**E1.0a & E1.0b Walkthrough Energy and Carbon Assessment Template**

**Baseline Practice**: E1.0ab – Energy and Carbon Assessment

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| ***Instructions to complete the template for your Energy Assessment***  *All grey italic text with borders are instructions to help you prepare the required BEST Practice for your building.*   1. *Replace all* [blue text in brackets] *in the document with building-specific information.* 2. *Where required, complete the necessary tasks, or engage a third-party consultant to complete the tasks so that you are able to fill the relevant sections of the template with building specific information.* 3. *BOMA also permits “in-house” technical staff to complete the assessment.* 4. *Additional Resources can be found here:*   [ASHRAE Level I Audit](https://www.techstreet.com/ashrae/standards/ashrae-211-2018?product_id=2016437) [Energy Star Carbon Emissions](https://portfoliomanager.energystar.gov/pdf/reference/Emissions.pdf) [Carbon Risk Real Estate Monitor (CRREM) Global Pathways](https://www.crrem.org/)   1. *Delete all grey italic text when you have filled all relevant sections with building specific information.* 2. *Complete the Checklist below to confirm your Energy Assessment meets the Baseline Practice requirements.* |

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| ***Checklist***  *The Energy Assessment report must contain the following elements:*  *An ASHRAE Level 1 Energy Assessment and Carbon Emissions Assessment must have been conducted on the building in the last five (5) years.*  *Analysis of energy consumption through monthly utility bill review and benchmarking. For benchmarking purposes utility bills must cover a minimum of 12 months of continuous data.*  *Analysis of greenhouse gas inventory or carbon for each carbon source. For benchmarking purposes a minimum of 12 months of continuous data must be covered (preferred 24-36 months).*  *List major energy-consuming equipment.*  *Prioritized list of proposed low-cost and no cost energy conserving measures (ECMs) and carbon reduction measures (CRMs) to enable greater energy efficiency and minimize carbon emissions.*  *Provision of estimates of financial savings the building owner will realize as a result of investing in ECMs and CRMs. At a minimum, savings and cost estimates should be based on a generalized understanding of the systems.* | |
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**ENERGY and CARBON ASSESSMENT**

[Insert Building Name and / or Address]

[Insert Name of Organization]

[insert Building Description – number of floors, tenants, parking spaces (underground or surface) and other distinguishing features. If tenant scenario, indicate which areas are within building owner’s/landlord’s control]

[Specify which floor area is being used, e.g. gross floor area, net floor area, gross leasable area, etc.]

[Insert date of Energy Assessment]

# Executive Summary

[Insert Key Findings]

Refer to the attached **Appendix A** for Energy and Carbon Assessment completed by [Insert Name and Organization of person who completed the Energy Assessment].

*Summarize the key findings or pertinent points from the Energy and Carbon Assessment, such as the total amount of energy consumed by the building per year, the GHG Inventory, and the estimated energy and carbon that may be reduced if all energy conservation measures and carbon reduction measures identified were implemented (with estimated implementation / savings costs).*

# Energy-use and Carbon Emission Analysis

[Briefly outline the 12-month consumption data, the building’s energy use intensity, GHG Inventory and how your building’s performance compares to other similar buildings.]

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| *Request your third-party consultant or “in-house” technical staff to:*   * *Review energy bills including cost and consumption history (utility bills must cover a minimum of 12 months of continuous data) and gain insight on how the major building operating systems and equipment use energy and the associated carbon emissions.* * *Calculate the building’s energy use intensity or EUI (i.e., annual energy use divided by building area) to obtain a building performance index such as GJ/m²/yr or ekWh/ft²/yr for each energy source.* * *Calculate the building’s carbon emissions (kg/MBtu, g/L, or kg/tonne) for each fuel type (direct and indirect).*   *Compare your building’s EUI and GHG Inventory to* [*similar buildings*](https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/Canadian%20National%20Median%20Tables-EN-Aug2018-7.pdf)*.* |
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# Energy-using equipment inventory

[Insert inventory of major energy-using equipment and lighting systems in the building.]

*Prepare an inventory of major energy-using equipment and type of lighting systems in your building, covering the following aspects:*

* *Boiler plant systems*
* *Building envelope*
* *Compressed air systems*
* *Domestic and process hot water systems*
* *Fan and pump systems*
* *Heating, ventilation, and air-conditioning systems*
* *Lighting systems*
* *Process furnaces, dryers, and kilns*
* *Refrigeration systems*
* *Steam and condensate systems*

*Describe the energy sources that serve these pieces of equipment. Assess if there is opportunity for energy conservation/carbon reduction.*

# Recommended Energy Conservation Measures (ECMs) and Carbon Reduction Measures (CRMs):

Refer to the attached **Appendix B** that shows the Energy Conservation Measures (ECMs) and Carbon Reduction Measures (CRMs) identified and basic estimates of financial savings the building owner may realize because of investing in ECMs/CRMs.

# Conclusion

[Insert recommended next steps and closing statements. Sign and date document.]

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[Insert name and signature of person responsible for conducting the Energy Assessment]

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[Insert Date the Energy Assessment was completed]

Appendix A: Energy and Carbon Assessment

*Attach the most recent Energy and Carbon Assessment completed by the third-party consultant or “in-house” technical staff of the building. These assessments are valid for five (5) years.*

Appendix B: Energy Conservation Measures/Carbon Reduction Measures and Financial Savings Estimate

*Insert a prioritized list of the retrofit and operation and maintenance energy conservation measures (ECMs)/Carbon Reduction Measures (CRMs) identified. Explore the possibility of installing sub-meters for large energy-using tenants to better grasp the energy used by these groups.*

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| **Potential Energy Conservation Measure** | **Estimated Implementation Cost ($)** | **Estimated Incentive Amount** (if applicable) **($)** | **Estimated Net Capital Cost ($)** | **Estimated Annual Energy Use Savings** (ekWh/yr) | **Estimated Annual Cost Savings ($)** | **Estimated Payback Period (Years)** | **Notes** |
| *Example: Lighting Retrofit* | *$10,000* | *n/a* | *$10,000* | *100,000* | *$2,650* | *3.8* |  |
| [Add for your building] | [Add] | [Add] | [Add] | [Add] | [Add] | [Add] | [Add] |
| [Add for your building] | [Add] | [Add] | [Add] | [Add] | [Add] | [Add] | [Add] |