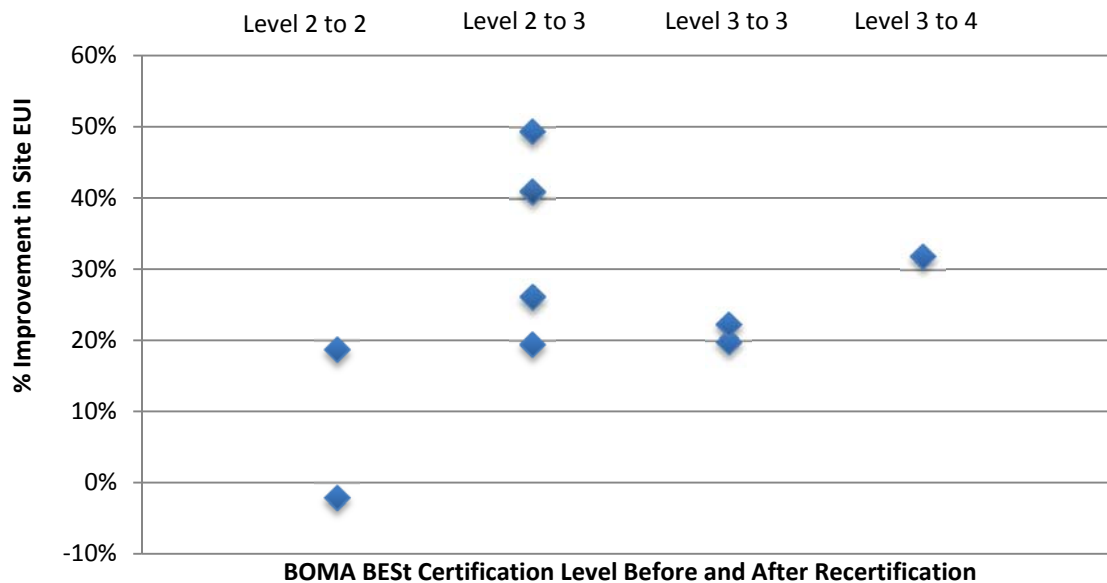
gone through the original certification process. Similarly, recertified buildings achieved a 30% reduction in annual building water usage per square meter of space and an average increase of 8% in diverted waste. Recertification occurs on a three year basis. These savings are quite substantial for a three year period and many facility managers would jump at a 25% energy reduction opportunity.

- BOMA BEST attracts all types of buildings and performers and is a useful tool not just for high performing buildings but is being used by many lower performing buildings as a means to start benchmarking environmental performance and work towards continual environmental improvement.

With respect to BOMA BEST, it must be stressed that certification is based on pre-certification data and serves as an exercise in benchmarking a building. First-time certification is not an indicator of performance improvement, but rather a tool to help building owners and manager's benchmark and work towards continual improvements in environmental performance.

The study's findings indicate that there is significant room for improvement in most aspects of building performance across all building types. Findings also indicate that the act of recertifying is strongly associated with improvements in building performance.

Percentage Improvement in EUI Among BOMA BEST Buildings that Recertified



Recommendations for Hotel Owners

1. Are you an \$8/m² or a \$38/m² dollar hotel? In order to figure this out you need to benchmark your hotel for energy and water usage and look at metrics like: area, occupancy, number of rooms, number of floors and if possible also take into consideration amenities like pools, hot tubs and restaurants.
2. Energy Star Portfolio Manager¹, a free benchmarking tool, is supported by Natural Resources Canada and now available for Canadian Buildings.
3. BOMA BEST is a useful tool for tracking your performance over time with respect to environmental and sustainability indicators. Hotels can certify under the MURB program.

For more information and for the complete report please refer to <http://www.sustainablebuildingcentre.com/building-performance/>.

To participate in the next round of the Building Performance Study 2014 or for more information on BOMA BEST certification, please email: [Curtis\(at\)lhsbc.com](mailto:Curtis(at)lhsbc.com).

¹ (<http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>)



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