



PART 3 ENERGY DESIGN REPORT

General Guidance and Tip Sheet

Version 1: December 1, 2020

GENERAL GUIDANCE

The Part 3 Energy Design Report is a voluntary Excel-based tool that can be used by energy modellers and design professionals as a checklist and submitted to local government authorities to verify compliance with the BC Energy Step Code. The tool gives industry and local authorities a consistent way to gather and review modelled energy performance characteristics of Part 3 Step Code buildings at both the pre-construction and as-built stages.

Detailed instructions are contained in the Excel file: There is no separate instruction manual. This General Guidance and Tip Sheet is meant as a quick reference only.

Tip – If you can't see a cell completely in the Report, **zoom in to make it larger**.

Tip - The Report can be unlocked with no password; remember to **re-lock it to avoid unintentionally changing formulas**.

Alignment with BCBC Versions: The Part 3 Report can be used with *any* version of the BC Energy Step Code (which itself forms part of the BC Building Code).

- **Tip** – This is unlike the Part 9 Energy Compliance Report, where the version you use must match the version and revision of the BC Building Code you are using.

Always use the most recent version. The Report is updated regularly. Visit <https://energystepcode.ca/compliance-tools-part3/> to download the latest version.

Application: The Part 3 Energy Design Report is for buildings containing major occupancies that are required to comply with Subsection 10.2.3. of the BC Building Code and is not to be used for buildings that do not contain Step Code occupancies. It is intended to capture the requirements of Articles 2.2.2.1. and 2.2.9.2. of Division C of the BC Building Code, as well as local government bylaw requirements for energy use and emissions reductions in buildings. Portions of the building subject to Clause 10.2.2.1.(1)(a) or (b) of Division B of the BC Building Code are also to be included in the report.

Tip – Not all sections of the Report apply to all buildings, so read the instructions carefully. The Report may be used for any of the development review stages of larger buildings:

- Pre-Application or Application
- Rezoning Application
- Development Permit
- Building Permit
- Occupancy Permit

Tip – To demonstrate compliance with the BC Energy Step Code, information must be submitted at

- The Building Permit stage, showing the 'As Designed' results.
- The Occupancy Permit stage, showing the 'As Built' results.
- Authorities Having Jurisdiction (AHJs) may request the report at other development review stages. Using the same report for different stages makes it easier for those who prepare the reports and those who review them.



TIPS

The tips in the rest of this document are based on the webinar training held in July and August 2020. Visit <https://energystepcode.ca/compliance-tools-part3/> for a recorded version of the training.

Tips about Sections of the Report

These tips are listed by Report section and relate to a specific entry. The row numbers provided are based on version 2.2, issued August 31, 2020. Depending on the version you are using, the rows may differ.

Section	Entry	Row	Tips
A	Applicable version of BCBC	12	Include both the version of the BCBC and the revision number.
B	Total Annual Energy Use (kWh)	29	For Step 1 projects, this energy consumption represents the Reference energy usage (the Design must be less than this).
	Annual Thermal Energy Demand (kWh)	30	Enter in kWh and TEDI (kWh/m ²) will be calculated for you.
C	TEUI/ TEDI required values	38-41	These need to be entered by the user; they are not automatically calculated.
E	DES and Other Emissions Factors	66-67	If a low-carbon energy system (or other fuel type) is used, enter emissions factors here to be used throughout the Report.
	Annual Thermal Energy Demand for Step Code Occupancies & Whole Building (kWh)	75-76	Enter in kWh and TEDI (kWh/m ²) will be calculated for you. The entry for row 75 is based on the Vancouver Energy Modelling Guidelines version 2, section 5.1(e).
	Suite-level Metering for Space Heating	90	If required, enter heating energy before 15% adjustment is applied.
F	Modelled above-ground vertical/ façade surface area (m ²)	94	Include opaque and glazed areas.
	Average wall “clear field” and effective R-values	100	Provide for above-grade walls.
	Average Suite Occupancy Density and Suite Ventilation Rate	104-105	Use suite floor area.
	Heating/ Cooling/ DHW System Types	109-111	If exact scenario is not available, choose the best option for your building and add notes in comments.



Question and Answer Tips for Energy Modellers

#	Question	Answer
1	Are targets adjusted by HDD automatically?	No.
2	Do we need to meet ASHRAE mandatory requirements with Step Code projects?	No, per Step Code.
3	Is it up to the modeller whether to include the parapet psi value into the effective wall or roof R-Value?	Yes, see Building Envelope Thermal Bridging Guide.
4	Why is the "ATT Target" different from the "Modelled Infiltration Rate"?	Calculated at different pressures; see City of Vancouver Energy Modelling Guidelines version 2.
5	In a mixed-use building, does the baseline portion also have to comply with TEDI requirements? Or is it only the Step Code portion and Whole-Building?	Only Step Code and Whole Building.
6	Is the 75 Pa air leakage measured at 75 Pa pressurized or depressurized pressure?	Use the average of the two, per BCBC which references ASTM testing requirements and USACE Version 3.
7	In the mixed-use building example, the spreadsheet calculated an average TEUI and TEDI of the two use targets. What was the purpose of this?	This is per City of Vancouver Energy Modelling Guidelines version 2, section 5.
8	I had a question about the mixed use TEDI and TEUI targets. The spreadsheet made a blended target. Is the blended target the actual target for the whole building?	Yes
11	Is there a line in the report to add low carbon energy systems as some municipalities will introduce 2 options to meet Step Code (i.e., Part 3 Residential Step 4 or Step 2 with low carbon energy system)?	Yes, the emissions factors can be added in Section E and then are used throughout the worksheet.
12	If the form is for the Step Code, why are there references to ASHRAE 90.1 performance requirements? As there are no entries associated with the energy *costs*, how is compliance shown with the ECB or Appendix G methods?	ASHRAE 90.1-2016 (or NECB 2015) could be used as a baseline in non-step code major occupancies. Cost entries are not used in the report, rather TEDI and TEUI values are pulled from the cost-based model. Given complexities with the use of Appendix G, most modelers will choose to use the ECB method.

Question and Answer Tips for Local Governments

#	Question	Answer
1	When dealing with SFDs that fall under Part 3 of BCBC, would it be practical to utilize this compliance form still or would it be more practical to utilize the Part 9 forms?	If a single-family home falls under Part 3, then it would need to comply with Part 10 requirements and the Part 9 reports would not apply.
2	How is the "Modelled Floor Area" calculated, including interior and exterior walls or excluding exterior walls?	Per City of Vancouver Energy Modelling Guidelines Version 2 (different from Passive House)