Sustainability Checklist

RESIDENTIAL CONSTRUCTION

FOR BC BUILDING CODE PART 9 AND PART 3 BUILDINGS (CLIMATE ZONES 5 TO 7A)

Attention to sustainability in planning and building your residential project will create a quality building with reduced long-term utility costs. Use this checklist to help plan, design and build with goals of sustainability and energy-efficiency.

The RDCK encourages energy efficiency measures and renewable energy technologies in new residential construction and retrofits. This supports regional goals of sustainability and energy reduction objectives as outlined in the Strategic Community Energy and Emissions Plan.

Please return the completed checklist with your building permit application package.

Property Owner/ Project Manager Name

Property Address

Project Description

- ❑ New residential construction
- ❑ Addition to existing residence
- ❑ Structural or building envelope renovation
- ❑ Other

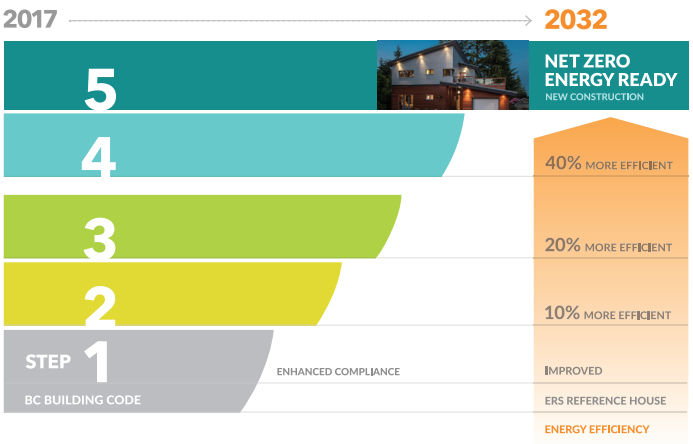
Consider each item and check those applicable to your project: (also see reverse)

- ❑ Take a holistic approach to building and reap the reward: energy efficiency, shade trees, solar exposure, attention to building practice detail, etc.
- ❑ Find an Energy Advisor through **BC Home Performance Stakeholder Council** or **Natural Resources Canada** service provider listings.
- ❑ Check for updated energy advice and incentives at https://efficiencybc.ca
- ❑ Work with an Energy Advisor from initial project design. Plan to meet a minimum Step 1 of the BC Energy Step Code
- ❑ Review BC Energy Step Code guidelines. Examples of green labels include ENERGY STAR® for New Homes or R-2000 home
- ❑ Review utility rebates and savings offers as applicable:

  https://efficiencybc.ca
  https://www.fortisbc.com/Rebates/RebatesOffers/Pages/default.aspx
  https://www.bchydro.com/powersmart/residential/savings-and-rebates.html

Notes on BC Energy Step Code

The BC Energy Step Code is a voluntary provincial standard that provides a consistent approach to achieving more energy-efficient buildings. Builders work with an energy advisor, who uses software to analyze construction plans and determine building energy efficiency. During construction, pay special attention to air sealing, walls, windows, doors and insulation to achieve energy model performance. Regardless of the BC Energy Step Code step chosen, the ultimate building comfort and reduced utility bills will reward the future homeowner / building occupant.



box 590 202 Lakeside Drive BC V1L 5R4 | **T:** 250.352.6665 | **Toll-free:** 1.800.268.7325 | **rdck.ca**

SUSTAINABILITY CHECKLIST INSTRUCTIONS:

The intent of this Checklist is not to "pass" or "fail", but rather to assist applicants and the Building Department to work together to develop high quality residential buildings and promote energy efficient building practice in our region. Please review and consider all items on the checklist.

Site consideration

- ❑ Optimum solar orientation and use natural geographic/ecological features in building siting.
- ❑ Compact development and minimum disturbed site area considered.
- ❑ Surface water management: permeable lot, permanent erosion controls and/or roof run-off management.
- ❑ Landscape plan: shade trees, fire-smart varieties, low irrigation demand, drought tolerant plants, no invasive plants.
- ❑ Plan for site erosion control during construction.
- ❑ Make your property FireSmart

Building Energy Efficiency (BC Energy Step Code)

- ❑ Work with a **Certified** Energy Advisor.
- ❑ Review building energy efficiency and EnerGuide home evaluations
- ❑ Use efficient hot water distribution/domestic hot water equipment.
- ❑ Install hot water pipe insulation.
- ❑ Use appropriate sized & high efficiency HVAC equipment; minimal losses from heating and cooling distribution system.
- ❑ High performance envelope; including exterior or enhanced insulation.
- ❑ Build for minimal envelope leakage and maintain strict attention to air sealing detail during construction.
- ❑ Install enhanced performance windows and doors.
- ❑ Install external window blinds / shades
- ❑ Use efficient ENERGY STAR® lighting options.
- ❑ Install ENERGY STAR® water efficient appliances, e.g., washing machine.
- ❑ Investigate renewable energy system, e.g., air source heat pump with electric or natural gas backup.
- ❑ Investigate drain water heat recovery.
- ❑ Install solar photovoltaic system, or make ready for future retrofit.

