

Energy Step Code & Zero Carbon Step Code

OVERVIEW

The purpose of this guide is to identify the BC Building Code's (BCBC) and City of Nanaimo Building Bylaw requirements related to the Energy Step Code and the Zero Carbon Step Code; addressing typical questions that may arise.

Note: Definitions of Part 9 and Part 3 buildings can be found in the BC Building Code under Division A Subsection 1.3.3.

WHAT IS THE ENERGY STEP CODE?

The Energy Step Code is a performance-based energy efficiency approach that requires a building's designed performance be evaluated through whole-building energy modelling and on-site airtightness testing to assess if the building's design and construction meets performance targets for the desired 'Step' of the BC Energy Step Code. To meet the required standard, builders will need to work closely with a qualified Energy Advisor to determine the best implementation for their project.

Achieving higher steps of the Energy Step Code provides energy-efficiency benefits, such as lower energy consumption and reduced energy bills. As well, energy-efficient buildings are better able to manage temperature, reduce noise while allowing fresh air in, and improve comfort and health for occupants.

Implementation of the Energy Step Code

The BC Energy Step Code was originally an optional performance-based compliance path in the BC Building Code. A phased Energy Step Code was first adopted in the City of Nanaimo's Building Bylaw in 2019-OCT-21. Phasing of the steps was designed to give builders time to familiarize themselves with the new requirements.

The BC Building Code was amended in 2023-MAY-01 to require most new buildings comply with new minimum energy efficiency requirements of the Energy Step Code. Step 3 in Subsection 9.36.6. Energy Step Code is the minimum Step Code for Part 9 buildings. Step 2 in Article 10.2.3.3. is the minimum Step Code for Part 3 buildings.

The Nanaimo Building Bylaw was amended on 2024-JUL-01 to require an increased Energy Step Code level (Step 3) for Part 3 buildings applied for after 2026-JAN-01.

WHAT IS THE ZERO CARBON STEP CODE?

The Zero Carbon Step Code provides a new tool for our community to switch from carbon-intensive mechanical systems to zero carbon systems. To meet the required standard, builders will need to work closely with their qualified Energy Advisor to determine the best implementation for their project.

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WHAT IS THE ZERO CARBON STEP CODE? (cont'd)

Implementation of the Zero Carbon Step Code

The Zero Carbon Step Code was adopted into the Building Bylaw by City Council 2023-OCT-16. The Bylaw change required the immediate implementation of Greenhouse Gas (GHG) Emissions Level-1. The first level (EL-1) of the Zero Carbon Step Code only required measurement of a building's emissions. As of 2024-JUL-01, all applicable buildings must meet the performance requirements specified in the Greenhouse Gas Emissions Level-4 of the BC Building Code. Compliance calculations are included in the Energy & Carbon Step Code Compliance Checklist for Part 9 buildings and for Part 3 buildings.

WHAT BUILDINGS DO THE ENERGY STEP CODE APPLY TO?

The Energy Step Code applies to any new Part 3 buildings and any Part 9 building or structure to which the BCBC applies and is within the scope of application of the Energy Step Code, as described in the BCBC. This includes:

- Part 9 residential buildings: detached homes, laneway homes (carriage homes), multi-plexes, row housing and low-rise apartments. Although the Energy Step Code applies to additions and renovations of Part 9 buildings, these codes were developed for new buildings. Requiring an Energy Advisor and report in these situations may not be practical. Large additions and extensive renovations will be reviewed on a case by case basis.
- Part 3 residential buildings, hotels/motels, public sector buildings, mercantile buildings, and buildings of business and personal services.
- Building projects where the development permit process results in a density trade-off that includes higher levels of the Step Code than required by the Building Bylaw.

WHAT BUILDINGS DO THE ZERO CARBON STEP CODE APPLY TO?

The Zero Carbon Step Code applies to any new Part 3 building, and any Part 9 new building, or structure to which the BCBC applies and is within the scope of application of the Zero Carbon Step Code. This includes:

- Part 9 residential buildings: detached homes with or without a secondary suite, laneway homes (carriage homes), multi-plexes, row housing and low-rise apartments.
- Part 3 residential buildings, mercantile buildings, and buildings of business and personal services.

WHAT ENERGY & ZERO CARBON STEP CODES ARE ADOPTED IN THE BUILDING BYLAW REQUIRING MORE THAN THE BC BUILDING CODE MINIMUM?

Step 3 of the Energy Step Code will apply to Part 3 building permits applied for after 2026-JAN-01.

Level 4 of the Zero Carbon Step Code applies to Part 9 residential building permits and Part 3 building permits.

WHAT SPECIFIC DOCUMENTATION IS REQUIRED FOR ENERGY & ZERO CARBON STEP CODE COMPLIANCE?

Part 9 - Residential Buildings

Building Permit Applications:

- Drawings with building characteristics consistent between the drawings and Energy and Zero Carbon Step Code compliance checklist/report.
- [Pre-Construction Energy and Zero Carbon Step Code Compliance Checklist](#).
- Model summary for the reference house and pre-build (as-designed) house.

