

## Section 11 Green Building Regulations [2017-36]

### 11.1 Purpose

The purpose of these Green Building Regulations is to encourage development that is more environmentally sustainable than is achievable through traditional building practices.

Buildings constructed with green design principles have a number of benefits:

- a. energy and water consumption reduced in building operation,
- b. fewer greenhouse gasses and other pollutants generated by construction materials and building operation,
- c. quantity of materials used is reduced,
- d. durable materials increase lifespan of structure,
- e. less waste is produced through associated manufacturing and construction practices, and
- f. construction waste is recycled.

Typically, green buildings result in a higher quality product, cost less to operate, are more adaptable to new uses, are healthier for their occupants, and have longer economic lives.

### 11.2 Guiding Principles for Green Building Regulations

- 11.2.0.1 Flexibility: the applicant is provided with options for meeting the Town's Green Building targets.
- 11.2.0.2 Fairness: requirements for constructing more efficient and environmentally friendly buildings apply to all applicants, from the biggest developers to individuals building their own homes.
- 11.2.0.3 Accountability: verification for quality of construction is required to ensure that all applications are held to an equal standard.
- 11.2.0.4 Timeliness: Green Building Regulations are not intended to add significantly to the permitting, inspection and occupancy procedure.

### 11.3 Definitions

For the purposes of these Regulations, the following definitions shall apply:

**Applicant** refers to any property owner, developer or builder undertaking a development that includes construction of a new building in Canmore that is large enough to necessitate a Building Permit, initiating the Green Building Procedure.

**Built Green Canada** refers to the programs operated by the Built Green Society of Canada "to promote 'green' building practices to reduce the impact building has on the environment". (Source: [builtgreencanada.ca](http://builtgreencanada.ca))

**Can-Quest** is a Canadian adaptation of the eQuest building energy simulation software used

in the USA, which includes such additions as Canadian weather data and metric measurement units. It allows builders to model whole-building energy performance (building envelope; lighting; heating, ventilation and air conditioning systems; service water heating; and electrical power systems and motors). It is used to help design and demonstrate compliance for commercial and institutional buildings using the performance path under the National Energy Code for Buildings.

**Certified Energy Advisor** is an individual who conducts EnerGuide home evaluations through service organizations licensed by Natural Resources Canada.

*(Information: Energy advisors provide third party expert advice to homeowners looking to improve the energy efficiency of their new homes and can also work with builders who wish to use the EnerGuide Rating System in the planning and design stages of their new constructions. Energy advisors help ensure homes labelled under Natural Resources Canada's energy efficiency housing initiatives meet the requirements of the standard.)*

**EnerGuide** is "the official mark of the Government of Canada for its energy performance rating and labeling program for key consumer items—houses, light-duty vehicles, and certain energy-using products." (Source: nrcan.gc.ca)

**EnerGuide Rating System for Homes** refers to the program operated by Natural Resources Canada to measure a home's energy performance as evaluated and certified by a Certified Energy Advisor. It is a consumptive-based rating, measured in gigajoules per year (GJ/year).

*(Information: "The energy advisor will measure and collect data about all of the elements of your home that impact its energy performance and then enter that data into an energy simulation software program that calculates your home's EnerGuide rating. The data collected includes: the level of your home's airtightness, using a blower door test; the insulation levels of your walls, ceilings and basement; the number, type and location of all windows and exterior doors; the size and efficiency ratings of your space heating, space cooling (air conditioning) and water heating equipment; information about any ventilation equipment; and any other information relevant to your home's energy performance." (Source: nrcan.gc.ca))*

**Enhanced Green Construction** means construction that results in a building that exceeds the Town's Green Building energy targets.

**Green Building** means a building that exceeds standard construction practices in terms of energy consumption by meeting the Town's targets as set out in this section. Preferably, the building would also exceed standard construction practices in terms of reduced material use and water consumption, reduced greenhouse gas production, and use of healthier and more environmentally friendly materials.

**LEED** refers to the various Leadership in Energy and Environmental Design programs operated by the Canada Green Building Council. Examples are LEED for New Construction and LEED for Homes.

