

Memo



To: Committee of the Whole
From: **Building Inspection**
Date: 2023-04-17
Subject: Building Code Revision Requiring Enhanced Energy Efficiency Performance, Effective May 1.

Purpose

To introduce Council to the new energy efficiency standards and the resulting consequences.

Background

Beginning in 2017, the Province has been preparing the development community for the mandatory introduction of the “Energy Step Code” (ESC). Essentially the ESC is a performance-based compliance path which leads to net-zero-energy-ready buildings through a series of increasingly stringent requirements for energy use.

There are 5 steps to the ESC, step 1 is basic compliance with the codes prescriptive requirements with assistance from third-party energy advisors, and step 2 is a 10% overall increase in energy performance with attention to air tightness details. Effective May 1, 2023, the Province has mandated that that all new construction reach step 3, which is 20% higher than step 1, coupled with stringent design input upfront and mandatory air tightness testing throughout the construction process. Moving forward, it is anticipated that step 4 will be mandated in 2027 (40% better) and step 5 will be reached in 2032, the net-zero-ready standard.

Prior to this year, the lesser steps were an optional feature should jurisdictions desire. Higher steps were also available if they wished, and a few such as Kimberly and Rossland did take up the challenge. In Grand Forks, while we certainly encouraged developers to reach higher levels, our expectations were that the minimum prescriptive code standards be achieved.

The effects of this new code revision will be most apparent with what’s referred to as Part 9, standard buildings. Part 9 buildings are typically under 3 stories in height, less than 600 square meters and typically used for residential, business, retail and industrial activities. Larger buildings of these uses, or any building size used for public gathering occupancies (Part 3, complex buildings) are designed by registered professionals who ultimately sign off on energy efficiency standards, many following the requirements spelled out in the National Energy Code for Buildings or ASHRAE (engineering) Standards and have been for many years.

There are consequences to this new Ministerial Order:

- Most certainly construction cost will increase. Studies on cost implications are certainly ongoing, however reports have circulated which give ranges from as low as 2% to as high as 18%. 6% higher seems to be the most consistent value. And while the initial cost will be higher the expectation is these expenses will be recovered over time with the higher energy efficiency standards.

- Delays in the permitting process will inevitably occur until developers are fully up to speed with the new requirements. There will be much greater emphasis on very specific design plans and the initial review process, not so much created by city staff but by the mandated third-party energy advisors. Unfortunately, no certified advisors currently reside in Grand Forks; however, Staff is aware of advisors from the Nelson, Rossland and Penticton areas who are available, and no doubt as the program rolls out more will find an opportunity to fill the void.
- An upside for the city's building department staff will be the reliance on the energy advisors for their role in plan and construction reviews. The time we currently spend on reviewing air tightness, energy performance and mechanical systems in new construction will be replaced with the time necessary to review compliance reports, cursory reviews of energy efficiency construction matters, ask and answer questions, and file the reports.
- It is not completely understood how this Order will affect the pre-manufactured modular housing industry. Given that the factories are not exempt from the requirements, it appears much more site-specific customization will be needed. And while there will be air-tightness testing of the units in the factory, it is unclear what to expect when the modular is placed on a full basement or when other on-site modifications occur.

The province has left jurisdictions an option to select a more enhanced 'prescriptive' approach rather than the otherwise mandated step 3 'performance' approach, which means essentially higher prescribed insulation levels throughout. However, we have not heard of any nearby jurisdiction wanting to opt into this so it is our preference to follow others with the hope that any perceived initial difficulties will be quickly minimized.

In addition to the new ESC requirement, the province is also slowly rolling out a new "Zero Carbon Step Code". At this time this will be a voluntary compliance path essentially regarding the type of mechanical equipment one chooses for a new building. The focus is on heat, hot water and cooking systems, and the ultimate goal of zero-carbon emissions which would require full electrification of these appliances. At this time though, it is to be a 'measure only' approach intended to build knowledge and capacity, however jurisdictions could choose to implement higher standards by bylaw if they wish.

Lastly, it needs to be noted that most of our local licenced residential builders have been aware of this impending code revision for a number of years and have shown with recent projects that achieving this step, and higher, is entirely possible and generally encouraged by their clients. Many learning resources have been available for quite some time for both builders and inspectors, multiple training sessions have been held and continue to be held (all local builders have been invited by us to take part in another building code change session on April 13, gratefully initiated by the Regional District!). It may be that initially this appears to be a massive step to take but it doesn't have to be, and it is certainly where the province wants us to be. And this clearly fits within the City's long-term goals outlined in our latest Official Community Plan under Environmental Sustainability (Reduce GHG's and fight climate change).