

ZERO CARBON STEP CODE

Information Bulletin for Applicants and Energy Advisors





- District of Saanich Council adopted the Zero Carbon Step Code on April 24, 2023.
- The requirements came into effect starting May 1, 2023.

What is the Zero Carbon Step Code?

The BC Zero Carbon Step Code is a new regulation introduced as part of the BC Building Code updates that limits greenhouse gas (GHG) emissions from new construction. It forms part of the 2022 BC Building Code update that came into effect on May 1, 2023.

Similar to the BC Energy Step Code, the Zero Carbon Step Code will be available for municipalities to opt into and for them to adopt an accelerated implementation timeline.

The Zero Carbon Step Code has four levels:

-  **Measure-only (GHG Emission Level 1)** - requires measurement of a building's emissions without reductions;
-  **Moderate carbon (GHG Emission Level 2)** - in most cases, will require electrification of either space heating or domestic hot water systems;
-  **Strong carbon (GHG Emission Level 3)** - in most cases, will require electrification of both space heating and domestic hot water systems; and
-  **Zero Carbon (GHG Emission Level 4)** - in most cases, will require the full electrification of a building.

For a building to meet the Zero Carbon standard, most will use electricity for all building systems (dependent upon design). The District of Saanich does not recognize Renewable Natural Gas (RNG) for compliance.

In practice the Zero Carbon Step Code uses a GHG intensity (GHGi) and total GHG emission maximums to achieve the stated intent of each threshold.

How does this relate to the BC Energy Step Code?

The BC Energy Step Code regulates the energy efficiency of new buildings, whereas the Zero Carbon Step Code directly regulates their GHG emissions.

Saanich adopted the Energy Step Code in 2019. However, as of May 1, 2023, Saanich is now aligned with the provincial minimum energy efficiency requirements related to the BC Energy Step Code.

As with Step Code, it is recommended that applicants and design teams familiarize themselves with the requirements of the Zero Carbon Step Code early in the development and design process.

What requirements did Saanich adopt and how does this affect my project?

- **All Applicable Buildings**
 - › Building permits applied for on or after **May 1, 2023** must be designed and constructed to meet or exceed **GHG Emission Level 1 (Measure Only)**
- **Part 9 Buildings**
 - › Building permits applied for on or after **November 1, 2023** must be designed and constructed to meet or exceed **GHG Emission Level 4 (Zero Carbon)**.
- **Part 3 Multi-unit Residential Buildings containing 6 storeys or fewer of residential occupancy**
 - › Building permits applied for on or after **July 1, 2024** must be designed and constructed to meet or exceed **GHG Emission Level 4 (Zero Carbon)**.
- **All Part 3 Buildings**
 - › Building permits applied for on or after **November 1, 2024** must be designed and constructed to meet or exceed **GHG Emission Level 4 (Zero Carbon)**.
- **Labelling**
 - › Prior to receiving an occupancy permit, an electronic copy of either an EnerGuide Rating System label, a Passive House Certificate or a standard comparable energy label acceptable to the District of Saanich should be:
 - Submitted in hard copy alongside the As Built Compliance Checklist to Saanich Building Inspections; and
 - Emailed to energyreports@saanich.ca
 - › The electronic EnerGuide label produced on completion of the HOT2000 model is acceptable in order to reduce wait time for an official label to be received from Natural Resources Canada (NRCAN).
 - › Please add the Program identifier "DOS" into "INFO Field 2" for all electronic files created using the HOT2000 software.

How do I demonstrate compliance?