**Reference House** means the theoretical reference value (house) that is uniquely created through the EnerGuide Rating System to show the gigajoule per year rating a house would achieve if it was built to meet typical new home energy performance construction

requirements.

## **11.4 Applicability**

- 11.4.0.1 All new buildings constructed in Canmore that will have floor areas exceeding 10m<sup>2</sup> (107.6 sq ft) are subject to these Regulations, with the exception of accessory buildings and accessory dwelling units.
- 11.4.0.2 Renovations, additions, or reconstruction of existing buildings are not required to meet the Green Building Regulations.
- 11.4.0.3 Compliance with the Green Building Regulations shall be a condition of approval for development permits for all new building construction and shall also be necessary for compliance with this Land Use Bylaw for buildings for which a development permit is not required pursuant to Subsection 1.9 of this Bylaw.

## **11.5 Application and Reporting Procedure**

- 11.5.0.1 When a proposed new building exceeds 10m<sup>2</sup> (107.6 sq ft) in floor area, it shall be a requirement of the development approval (including developments where a development permit is not required pursuant to Subsection 1.9 of this Bylaw) that the Applicant initiate one of the Town of Canmore Procedures or the Third Party Certification Procedure described below prior to obtaining a building permit.

### **11.5.1 Green Building Procedure for Small Scale Residential and Similar Developments (single family, duplex, and row townhouse developments)**

- 11.5.1.1 The Applicant shall engage a Certified Energy Advisor to initiate the EnerGuide Rating System for Homes. Evidence of this engagement shall be provided in advance of the Town issuing a Building Permit.
- 11.5.1.2 The Applicant shall work with the Certified Energy Advisor through a process that generally involves the following steps:
  - a. The EnerGuide service starts with an analysis of the new house plans by a Certified Energy Advisor.
  - b. The Advisor recommends energy saving upgrades and works with the Applicant to develop a report that lists detailed options for improving the home's energy performance.
  - c. The builder then estimates the work and provides the Applicant with price information that ultimately leads to construction decisions. Note that the Town of Canmore's target for the EnerGuide Rating is a result that is 10% better than the rating that would be obtained by the Reference House, and that there is a system of incentives and penalties established below encouraging achievement of this target.
  - d. When construction is complete, the Certified Energy Advisor verifies the applied energy upgrades and evaluates the energy performance of the building in accordance with the EnerGuide Rating System for Homes, which includes a blower door test and takes into

account on-site renewable energy contributions amongst other measures.

- e. After the data have been collected and analyzed, the dwelling receives an interim EnerGuide Rating.
  - f. The interim EnerGuide Rating is submitted to Natural Resources Canada for verification and approval. Once that is completed, the owner is provided with an official EnerGuide label to display the rating on the dwelling's furnace or electrical box.
- 11.5.1.3 Following construction and prior to occupancy of the building being granted by the Town, the Applicant or Certified Energy Advisor shall submit to the Town confirmation that the energy performance evaluation has been undertaken, along with a copy of the interim EnerGuide Rating.
- 11.5.1.4 The Town will compare the EnerGuide Rating achieved to that of the Reference House, the target being a rating that is a minimum of 10% less than the gigajoule per year requirement of the Reference House.
- 11.5.1.5 Based on the outcome of the EnerGuide Rating comparison, the Town will determine if incentives or penalties apply to the development.
- 11.5.1.6 When the owner of the dwelling receives the official EnerGuide label from Natural Resources Canada, a copy should be provided to the Town to verify the interim rating.

