

OVERVIEW SUMMARY DOCUMENT

POTENTIAL CHANGES TO ONTARIO'S BUILDING CODE:

SUMMER AND FALL 2017 CONSULTATION

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Table of Contents

INTRODUCTION	5
REVIEW OF BUILDING REGULATIONS	6
CONTEXT FOR CONSULTATION	7
Implementing the Climate Change Action Plan	7
Other Government Initiatives That Support the Climate Change Action Plan	8
Mass Timber (Tall Wood Structures)	9
Consultation Discussion Items: Potential Future Building Code Amendments	9
SEEKING YOUR INPUT	10
1. IMPLEMENTING THE CLIMATE CHANGE ACTION PLAN	10
I. Energy Efficiency Requirements for Houses	10
II. Energy Efficiency in Large Buildings	15
III. Energy Efficient Renovations in Houses and Large Buildings	17
IV. Electric Vehicle Charging in New Multi-Unit Residential Buildings	18
V. Other Green Technologies	19
2. SUPPORTING ADAPTATION TO CLIMATE CHANGE	21
I. Hurricane Straps in New Houses	21
II. Backwater Valves in Houses	21
3. OTHER TECHNICAL PROPOSALS	22
4. CONSULTATION DISCUSSION ITEMS: POTENTIAL LONGER-TERM BUILDING CODE ACT AND BUILDING CODE AMENDMENTS	22
PROPOSED FUTURE INITIATIVES TO SUPPORT THE CLIMATE CHANGE ACTION PLAN	22
I. Commissioning of Large Buildings	22
II. Adaptive Thermostats	24
III. Sub-metering	24
IV. Other	24
5. CONSULTATION PROCESS	25
PUBLIC AND INDUSTRY CONSULTATION	25
TECHNICAL ADVISORY COMMITTEES	25
POTENTIAL BUILDING CODE CHANGES	25
COMMENT SUBMISSION	25
Steps to Submit Comments:	26
Comment Form for Potential Changes to the 2017 Building Code	27
Comment Form for Consultation Discussion Items: Potential Longer-Term Building Code Act and Building Code Amendments	28
APPENDIX A: BUILDING CODE CHANGE PROPOSALS	29
APPENDIX B: PROPOSED BUILDING CODE CHANGE IMPLEMENTATION TIMELINES	30
APPENDIX C: ONTARIO BUILDING CODE SUPPLEMENTARY STANDARDS	31
Supplemental Standard for Houses and Small Residential Buildings (SB-12)	31
Supplemental Standard for Large Buildings (SB-10)	31
General	31
APPENDIX D: ONTARIO'S BUILDING CODE AND CODE DEVELOPMENT PROCESS	32
ONTARIO'S BUILDING CODE	32
Other Relevant Regulations	33
Code Development in Ontario	35
National Code Development Process	35
Ministry of Municipal Affairs	36

Introduction

The Ministry of Municipal Affairs held a comprehensive consultation in the fall of 2016 on changes being considered as part of the next edition of the Building Code. The ministry is now seeking stakeholder and public input on additional proposed Building Code requirements to reduce greenhouse gas (GHG) emissions in the building sector in support of the government's Climate Change Action Plan. An executive summary of this consultation is available.

Ontario has legislated GHG emissions reduction targets under the *Climate Change Mitigation and Low-carbon Economy Act, 2016*. The Act establishes Ontario's 2020, 2030, and 2050 GHG reduction targets in law:

- 6 per cent below 1990 emission levels by 2014;
- 15 per cent below 1990 levels by 2020;
- 37 per cent below 1990 levels by 2030; and
- 80 per cent below 1990 levels by 2050.

The government is committed to partnering with builders, designers, industry experts and members of the public to provide support in achieving this goal.

The government's Climate Change Strategy, released in October 2015, sets out Ontario's vision for Ontario to 2050 and outlines the path to a prosperous, climate resilient, low-carbon society where GHG reductions is part of our growth, efficiency and productivity.

The [Climate Change Action Plan](#), released in June 2016, outlined specific actions for the building sector and Building Code to help Ontario reach these targets and to mitigate climate change.

Buildings, and the energy they consume, account for almost one quarter of Ontario's total GHG pollution. Between 1990 and 2012, buildings sector emissions per square meter improved significantly. However, total emissions still rose due to population and economic growth, and increased building floor space resulting from both new buildings and additions.

Ontario's buildings sector presents a particular challenge because many existing buildings were built at a time when energy efficiency was less of a priority and climate change was not considered.

"We have all the right tools to fight climate change – they're the very things that define us as Ontarians: innovation, perseverance, a connection to our environment, and a version of a brighter future for our children and grandchildren. And we have a collective will to work together to get things done, to solve problems, seize opportunities and carve out the future we deserve."

- Ontario Premier Kathleen Wynne,
[Climate Change Action Plan](#)

To date, Ontario has reduced energy use in buildings through conservation programs, stricter requirements in the Building Code, product efficiency regulations, greening the electricity grid, and improved access to energy information for consumers.

Ontario will build upon progress made. The province will continue to reduce GHG pollution in existing housing and other buildings, and help ensure new buildings do not contribute to increased net GHG pollution.

Every five to seven years, a new Building Code is issued to implement government priorities and reflect changes in the model national construction codes. Each new edition of the Building Code includes proposed changes submitted by industry, experts and members of the public. The proposals included in this consultation document are for potential inclusion in the next edition of the Building Code. Please see Appendix B for a timeline of proposed Building Code change implementation.