Waste Management

- ❑ Plan for recyclables, compost and waste storage on site.
- ❑ Use environmentally preferred products.
- ❑ Practice material efficient framing (order waste factor limit, detailed framing documents, detailed cut list and lumber order, framing efficiencies, off-site fabrication).
- ❑ Use construction waste management and reduction practice.

Active and Low Carbon Transportation

- ❑ Clear and safe pedestrian access and pathways.
- ❑ Bicycle storage or racks.
- ❑ Electric vehicle charging infrastructure placement (make ready for easy retrofit of "level 2" charger).

Indoor Environmental Quality (BC Building Code)

- ❑ Review combustion venting measures.
- ❑ Review moisture load control.
- ❑ Install outdoor air ventilation.
- ❑ Install local exhaust vents.
- ❑ Consider enhanced energy efficiency performance for distribution of space heating and cooling.
- ❑ Install high quality air filters.
- ❑ Choose low-VOC or zero-VOC (volatile organic compounds) paint.
- ❑ Use radon resistant construction practices.
- ❑ Ensure garage pollutant protection.

Water Conservation

- ❑ High efficiency fixtures and fittings (low flush toilets, low flow showerheads, tap aerators).
- ❑ Rainwater harvesting system.
- ❑ If available, graywater reuse system.
- ❑ Maintain xeriscape or low irrigation needs (e.g. consider native plants, fire-smart varieties) or high efficiency irrigation system.
- ❑ Ability to monitor occupant water usage. (i.e., install water meter)

Awareness and Education

- ❑ Be familiar with energy efficiency practices and efficient use of heating /cooling /ventilation building controls (and teach all residents of home).
- ❑ Be familiar with BC Energy Step Code

Date Checklist completed

Signature

Property Owner/Project Manager

Sustainability Checklist

COMMERCIAL CONSTRUCTION

FOR BC BUILDING CODE PART 9 AND PART 3 BUILDINGS (CLIMATE ZONES 5 TO 7A)

Attention to sustainability in planning and building your commercial project will create a quality building with reduced long-term utility costs. Use this checklist to help plan, design and build with goals of sustainability and energy-efficiency.

The RDCK encourages energy efficiency measures and renewable energy technologies in new commercial building construction and retrofits. This supports regional goals of sustainability and energy reduction objectives as outlined in local Strategic Community Energy and Emissions Plans.

Please return the completed checklist with your building permit application package.

Property Owner/ Project Manager Name

Property Address

Project Description

- ❑ New construction
- ❑ Addition to existing building
- ❑ Structural or building envelope renovation
- ❑ Other

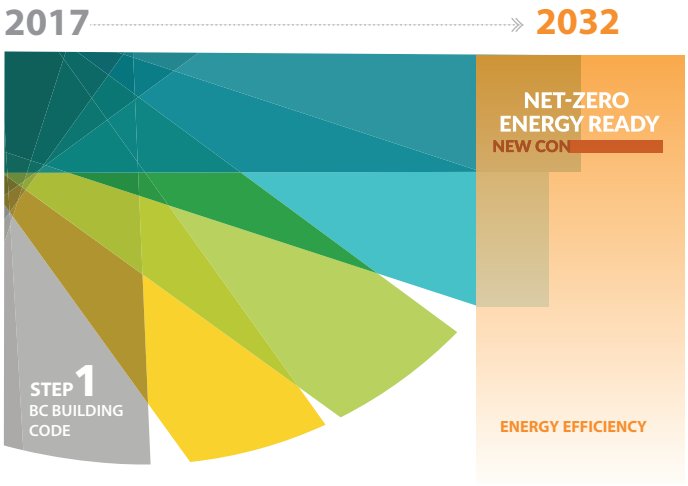
Consider each item and check those applicable to your project: (also see reverse)