**11.5.2 Green Building Procedure for Commercial, Industrial and Institutional Buildings, and Residential Developments where the EnerGuide program cannot be applied**

- 11.5.2.1 Applicants applying for development approval need to inform the Town prior to commencement of construction whether they are following only the mandatory energy-related requirements of the Alberta Building Code or will follow the Town's Green Building option for construction. Applicants following only the Alberta Building Code need provide no further information to the Town but should review the Targets, Incentives and Penalties section below to understand the potential benefits they are foregoing.
- 11.5.2.2 Applicants following the Town's Green Building option shall engage a Certified Energy Advisor or other qualified professional to provide the Town with evidence that the building has been designed to comply with the 2015 National Energy Code for Buildings as revised to the date of application (2015 NECB). This is the Town's Green Building target. Compliance can be demonstrated through the prescription, trade-off or performance paths.
- 11.5.2.3 Applicants seeking Enhanced Green Building construction under the Town's Green Building option, and the incentives provided by the Town for achieving this, must engage a Certified Energy Advisor or other qualified professional, use the 2015 NECB performance path for building energy design, and submit Can-Quest (or equivalent software) modelling.
- 11.5.2.4 Once the building has been designed and prior to a decision on the development permit application, the Applicant and his or her Certified Energy Advisor or other qualified professional shall meet with a Development Officer to discuss the benefits available under the Targets, Incentives and Penalties portion of this Regulation. Based on the improved energy performance of the proposed building, the appropriate benefit will be established as part of the development permit issued for the project. The development agreement prepared for the

project shall include provisions for guaranteeing that the Applicant meets its commitments regarding building energy performance.

- 11.5.2.5 Green Building target (2015 NECB) Applicants: Following construction and prior to occupancy being granted by the Town, the Applicant shall provide the Town with evidence from a Certified Energy Consultant or other qualified professional that the building has been constructed in compliance with the 2015 NECB. Further, if the Consultant or professional finds that the building has not met the 2015 NECB requirements, he or she shall specify the percentage by which the building falls below the 2015 NECB in terms of energy use.
- 11.5.2.6 Enhanced Green Construction (exceeding 2015 NECB) Applicants: Following construction and prior to occupancy being granted by the Town, the Applicant's Certified Energy Consultant or other qualified professional shall submit the results of the Can-Quest (or equivalent software) modelling based on final building construction, demonstrating that the building has achieved Enhanced Green Construction. The Consultant or professional shall specify the percentage by which the building exceeds the 2015 NECB in terms of energy use.

### **11.5.3 Third Party Certification Procedure**

- 11.5.3.1 Instead of following the Town of Canmore Green Building Procedures as per Subsection 11.5.1 and Subsection 11.5.2, the Applicant may use a recognized third party to certify that the building component of a development meets the Town's Green Building objectives. Third party organizations often have more rigorous programs for obtaining environmentally friendly and energy efficient results than those required by the Town.
- 11.5.3.2 The Town currently recognizes LEED™ and Built Green Canada™ certifications, and the Town's Development Authority may accept other programs when issuing decisions on a development permit application. In those instances where a development permit is not required (see Section 1.9 of this Bylaw), Town Development Officers are hereby authorized to make a decision as to the acceptability of other third party certification.
- 11.5.3.3 When an Applicant elects to follow the Town's Green Building option and use third party verification procedures, evidence of intent to submit a third party certification shall be submitted in advance of the Town issuing a building permit.
- 11.5.3.4 The Applicant shall provide evidence that the third party certification has been achieved prior to occupancy being granted by the Town. A preliminary notification of compliance provided by the third party shall suffice in this regard, with the official copy of final certification required within 90 days of occupancy of the building or, as applicable, the final unit.
- 11.5.3.5 When a third party certification such as LEED™ or Built Green Canada™ is utilized, the applicant is not required to provide evidence that the EnerGuide Rating System target has been met.

## **11.6 Green Building Performance Security Requirement**

- 11.6.0.1 This section applies only to:
- a. Small Scale Residential and Similar Developments (single family, duplex, and row townhouse developments) for which the Town of Canmore Green Building Procedure are

## 11 GREEN BUILDING

mandatory for development approval; and

- b. Applicants developing Commercial, Industrial and Institutional Buildings, and Residential Developments where the EnerGuide Program cannot be applied, and where the Applicants have elected to use either the Town's Green Building or Enhanced Green Construction option.

This section does not apply to Applicants who have decided to follow only the mandatory energy-related requirements of the Alberta Building Code when developing Commercial, Industrial and Institutional Buildings, or Residential Developments where the EnerGuide Program cannot be applied.

