Cornwall
ONTARIO CANADA
A city with a world of possibilities

Building & By-Law Division

Department of Planning, Development and Recreation

In this edition:

January 2017

CodeTECH Newsletter

Volume II

On behalf of everyone in the By-Law & Building Division, let me begin by wishing you a very prosperous and Happy New Year. This past construction season has been a very busy time for everyone; 845 Building Permits with a $60 Million Construction Value were issued in 2016. We continue to see strong growth in Cornwall. All the best in 2017!

Ontario has some of the most progressive regulations in North America for energy conservation in housing. With every version of the Ontario Building Code (OBC) requirements related to energy performance have increased with the goal of reducing energy consumption and the emission of Green House Gases (GHG). These regulations are captured in OBC - Part 12 and Supplementary Standard SB-12 Energy Efficiency for Housing. The requirements cover new housing and additions to existing housing within the scope of Part 9.

Designers will naturally focus on the building envelope provisions of SB-12. However mechanical and electrical energy efficiency requirements for housing are also covered in SB-12, and need to be considered when selecting a compliance package or designing a performance based solution.

Prior to January 1st, 2017, Chapter 2 offers designers four compliance options for Housing: Prescriptive, Performance, Energy Star for New Homes v12.1, and the R-2000 (2012) Standard. Similarly after December 31st, 2016, Chapter 3 offers designers these four compliance options but the Energy Star Standard is upgraded to v12.6. All options are intended to reduce energy consumption by 15% below 2014 requirements.

With the release of the revisions to SB-12, designers may now use *effective RSI(R) and U-V*alues for assemblies in Chapter 3 as an alternate to the RSI(R) and U-Values of the insulation alone. While this CodeTECH Newletter provides an overview of the prescriptive requirements of OBC SB-12 and is not exhaustive, it is supplemental to it; SB-12 should be read in its entirety.

As always, I invite you to discuss matters with any of the Building Division Staff. Some items are best addressed to the Building Official assigned to your project and site inspections.

Charles Bray, CBCO
Deputy Chief Building Official
Supervisor, Building Services

SB-12 ENERGY EFFICIENCY FOR HOUSING

KEY OBJECTIVES FOR 2017:

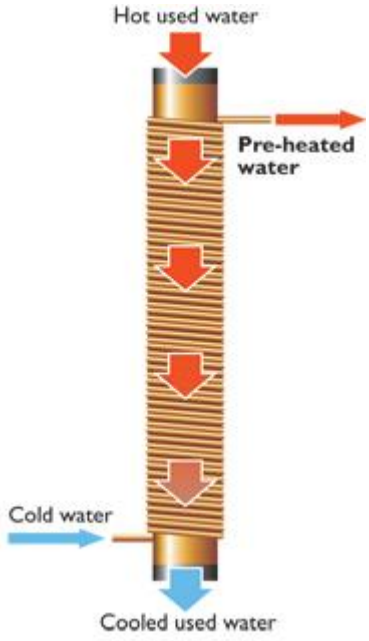
Building Permit applications received after December 31, 2016 will be required to conform to the new SB-12 amendments.

The Key Highlights for the new SB-12 amendments are:

- New prescriptive compliance packages that provide minimum 15 per cent energy efficiency improvements over existing packages,
- Drain Water Heat Recovery Units as mandatory requirements for all prescriptive compliance packages (see illustration),
- Heat or energy recovery ventilators as a mandatory requirement in all packages in order to protect indoor air quality as homes become increasingly “air tight”,
- Thermal U and effective RSI (R-Value) values along with nominal RSI values to provide added flexibility in the choice of different assembly structures (i.e. basement walls and roofs),
- Credits for reducing air leakage to encourage better energy conservation,
- Table to clarify requirements for developing a reference building,
- Revised air-leakage rates for the reference building to encourage testing and improved air tightness,
- Clarification to provide credits for renewables, dedicated ventilation systems and broader types of HVAC equipment.