- ❑ Take a holistic approach to building and reap the reward: energy efficiency, shade trees, solar exposure, attention to building practice detail, etc.
- ❑ Review BC Energy Step Code guidelines.
- ❑ Work with an energy modeller from initial project design and choose the performance path to meet the energy requirements of the Building Code.
- ❑ Review utility offers and programs to help your business save energy and money, as applicable:

  https://efficiencybc.ca
  https://www.fortisbc.com/Rebates/RebatesOffers/Pages/default.aspx
  https://www.bchydro.com/powersmart/business.html

Notes on BC Energy Step Code

The BC Energy Step Code is a voluntary provincial standard that provides a consistent performance-based approach to achieving more energy-efficient buildings. Builders work with an energy modeller, who uses software to analyze construction plans and determine building energy efficiency. During construction, pay special attention to air sealing, walls, windows, doors and insulation to achieve energy model performance and air-tightness. The BC Energy Step Code will eventually become the base building code as the province moves towards net-zero energy buildings by 2032. Become familiar with it now and take advantage of benefits such as improved building comfort and reduced utility bills for the occupants.



SUSTAINABILITY CHECKLIST INSTRUCTIONS:

The intent of this Checklist is not to "pass" or "fail", but rather to assist applicants and the Building Department to work together to develop high quality commercial buildings and promote energy efficient building practice in our region. Please review and consider all items on the checklist.

Site consideration

- ❑ Optimum solar orientation and use natural geographic/ecological features in building siting.
- ❑ Compact development and minimum disturbed site area considered.
- ❑ Surface water management: permeable lot, permanent erosion controls and/or roof run-off management.
- ❑ Landscape plan: shade trees, fire-smart varieties, low irrigation demand, drought tolerant plants, no invasive plants.
- ❑ Plan for site erosion control during construction.
- ❑ Make your property FireSmart

Building Energy Efficiency

- ❑ Design and construct a high performance building envelope
- ❑ Exterior or enhanced insulation
- ❑ Advanced framing techniques
- ❑ Attention to air sealing detail
- ❑ Enhanced performance windows and doors
- ❑ External window blinds/shades to mitigate unwanted heat gain
- ❑ Choose energy efficient and appropriately-sized mechanical systems
- ❑ HVAC equipment with minimal losses from heating and cooling distribution system
- ❑ Efficient hot water distribution/domestic hot water equipment, drain water heat recovery, hot water pipe insulation
- ❑ Investigate renewable energy systems
- ❑ Air source heat pump with backup
- ❑ Solar photovoltaic system, or make ready for future retrofit
- ❑ Meet the energy requirements of the building code with the BC Energy Step Code
- ❑ Work with an energy modeller on building design and airtightness testing

Waste Management

- ❑ Plan for recyclables, compost and waste storage on site.
- ❑ Use environmentally preferred products.
- ❑ Practice material efficient framing (order waste factor limit, detailed framing documents, detailed cut list and lumber order, framing efficiencies, off-site fabrication).
- ❑ Use construction waste management and reduction practice.

Active and Low Carbon Transportation

- ❑ Clear and safe pedestrian access and pathways.
- ❑ Bicycle storage or racks.
- ❑ Electric vehicle charging infrastructure placement (make ready for easy retrofit of "level 2" charger).

Equipment, Appliances and Lighting

- ❑ Use efficient ENERGY STAR® lighting options.
- ❑ Install ENERGY STAR® / water efficient appliances, e.g., washing machine.
- ❑ Commercial kitchens: FortisBC has incentives for electric and natural gas kitchen equipment (depending on your service area).
- ❑ Industrial facilities: Investigate other equipment-specific opportunities and incentives.

Water Conservation

- ❑ High efficiency fixtures and fittings (low flush toilets, tap aerators, pre-rinse spray valves).
- ❑ Rainwater harvesting system.
- ❑ If available, graywater reuse system.
- ❑ Maintain xeriscape or low irrigation needs (e.g. consider native plants, fire-smart varieties) or high efficiency irrigation system.
- ❑ Ability to monitor occupant water usage. (i.e., install water meter)

Awareness and Education

- ❑ Once the building is operational, ensure best energy management practices. All operators must be familiar with energy efficiency practices and efficient use of heating /cooling /ventilation building controls.
- ❑ Practice regular energy performance checks as regular building maintenance.
- ❑ Use ENERGY STAR® PortfolioManager®.

Date Checklist completed:

Signature

Property Owner/Project Manager

Regional District Central Kootenay

Area A | Area B | Area C | Area D | Area E | Area F | Area G | Area H | Area I | Area J | Area K

Castlegar | Creston Valley | Town of Creston | Nakusp | City of Nelson | New Denver, B.C. | Hub of the Kootenays | Salmo | Silverton, British Columbia