- 11.6.0.2 If the interim EnerGuide report or 2015 NECB energy calculation or third party certification have not been submitted prior to occupancy as required above, the Applicant shall provide a refundable Green Building performance security prior to building occupancy being granted by the Town.
- 11.6.0.3 Similarly, if the interim EnerGuide report or 2015 NECB energy calculation or third party certification show that the minimum performance targets established in this Green Building Regulation have not been achieved, the Applicant shall provide a refundable Green Building performance security prior to building occupancy being granted by the Town.
- 11.6.0.4 The amount of the Green Building performance security shall be based on a specified dollar amount per \$1,000 of construction value as that construction value was established during the building permitting process, with the specified dollar amount being set annually by Council as part of the Master Fee Schedule approval.
- 11.6.0.5 The Green Building performance security shall be provided to the Town in the form of cash or a letter of credit.
- 11.6.0.6 If the necessary reporting requirements and required minimum target (outlined under Subsection 11.7) are achieved within six months of occupancy being granted, the Green Building performance security shall be refunded to the Applicant. The Applicant may also be eligible for an incentive payment as outlined below.
- 11.6.0.7 If the necessary reporting requirements are submitted within six months of occupancy being granted but the required minimum target is not achieved or only partially achieved, the Green Building performance security may be subject to the penalty provisions outlined below in Subsection 11.7.
- 11.6.0.8 Modifications to the development may be undertaken to achieve the required Green Building Regulation target in the six month period following occupancy, before the decision on a refund of the Green Building performance security is made by the Town.

### **11.7 Green Building Targets, Incentives and Penalties**

- 11.7.0.1 Where targets are demonstrated to be unreasonable given the special characteristics of a development or a building within it, exceptions may be considered at the discretion of the Town of Canmore Planning and Development Department. Where warranted, the Green Building target may be varied.

### 11.7.1 Small Scale Residential Developments (single family, duplex, and row townhouse developments)

11.7.1.1 The Town shall reward Applicants constructing Small Scale Residential Developments (single family, duplex, and row townhouse developments) who exceed the development approval minimum requirements for Green Buildings established in these Regulations through the provision of incentive payments.

11.7.1.2 For Applicants using the EnerGuide Rating System, the Green Building minimum target is an energy usage rating that is at least 10% better than (i.e., 10% below the gigajoule per year requirement of) the Reference House.

11.7.1.3 For Applicants using the EnerGuide Rating System, an incentive shall be provided where the required reporting has been received within six months of occupancy and confirms the GJ/year improvement is:

- a. 11 - 20% better than the Reference House – the incentive is 10% of the Green Building performance security or its equivalent value
- b. 21 - 30% better than the Reference House – the incentive is 20% of the Green Building performance security or its equivalent value
- c. 31 - 40% better than the Reference House – the incentive is 30% of the Green Building performance security or its equivalent value.

<b>EnerGuide score required</b>	<b>Incentive</b>	<b>BuiltGreen™ equivalent</b>
10% better than EnerGuide Reference House	No incentive	Bronze
11% to 20% better than EnerGuide Reference House	10% of Green Building performance security	Silver
21% to 30% better than EnerGuide Reference House	20% of Green Building performance security	Gold
31% to 40% better than EnerGuide Reference House	30% of Green Building performance security	Platinum

11.7.1.4 Applicants who fail to complete the Green Building requirements or do not achieve the development approval minimum requirements for Green Buildings as established in these Regulations shall face penalties as set out below but will not be required to modify their buildings to achieve the targets.

11.7.1.5 For Applicants using the EnerGuide Rating System, the penalties are as follows:

- a. Failure to submit the reporting requirements – the penalty is 100% of the Green Building performance security. If the necessary reporting requirements and required minimum target are achieved within six months of occupancy being granted, the Green Building performance security shall be refunded to the applicant and the Applicant may still qualify for incentive payments.
- b. Failure to meet the minimum target (10% better than the Reference House) by less than 10% – the penalty is 10% of the Green Building performance security.