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WHAT SPECIFIC DOCUMENTATION IS REQUIRED FOR ENERGY & ZERO CARBON STEP CODE COMPLIANCE? (cont'd)

Part 9 - Residential Buildings

Issuance of Occupancy Certificate:

- [As-Built Energy and Zero Carbon Step Code Compliance Checklist](#)

Part 3 - Residential, Hotels/Motels, Public Sector, Business, Personal Services, Mercantile Buildings, Assembly

Building Permit Applications:

- Drawings with building characteristics consistent between the drawings and Energy and Zero Carbon Step Code compliance report.
- [Energy & Zero Carbon Step Code Part 3 Buildings Energy Design Checklist \(Pre-Construction Stage\)](#) by a qualified Energy Modeller, i.e. either a Building Envelope Consultant or Building Scientist. This report is not required to be sealed.
- Energy Model Report sealed by an Architect or an Engineer acting as a supporting consultant to the Architect. The Architect or Engineer sealing the report must have expertise as an Energy Modelling Supervisor or a qualified Energy Modeller.

The Energy Reports must comply with the requirements as detailed in the 2024 BCBC under Division C 2.2.9. Drawings, Specifications and Calculations.

Issuance of Occupancy Certificate:

- [Energy & Zero Carbon Step Code Part 3 Buildings Energy Design Checklist \(As-Built Stage\)](#) by a qualified Energy Modeller i.e. a Building Envelope Consultant or Building Scientist. This report is not required to be sealed.
- Energy Model Report sealed by an Architect or an Engineer acting as a supporting consultant to the Architect. The Architect or Engineer sealing the report must have expertise as an Energy Modelling Supervisor or a qualified Energy Modeller.
- Letters of Assurance Schedule C-A and C-Bs.

WHAT CLIMATE ZONE DOES NANAIMO USE?

Based on the posted Government of Canada climate data for Nanaimo, Building Inspections has identified Climate Zone 4 as the appropriate zone for the purpose of British Columbia Building Code-related requirements.

Energy Advisors should use the appropriate degree days from the National Research Council's [HOT2000 Climate Map](#) when completing the BC Energy Compliance Reports.

Energy Modellers for Part 3 buildings should use the Canadian Weather year for Energy Calculation (CWEC) as per the City of Vancouver Energy Modelling Guidelines.

WHAT IS AN ENERGY ADVISOR AND WHAT DO THEY DO?

Energy Advisors conduct performance evaluations under a Natural Resources Canada (NRCan)-licensed service organization and must be registered and in good standing with Natural Resources Canada in accordance with the EnerGuide Rating System Administrative Procedures and adhere to the technical standards and procedures of the EnerGuide Rating System.

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WHAT IS AN ENERGY ADVISOR AND WHAT DO THEY DO? (cont'd)

An Energy Advisor reviews plans, models energy consumption, and conducts airtightness testing to verify the plans and as-built home comply with the energy performance requirements of a given energy step and carbon level.

HOW DO I FIND AN ENERGY ADVISOR?

A list of Energy Advisors can be found on the [CleanBC Better Homes](#) website under the menu Self-serve resources, "[Find an Energy Advisor](#)". Please note, your Energy Advisor must have a valid business licence to operate in Nanaimo.

HOW CAN I MAKE SURE MY BUILDING WILL MEET THE AIRTIGHTNESS REQUIREMENTS?

A mid-construction blower door test is recommended, but not required.

ARE THERE INCENTIVES AND/OR REBATES?

A list of rebate programs can be found at the [CleanBC Better Homes](#) website under "[New to CleanBC rebates](#)". CleanBC Better Homes is BC's online hub for homeowners and businesses to access information, rebates, and find support to reduce energy use and greenhouse gas emissions in new and existing homes and buildings. Also see "[Home Energy Efficiency Rebates](#)" for City of Nanaimo rebates and supporting information.

Density incentives exist through the development permit process for developments reaching a higher level of the Energy Step Code than required under the City of Nanaimo Building Bylaw. More information is outlined in "[Schedule D](#)" in the Zoning Bylaw 4500.

WHERE CAN I GET MORE INFORMATION ABOUT THE ENERGY & ZERO CARBON STEP CODE?

To assist builders, designers, and the public, the Building and Safety Standards Branch & the Government of British Columbia have produced a number of Information Bulletins explaining the details of the compliance paths for Part 9 buildings:

[Compliance Tools for Part 9 Buildings](#)

The Building and Safety Standards Branch has developed a standardized form for energy compliance for Part 3 buildings. This tool offers 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.

[Compliance Tools for Part 3 Buildings](#)

[City of Vancouver Energy Modelling Guidelines](#)

[AIBC & EGBC's Joint Professional Practice Guidelines for Whole Building Energy Modelling Services](#)

If you have any questions or require clarification, please contact Building Inspections at 250-755-4429.

This guide should not be used as a substitute for existing building codes and other regulations.

The building owner is responsible for compliance with all codes, bylaws, and other regulations.