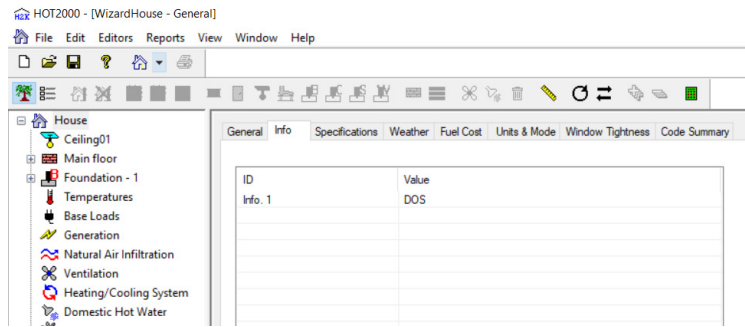
A builder must demonstrate to local building officials that their design and the constructed building meet the Zero Carbon Standard requirements. This is done by submitting a completed Pre-Construction and As-Built Compliance Report/Checklist (Part 9) or Energy Design Report (Part 3), available here: energystepcode.ca.

See next page for detailed compliance requirements.

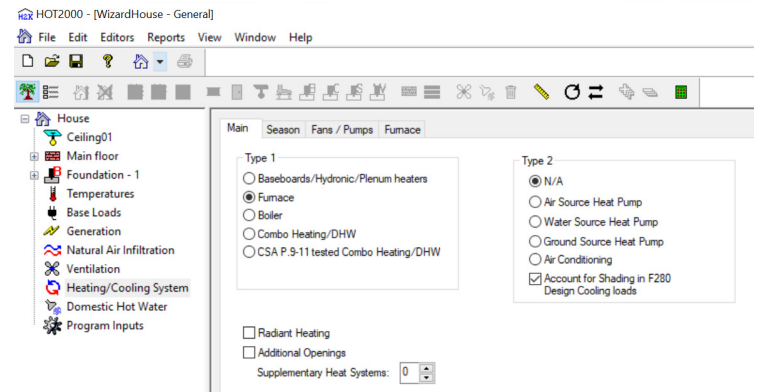
How do I demonstrate compliance? (continued)

Part 9 Compliance Checklist Submission

Applicants must add 'DOS' i.e. District of Saanich as a code identifier for all ERS HOT2000 Models as shown below:



- For example, where projects propose a heat pump with a fossil fuel backup system, the fossil fuel system must be modelled as primary and the heat pump excluded from the model (e.g. select 'N/A' for Type 2 systems as shown below).



Pre-Construction Stage

At time of building permit application submission:

- A copy of the Part 9 Pre-Construction Step Code Checklist Form should be:
 - Submitted to Building Inspections with the building permit application as a hard copy; and
 - Emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 9 Pre-construction Checklist_123 First Street_01_23".
- An electronic copy of the whole BC Step Code Part 9 Compliance Checklist Microsoft Excel Workbook should be emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 9 Pre-construction Workbook_123 First Street_01_23".

As-Built Stage

Prior to building occupancy:

- A copy of the Part 9 As-Built Step Code Checklist Form should be:
 - Submitted to Building Inspections as a hard copy; and
 - Emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 9 As-Built Checklist_123 First Street_01_23".
- An electronic copy of the whole BC Step Code Part 9 Compliance Checklist Microsoft Excel Workbook should be emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 9 As-Built Workbook_123 First Street_01_23".

Fireplaces

- Due to a limitation with HOT2000, applicants must identify the number of fireplaces being installed and input 7.5 Gigajoules (GJ) per year, per fireplace, directly into the BC Step Code Part 9 Compliance Checklist (both Pre-Construction and As-Built) as follows:
 - On the 'Calculator' Tab, applicants must add:
 - The sum of GJ per year for all fireplaces in the 'Other' cell (Column AQ) based upon 7.5 GJ per year per fireplace; and
 - The emissions factor for the fuel used for those fireplaces in the 'Other GHG Emissions Factor' cell (Column AF).
 - On the 'Pre Con Checklist' Tab, applicants must add the number of fireplaces and the fuel used for those fireplaces into the 'Other' cell (Row 100).
 - On the 'As Built Checklist' Tab, applicants must add the number of fireplaces and the fuel used for those fireplaces into the 'Other' cell (Row 99).

