

# Building By-law Fast Facts

## CONSTRUCTION

## Building for a Northern Climate

The City of Yellowknife (the City) is updating the Building By-law. The By-law sets out minimum safety standards for the construction and renovation of buildings in Yellowknife by referencing the National Building Codes and including additional requirements for building in the north. These standards ensure safety, energy efficiency and health for residents in a northern climate.

Outlined below are key elements of and changes to the Building By-law in relation to local construction requirements. Look for this symbol  to identify changes.

### Building for Northern Conditions

 The proposed Building By-law makes it easy and less costly to meet the standards required for building in northern conditions. It does so by offering additional pre-engineered models for some structural elements. For example, the Building By-law provides quick and cost-effective pre-engineered options for standard foundations. These changes lower costs as they don't require custom design and engineering.

### The Big Picture

The minimum standards for local construction, as set out in the Building By-law, make buildings more energy efficient. This reduces energy costs over the life of the building, resulting in savings for the owner.



### BUILD TO CODE AND SAVE ON ENERGY

 Building to the standards in the Building By-law (which adopt National Building Codes) reduces energy costs, reduces peak energy demand, and improves the quality and comfort of the building's indoor environment.

Sustainable, energy-efficient buildings also:

- Improve worker productivity by approximately 5%
- Deliver a rental premium of 3 to 5%
- Increase resale value between 8 and 26%



## Quick Facts



### Pre-engineered foundations:

- Meet the safety standards in the National Building Code;
- Address the requirements of local construction in discontinuous permafrost;
- Are professionally designed, consistent with sound engineering and northern construction practices; and
- Reduce local building costs.



### Pre-engineered foundations simplify compliance with specific construction requirements. For example:

- Surface-mount foundation wood blocks, concrete pads or 100mm thick concrete floor slab foundation may be approved without a Registered Design Professional (Engineer) if it supports a small one-story building with a floor area less than 55 m<sup>2</sup>;
- Design of concrete piers used for foundations directly pinned to bedrock may be approved without requiring a professional designer, subject to the engineered design models shown in the new Building By-law;
- Pre-engineered models (provided in the By-law) can be used for retaining walls between 600 and 1200 mm; and
- Only walls over 1200 mm or supporting any structure above, will need to be designed by a Registered Design Professional.

## Paths to Meeting Energy Efficiency Standards

Energy efficiency focuses on building elements considered during design:

- Building envelope – Includes walls, windows, doors and roofing, air infiltration rates and thermal transmission; and
- Heating, ventilating and air conditioning systems (HVAC) – Includes heat recovery ventilation, pipe and duct insulation, building automation and control systems that optimize equipment operation.

The Building By-law continues to support climate change mitigation by providing two different pathways to meet energy efficiency standards:

1. The prescriptive path (prescribed construction standards), or
2. The performance path (meeting specified results in energy efficiency testing).

With both pathways, the building is subject to initial and mid-construction evaluation by an Energy Advisor to ensure airtightness of building envelopes.



All new homes have an EnerGuide rating label issued by the Energy Advisor, along with a house performance compliance calculation report. This is required in the current By-law and National Building Code.

### Prescriptive Path

Energy efficiency involves following the prescriptive construction requirements of each section of the code. An Energy Advisor assists by completing an energy modelling of the building.

### Performance Path

Design for energy efficiency is flexible. Builders must demonstrate that the design will not consume more energy than an equivalent building built to the prescriptive requirements of the code. An Energy Advisor assists by completing an energy modelling of the building.

Performance path standards are based on the current National Energy Code for Buildings (NECB), established by the National Research Council of Canada.

NECB has minimum standards for mechanical equipment efficiency, which form part of the review of construction applications.

## Find Out More

Review the Building By-law and learn about the changes at [www.yellowknife.ca/BuildingBylaw](http://www.yellowknife.ca/BuildingBylaw)

For subject-specific information, check out these factsheets:

- [Background](#)
- [Building Standards and Enforcement](#)
- [Mechanical Systems](#)
- [CityView: Features and Benefits](#)

Have questions or feedback? Email: [BuildingBylaw@yellowknife.ca](mailto:BuildingBylaw@yellowknife.ca)