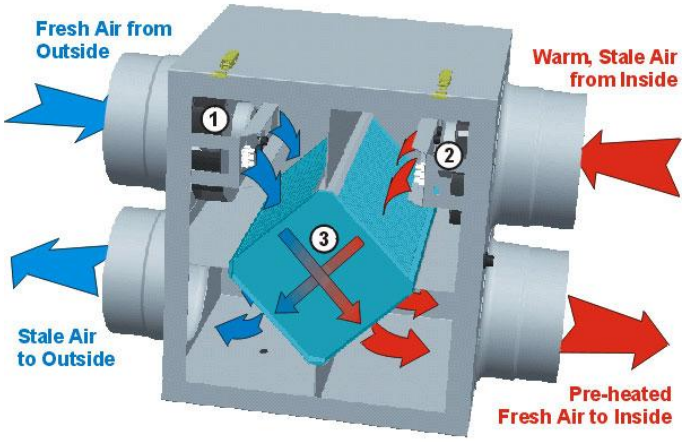
DRAIN WATER HEAT RECOVERY UNITS:

A Drain Water Heat Recovery System recovers heat from water that would otherwise be lost down the drain. It works best with simultaneous flows from showers, where there is demand for hot water at the same time as hot water is going down the drain. The recovered heat can be used to preheat cold water going to the hot water tank.



HEAT OR ENERGY RECOVERY VENTILATORS:

Heat Recovery Ventilators are mechanical devices that exchange stale indoor air ② with fresh outdoor air ①. Heat is transferred from the outgoing air to the incoming air by passing the two air streams through a heat-exchange core ③. The two air streams are kept separated, and only the heat is transferred.



PROCEDURES FOR PRESCRIPTIVE COMPLIANCE:

- Determine the area of windows, doors and skylights in your project and their percentage of the exterior walls (FDWR – Vertical Envelope Area) and roofs (FRR) respectively. This will determine which compliance paths are available to you. The prescriptive paths limit the area of windows, glazing in doors and skylights to 17% (22% with improved glazing) of the vertical envelope area (FDWR). Above 22% FDWR, energy modelling is required.

- Determine the number of Heating Degree Days (HDD) below 18 C (HDD18) for your building's location from OBC Volume 2 SB-1 Climate and Seismic Data (SB-1). SB-12 divides Ontario into 2 zones: Zone 1 below 5000 HDD18 and Zone 2 above 5000 HDD18.

- SB-12 assumes a high level of airtightness, 2.5 to 3 Air Changes per Hour (ACH). The selection of appropriate materials, attention to detail and careful review during construction is critical for the air barrier system to achieve these targets. Chapter 3 offers reduced assembly insulation options where airtightness is verified by blower door testing.

- The maximum permissible U-Values for windows are for the complete assembly. Frame losses, especially through metal frames, can significantly reduce the performance of the windows. Some manufacturers provide tables for determining the window assembly U-Value based on frame type, Centre of Glass (CoG) values and window areas. The National Fenestration Rating Council (NFRC) standard ANSI/NFRC 100-2014 sets out the procedures for determining the overall U-Value of windows. Software such as Therm may also be used. ER ratings are acceptable. Use SB-12 Tables 2.1.1.8. and 3.1.1.8. for conversion of ER to U-Values.

- Determine if any exceptions and adjustments for thermal bridging, glazing, log, post beam plank construction, Insulated Concrete Forms (ICF) and basement walls apply. If so, adjust the design values and check for compliance.

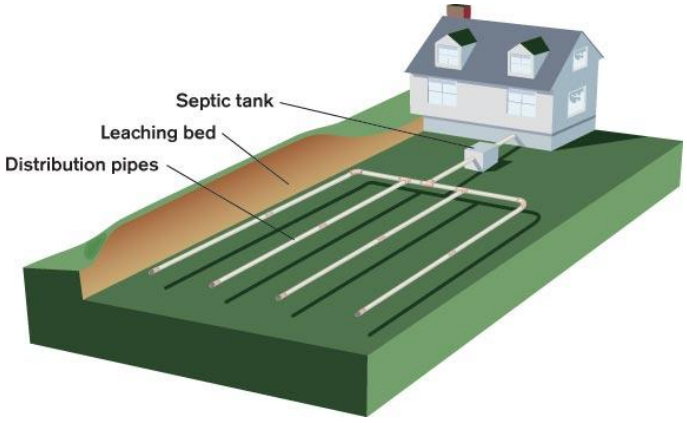
- Energy Efficiency Design Summary (EEDS) Forms for are available at the following website: http://www.oboa.on.ca/news/article/?id=250