Use of Fossil Fuels

- On the 'Pre Con Checklist' Tab of the Part 9 Step Code Checklist, applicants must identify which appliances use fossil fuels and which fossil fuels are used for those appliances in the 'Fossil Fuels' cell (Row 103).
- On the 'As Built Checklist' Tab of the Part 9 Step Code Checklist, applicants must identify if the building uses any fossil fuels from a drop-down menu in the 'Fossil Fuels' cell (Row 101) as follows:
 - The applicant must identify that either 'The building including all units has **NO fossil fuel use or infrastructure**' or 'The building has fossil fuel use or infrastructure.' 'Unable to verify fossil fuel use' will not be an accepted answer.
 - If the building has a natural gas connection (even if used only for non modelled appliances) please identify 'The building has **fossil fuel use or infrastructure**'.

Part 9 Compliance Checklist and HOT2000 Model Inputs

Primary Heating System

- Due to a limitation with HOT2000, applicants must model the highest-emitting system as the primary heating system and use the estimated annual fuel consumption summary to calculate the GHGi and potential GHG emissions.



Part 3 Compliance

Energy Star Portfolio Manager

ENERGY STAR Portfolio Manager (ESPM) is an online tool developed by the U.S. Environmental Protection Agency (EPA) that helps organizations and businesses track and assess their energy and water consumption, and GHG emissions. It allows users to input data about their buildings, such as square footage, occupancy, and utility bills, and then calculates various energy and water metrics.

By using ENERGY STAR Portfolio Manager, organizations can gain insights into their energy usage, identify areas for improvement, set goals, and track their progress over time. The tool helps businesses and building owners make informed decisions regarding energy management and sustainability initiatives and benchmark their building's performance against similar buildings.

- Prior to occupancy, applicants must connect the project to the District of Saanich's (District_of_Saanich-Part_3_ESPM) Energy Star Portfolio Manager account as a "read only" user with the "Share forward" permission enabled. The applicant must fill out "Basic Property Information" and "the property use details" – as shown in the diagram below.
- When the applicant has shared the ESPM account the applicant must send an email containing the "Portfolio Manager ID" to energyreports@saanich.ca to confirm that the building has been registered and the District has been added as a read-only user.

ESPM Account

- Create a new ESPM account if the company doesn't have one

Add District of Saanich as a Contact

- In the "Add Contact" section, search for "District_of_Saanich-Part_3_ESPM" in the "username" field. Searching for "District of Saanich" will also work

Create the New Building

- Create the new property to represent the building that requires an Occupancy permit
- Record the Portfolio Manager ID

Share New Building

- Use ESPM to share the building with "share forward" permission granted
- Provide the District with the Portfolio Manager ID

Transfer Property

- Transfer new ESPM building to new owner where applicable - instructions are available online here: <https://energystar.my.site.com/PortfolioManager/s/article/How-do-I-transfer-properties-to-another-user-1600088534403>

Part 3 Compliance Checklist Submission

Pre-Construction Stage

At time of building permit application submission:

- A copy of the Part 3 Step Code Design Checklist Summary Form should be:
 - › Submitted to Building Inspections with the building permit application as a hard copy; and
 - › Emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 3 Pre-construction Design Checklist_123 First Street_01_23".
- An electronic copy of the whole BC Step Code Part 3 Compliance Checklist Microsoft Excel Workbook should be emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 3 Pre-construction Design Checklist_123 First Street_01_23".

