This bulletin is to provide Owners, Applicants, Contractors, and Builders with the requirements and future targets of the BC Energy Step Code for new Part 3 buildings.

Summary

- New buildings are to be designed and constructed to the energy efficiency targets set out in the BC Energy Step Code.
- All permit applications for new Part 3 buildings are subject to the Energy Step Code.

What the BC Energy Step Code?

The BC Energy Step Code is an energy efficiency compliance path in the BC Building Code that sets out energy and airtightness performance targets for new developments to meet. The Energy Step Code requires new buildings to meet performance targets, rather than setting out detailed specifications for construction details. These standards have been set to encourage the construction of energy efficient and airtight buildings, making all new buildings net zero ready by 2032. Energy software modelling and on-site testing is used to demonstrate that both the building design and the constructed building meet the Energy Step Code standards.

The BC Energy Step Code is organized into a series of progressively more stringent “Steps”. Over time, the City of Richmond plans to incrementally enhance building requirements to the highest levels of the BC Energy Step Code. The Province is also expected to increase the stringency of base BC Building Code requirements over time so that all new construction is required to achieve a “net-zero energy ready” performance level by 2032.

What is “net-zero ready”?

Net-zero energy ready is a term used to describe buildings that have been designed and built to a level of energy efficiency performance such that it could, with the addition of solar panels or other renewable energy sources, achieve net-zero energy performance.

For more information on the BC Energy Step Code overview for Part 9 buildings, please refer to bulletin Building-37.
## Current Requirements
The table below outlines Richmond’s BC Energy Step Code requirements for Part 3 buildings.

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Building Permit Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group C: Residential – Greater than 6 stories or non-combustible construction (not including hotels and motels)</td>
<td>Step 3 OR Step 2 with a low carbon building energy system (see below)</td>
</tr>
<tr>
<td>Group C: Residential – 6 stories or less with combustible construction (not including hotels and motels)</td>
<td>Step 3</td>
</tr>
<tr>
<td>Group D: Businesses and personal services</td>
<td>Step 2</td>
</tr>
<tr>
<td>Group E: Mercantile occupancies</td>
<td>Step 2</td>
</tr>
</tbody>
</table>

### Low Carbon Building Energy Systems
For Part 3 buildings with Group C residential occupancies and non-combustible construction, projects may be constructed to Step 2 if a “low carbon building energy system” is implemented. A “low carbon building energy system” means a building’s space heating, cooling, and domestic hot water heating mechanical system is supplied with energy through either:
- A connection to a city owned district energy utility system; or
- An on-site energy supply equipment designed to meet a minimum 70% of the building’s annual heating, cooling, and domestic hot water energy demand from a renewable energy source, as approved by the City’s Director of Engineering. The building’s energy system must be designed and constructed such that it is ready to connect to a future City owned district energy utility system.

Applicable renewable energy source technologies include, but are not limited to, air and ground source heat pump systems, waste heat recovery systems, solar collectors or other systems as approved by the City’s Director of Engineering.

### Effective Date
New BC Energy Step Code requirements apply to all Building Permit applications except for the following:
- If a Development Permit has been issued prior to September 1, 2018, the owner may, while their Development Permit remains valid, apply for a Building Permit in compliance with the energy efficiency requirements applicable prior to the adoption of the BC Energy Step Code Implementation; or
- If a Development Permit application has been submitted to the City prior to July 16, 2018, the owner may until December 31, 2019, submit a Building Permit application in compliance with the energy efficiency requirements prior to the adoption of the BC Energy Step Code Implementation.

### Potential Future Requirements
The City of Richmond’s Official Community Plan features the following table, including an estimated timetable for future consideration of higher Steps of the BC Energy Step Code as requirements in the City. Builders, Developers, and Designers are encouraged to consider these potential future requirements.

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Current Requirement</th>
<th>Timetable for Future Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>January 2022</td>
</tr>
<tr>
<td></td>
<td></td>
<td>January 2025</td>
</tr>
<tr>
<td>Residential Concrete Towers</td>
<td><strong>Step 3 OR Step 2 with a low carbon building energy system</strong></td>
<td>Step 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Step 4</td>
</tr>
<tr>
<td>Residential Low/Mid-Rise</td>
<td><strong>Step 3</strong></td>
<td>Step 4</td>
</tr>
<tr>
<td>Office &amp; Retail Buildings</td>
<td><strong>Step 2</strong></td>
<td>Step 3</td>
</tr>
</tbody>
</table>

See attached ➔
Rezoning Application and Development Approvals

As part of both Rezoning and Development applications, applicants are expected to conduct energy modelling and provide a statement to the City that their proposed design is able to meet the requirements of BC Energy Step Code that will be in place at the time of their Building Permit application. This statement must be submitted prior to City Council’s consideration of the project’s rezoning, and prior to consideration of the project by the Development Permit Panel.

Building Approvals

Applicants must submit the proper Letters of Assurance as part of the Building Permit application, and prior to occupancy, assuring that the project substantially complies with the City’s Energy Step Code requirements. In addition, the following documents must be completed and submitted to energyreports@richmond.ca at the Building Permit application stage:

1. Both the “Energy Design Report” and “Supplementary Information” tabs of the Energy Design Report for the BC Energy Step Code for Part 3 Buildings (Pre-Construction), completed by a Registered Professional who is either a Qualified Modeller (QM) or overseeing a QM in the role of Energy Modelling Supervisor (EMS), as per the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services. The Registered Professional must include their Registration/License number after their name on both tabs.

2. The energy model report for each building, signed by the Registered Professional acting as the QM or EMS on the project. The City may contact the Registered Professional to submit the associated model files for auditing purposes.

3. Plan drawings clearly showing all energy efficiency upgrades (eg. wall assemblies including the type of air barrier).

The Registered Professionals of Record (RPRs) for the architectural, mechanical, plumbing, ad electrical disciplines each have specific responsibilities to energy efficiency requirements under the BC Energy Step Code. The City will not accept Letters of Assurances (Schedule B) if the BC Energy Step Code section has been crossed out.

Prior to occupancy, the applicant must create an Energy Star Portfolio Manager profile of the building(s) (see: bchydro.com/powersmart/business/resources/energy-efficiency-benchmarking.html). To support implementation of future benchmarking reporting requirements, applicants may share the property profile with the City of Richmond as a “Read Only” permission level.

All Energy Step Code reports along with any supporting documents specified in this bulletin must be submitted to energyreports@richmond.ca with the site address and report title in the email subject (eg. “6911 No 3 Rd – Pre-construction Report”)

References

- AIBC and EGBC’s Joint Professional Practice Guidelines for Whole Building Energy Modelling Services
- BC Energy Compliance Report: As Built energystepcode.ca/compliance-tools-part9
- BC Energy Compliance Report: Mid-Construction energystepcode.ca/compliance-tools-part9/#verification
- BC Energy Compliance Report: Pre-Construction energystepcode.ca/for-industry
- BC Energy Step Code energystepcode.ca/
- City of Richmond Official Community Plan

Should you have any questions or comments concerning this bulletin, please contact the City of Richmond’s Sustainability Department via the main City phone line 604-276-4000.