- c. Failure to meet the minimum target (10% better than the Reference House) by 10 - 19% - the penalty is 20% of the Green Building performance security.
- d. Failure to meet the minimum target (10% better than the Reference House) by 20 - 29% - the penalty is 30% of the Green Building performance security.
- e. Failure to meet the minimum target (10% better than the Reference House) by 30% or more - the penalty is 40% of the Green Building performance security.

**11.7.2 Commercial, Industrial and Institutional Buildings, and Residential Developments where the EnerGuide program cannot be applied**

11.7.2.1 The Town shall reward Applicants constructing Commercial, Industrial and Institutional Buildings, and Residential Developments where the EnerGuide program cannot be applied, who exceed the requirements of the Alberta Building Code.

11.7.2.2 Applicants meeting the Town's Green Building target (2015 NECB) shall be eligible for variances of up to 20% as allowed in Subsection 1.17.1.1 of this Bylaw. Those variances may apply to maximum building height, yard setbacks, maximum lot coverage, maximum and minimum densities, and minimum parking requirements. Applicants not meeting the Town's Green Building target shall not be eligible for these Subsection 1.17.1.1 variances.

11.7.2.3 Applicants meeting Enhanced Green Construction by exceeding the Town's Green Building target are eligible for 1.17.1.1 variances as well as reductions in the amount of security required to ensure the conditions of their development permit as follows:

- a. 1 – 10% better than the 2015 NECB requirements – the incentive is a reduction of 10% of the development security
- b. 11 – 15% better than the 2015 NECB requirements – the incentive is a reduction of 20% of the development security
- c. 16 - 20% better than the 2015 NECB requirements – the incentive is a reduction of 30% of the development security
- d. More than 20% better than the 2015 NECB requirements – the incentive is a reduction of 30% of the development security plus the potential for additional variances to maximum building height, yard setbacks, maximum lot coverage, maximum and minimum densities, and minimum parking requirements pursuant to Subsection 1.17.3 of this Bylaw.

11.7.2.4 Applicants who have received incentives under the Green Building Regulations shall provide proof that they have met their objectives in accordance with Subsection 11.5.2 above.

11.7.2.5 For Applicants not achieving their Green Building or Enhanced Green Construction requirements, the penalties are as follows:

- a. Failure to achieve the requirements by an energy equivalent of 1 to 5% - the penalty is 10% of the Green Building performance security.
- b. Failure to achieve the requirements by an energy equivalent of 6 to 10% - the penalty is 25% of the Green Building performance security.
- c. Failure to achieve the requirements by an energy equivalent of 11 to 15% - the penalty is

50% of the Green Building performance security.

- d. Failure to achieve the requirements by an energy equivalent greater than 15% - the penalty is 100% of the Green Building performance security
- e. Failure to submit the 2015 NECB performance results – the penalty is 100% of the Green Building performance security.

11.7.2.6 Applicants pursuing Green Building or Enhanced Green Construction shall enter into a development agreement with the Town as a condition of development approval, and that agreement shall contain provisions aimed at ensuring compliance with the Applicant's commitments under this Regulation. Depending on the complexity of the project and the size of the variances or reductions in development security that were granted, the Town may establish larger penalties through the development agreement than those established in 11.7.2.5 in the event that the Applicant does not meet its commitments.

### **11.7.3 Third Party Certification Procedure**

11.7.3.1 When an Applicant has not used the EnerGuide Rating System but has significantly exceeded the minimum requirements of a third party certification, the incentive shall be equivalent to that established above for the EnerGuide Rating System.

11.7.3.2 When an Applicant has elected to use a third party Green Building verification rather than the EnerGuide Rating System and has not achieved the minimum requirements of the third party certification, the penalty shall be equivalent to that established above for the EnerGuide Rating System.

11.7.3.3 When an Applicant has not used Can-Quest (or equivalent) modelling and the comparison to 2015 NECB requirements but has significantly exceeded the minimum requirements of a third party certification such as LEED, the incentive shall be equivalent to that established above for the 2015 NECB comparison.

11.7.3.4 When an Applicant has elected to use a third party Green Building verification rather than the 2015 NECB requirements and has not achieved the minimum requirements of the third party certification, the penalty shall be equivalent to that established above for the 2015 NECB comparison.

11 GREEN BUILDING