As-Built Stage

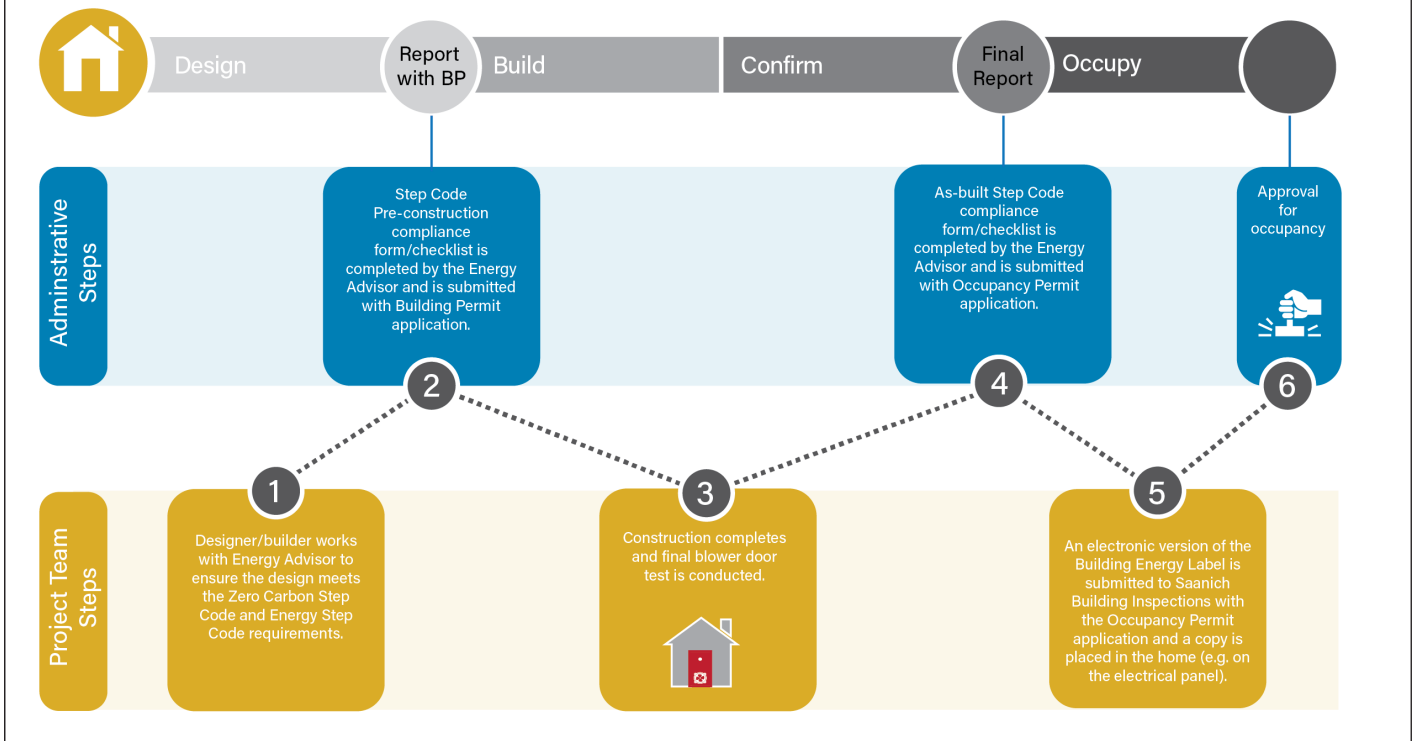
Prior to building occupancy:

- A copy of the Part 3 Step Code Design Checklist Summary Form should be:
 - › Submitted to Building Inspections as a hard copy; and
 - › Emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 3 As-Built Design Summary Checklist_123 First Street_01_23".
- An electronic copy of the whole BC Step Code Part 3 Compliance Checklist Microsoft Excel Workbook should be emailed to energyreports@saanich.ca. Please use naming convention "File_description_Street number and name_MM_YY" e.g. "Part 3 As-Built Design Checklist_123 First Street_01_23".

