

# Memo

**To** Bill Brown  
Director of Development Services  
Township of Esquimalt

**CC** Blair McDonald - Esquimalt  
Alec Page – CORE PM

**From** Adam Fawkes

**Date** June 21, 2021

**Project** Esquimalt Public Safety Building  
**Subject** Energy Performance – Step Code Comparison

**Details** This memo is in response to a question from Mayor Desjardins during the June 16 council meeting regarding energy performance of the project. The Mayor specifically requested additional information related to how the project performs in relation to the Energy Step Code.

There are several alternate paths for measuring energy performance of buildings, all with slightly different definitions, level of performance and methodologies for modelling. The Public Safety building is being designed, modelled and built to a standard that focusses on the reduction of GHG emissions which is the Zero Carbon Building program (ZCB), administered by the Canadian Green Building Council (CaGBC). This program most aligns with the Township's commitment to reducing GHG emissions.

A direct comparison of Energy Step Code performance when modeled to ZCB performance is not possible, however a rough estimate is provided below. Part of the difficulty lies in the fact that the Energy Step Code does not cover some of the types of uses in the Public Safety Building, including Assembly (possible café), and Storage Garage (apparatus bays). In order to compare Step Code to ZCB we have classified Assembly the same as Mercantile, and classified Storage Garage the same as Business and Personal Services. Further theoretic assumptions are made to combine all the various uses into a single occupancy classification based on a weighted average.

The blended energy targets would be as follows for the different Step Code Levels:

Step 2: TEDI 31 kWh/m<sup>2</sup>.y and TEUI 166 kWh/m<sup>2</sup>.y

Step 3: TEDI 21 kWh/m<sup>2</sup>.y and TEUI 120 kWh/m<sup>2</sup>.y

The current energy modelling results following the ZCB energy modelling guidelines are:

TEDI 22 kWh/m<sup>2</sup>.y (+/-) and TEUI 107 kWh/m<sup>2</sup>.y

With this theoretical comparison of different modelling methods, the project compares with Step 2 of the Energy Step Code and could possibly reach Step 3 with proper considerations of the storage garage and café occupancies.

We trust this provides an adequate response to Mayor Desjardins' question. Please don't hesitate if you require additional information.

Regards,

Adam