PART VIII - SEWAGE SYSTEM PROGRAM:

Effective early 2017, the City of Cornwall will be entered into an agreement with the South Nation Conservation Authority for the enforcement of Part VIII of the Ontario Building Code – Private Sewage Systems. As such all Sewage Permit applications will be submitted directly to the South Nation Conservation; please coordinate with your Sewage System Designer.

SOUTH NATION CONSERVATION
DE LA NATION SUD

South Nation Conservation (SNC) issues permits and services related to severances, land development, new construction and inspections of private sewage systems. Privately owned sewage systems, including septic tanks and leaching beds, require a permit for installation or alteration under the Ontario Building Code. Proper operation and maintenance of your private sewage system is also required under this OBC jurisdiction.



The South Nation Conservation is located at 38 Victoria Street in Finch, Ontario and can be reached at:
Telephone: 613-984-2948 or Toll Free: 1-877-984-2948
More information is available at www.nation.on.ca

*How this will affect you: Beginning in early 2017, all Septic System Permit applications for new installation, repairs, modifications and such are to be submitted directly to the SNC and **NOT** to the City of Cornwall Building Division. Any permits will be issued by the SNC. Please notify and consult with your Sewage System Designer.*

OCCUPANCY OF NEW DWELLINGS:

As a reminder, the Ontario Building Code (OBC) requires that an Occupancy Inspection be conducted and must pass inspection before taking occupancy of a new dwelling. This inspection is a crucial step in ensuring that basic life safety systems are in place and key building components and systems are complete, operational and inspected. Failing to obtain Occupancy Approval is a serious contravention of the Provincial Building Code (OBC). A complete list of the conditions for occupancy is listed in Division C Subsection 1.3.3. - Occupancy of Buildings.

Not only is it illegal for new homeowners or tenants to move into their new home without an Occupancy Inspection being passed, but it also places the Developer or Contractor in a serious position of liability if an unfortunate event were to occur; let's work together to prevent this!

How this will affect you: Please remember that all residential construction projects requiring an Occupancy Inspection must schedule and obtain a PASSED Occupancy Inspection prior to permitting individuals from occupying a new dwelling unit. Note that occupancy is defined in the OBC to include any persons, animals and ***property*** *that is non-construction related being present onsite. Under the Provincial Offenses Act, Building Officials do have the authority to issue* ***FINES*** *to any and all parties contravening the Ontario Building Code; this can include new homeowners and/or tenants. This is often a stressful time for new homeowners or tenants therefore; we urge Contractors and Developers to plan well ahead to allow for Occupancy inspections.*

LOT GRADING:

The Infrastructure Planning Division of the Municipal Works Department is responsible for approving the Lot Grading Plans prior to the issuance of a Building Permit; the Building Division has been working closely with Municipal Works in an effort to help streamline the process. Building Permit applications will require greater detail concerning Lot Grading. More specifically, submissions will require the following geodetic elevations on both a Grading Plan and on a Wall Section, reference to a Plan of Subdivision or Lot Grading Plan:

- Top of Foundation Wall;
- Finished Grade at Foundation Wall;
- Top of Footing;
- Underside of Footing.

How this will affect you: More information on this will be forthcoming in the very near future. However, begin to consider how this information will be incorporated into your drawings for Building Permit Applications.

STAFF SPOTLIGHT:

RAYMONDE MCDONALD

Raymonde has been serving the City of Cornwall for over 12 years, most recently as Administrative Support to our Building & By-Law Division. Did you know that she is the lovely lady that you speak with when booking inspections? Raymonde does an amazing job in organizing our Building Officials' inspection schedule. Remember to call well ahead to book; the OBC commits the municipality to conducting a site inspection within two (2) days beginning the day following the inspection request.