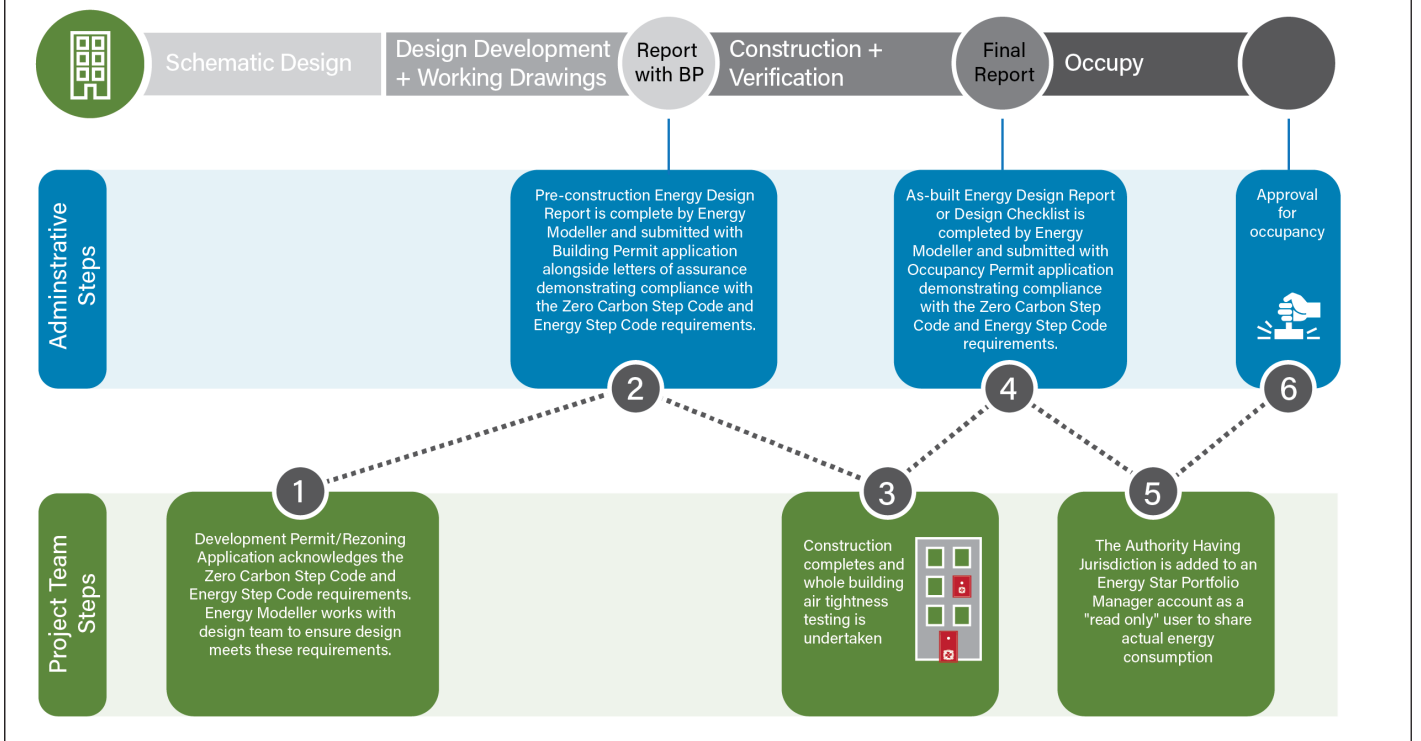
Use of Fossil Fuels

- On the Part 3 Energy Checklist tab of the Part 3 Step Code Checklist, applicants must identify which appliances use fossil fuels and which fossil fuels are used for those appliances in the "Heating System Description" cell (Row 162) and "DHW System Description" cell (Row 166).

Process for Part 9 Projects (e.g., single family homes, duplexes, townhouses)



Process for Part 3 Projects (e.g., multi-unit residential, large commercial office)



Need more info?

For information and resources on the BC Energy Step Code and Zero Carbon Step Code visit saanich.ca/stepcode and energystepcode.ca.

For questions regarding Saanich's implementation of the Zero Carbon Step Code please contact planning@saanich.ca or 250-475-5471.