As the Building Code does not generally apply to existing buildings, these proposed changes would not require retrofitting of existing buildings. However, the Building Code does apply to new construction and to areas of a building undergoing renovation; so this document includes energy efficiency requirements for renovations.

The proposed changes also include a limited number of technical changes to other areas of the Building Code.

This consultation document includes a description of the proposed changes to the Building Code, provides a link to the technical descriptions of the proposed changes, and explains how to provide input on the proposed changes. It is divided into two parts – this Overview and 25 detailed Technical Building Code Change Proposals:

1. The Overview describes what the Building Code currently requires, the need for change and the proposed change.
2. The Technical Building Code Change Proposals include current Building Code wording (if applicable), proposed new wording, and a rationale for each change. These proposals are drafted in detailed technical language and are generally intended for review and comment by specialized experts.

Review of Building Regulations

Ontario's Building Code is a regulation made under the Building Code Act. It sets out technical and administrative requirements related to the construction, renovation, change of use and demolition of buildings. The Ministry of Municipal Affairs is responsible for the administration of the Building Code Act and Building Code.

The Building Code works in conjunction with other legislation, regulations and standards, such as:

- Electrical Safety Code
- Fire Code
- Occupational Health and Safety Act and Regulations
- Regulations developed by the Technical Standards and Safety Authority
- Accessibility for Ontarians with Disabilities Act, 2005
- Energy Efficiency Legislation, Regulations and Standards.

Many of the proposed changes to the Building Code included in this consultation document would work in conjunction with potential changes to other legislation, regulations and standards. For example, MMA would consult with the Ministry of Government and Consumer Services and the Electrical Safety Authority on proposed Building Code changes to support electric vehicle charging to determine if any complementary changes to the Electrical Safety Code are required. For more information on these regulations and relevant enforcement bodies please see Appendix D.

Context for Consultation

Implementing the Climate Change Action Plan

For more than a decade, Ontario has been a North American leader in energy efficient Building Code standards. The 2012 Building Code maintained this leadership and increased energy efficiency requirements for houses and large buildings, through provisions which came into effect on January 1, 2017.

As a result, a house constructed after January 1, 2017 is 15 per cent more energy efficient than a house constructed in 2012. A large building constructed after January 1, 2017 is 13 per cent more energy efficient than a large building constructed in 2012.

In 2017, a new house consumes 50 per cent less energy than its 2005 equivalent, and a new large building consumes 35 per cent less energy than its 2005 equivalent.

Despite Ontario's leadership, buildings are still a substantial source of GHG emissions. In 2015, the building sector was responsible for 22 per cent of Ontario's GHG emissions.

Ontario's Climate Change Action Plan outlines actions to significantly reduce carbon emissions from new buildings. Proposed Building Code changes included in this consultation would provide Ontario an opportunity to build on its leadership in energy efficiency standards and accelerate GHG emissions reductions from the building sector.

By 2030, we envision that Ontario will have put in place buildings-science expertise, production capacity for buildings materials, and the technologies and workforce to maintain and build near-net-zero buildings.

Despite Ontario's leadership, buildings are still a substantial GHG emitter. In 2015, the Ministry of the Environment and Climate Change estimated that the building sector was responsible for 22 per cent of Ontario's GHG emissions.

Under the *Climate Change Mitigation and Low-carbon Economy Act, 2016*, Ontario committed to minimizing GHG emissions in the province and set an economy-wide long-term goal: reduce GHG emissions by 80 per cent below 1990 levels by 2050. To help mark progress and keep on track, the province has set two mid-term targets:

- 15 per cent below 1990 levels by 2020
- 37 per cent below 1990 levels by 2030

The government is committed to partnering with builders, designers, industry experts and members of the public to provide support in achieving this goal.

Ontario's Building Code is an important vehicle for implementing a number of the Climate Change Action Plan commitments, including:

- Updating the Building Code with long-term energy efficiency targets for new net zero carbon emission small buildings that will come into effect by 2030 at the latest.
- Increasing the use of electric vehicles by requiring that all new houses and workplaces in Ontario are equipped with electric vehicle charging infrastructure.
- Setting green development standards, whereby municipalities would be able to pass by-laws related to certain green standards where there are technical standards in the Building Code and those standards are specifically identified for this purpose in the Building Code.

Other Government Initiatives That Support the Climate Change Action Plan

The proposed Building Code changes are part of a larger government initiative under the Climate Change Action Plan to reduce GHG emissions in buildings. It is important to recognize that most GHGs emitted by the building sector are from existing buildings. In the Climate Change Action Plan, the government committed to developing a Green Ontario Fund that would help homeowners and businesses access and finance technologies to make existing buildings more energy efficient and achieve GHG emission reductions in buildings. Examples include:

- Reducing GHG emissions from energy intensive heating sources like old gas boilers and oil furnaces
- Increasing the use of available technologies like solar thermal and solar energy generation systems, geothermal and air-source heat pumps, and energy storage systems.

In addition, the Green Ontario Fund may stimulate the construction of new buildings that exceed the energy efficiency requirements in the Building Code.

Mass Timber (Tall Wood Structures)

Another way for new construction to leave a smaller carbon footprint is to use building materials that generate fewer carbon emissions when they are created. Wood is a renewable, carbon sequestering product that is considered to be a new frontier for tall building design. Mass timber construction in buildings up to six storeys is permitted under the current 2012 Building Code. Structural sufficiency and fire safety of buildings are among the key purposes of the Building Code, as set out in the Building Code Act, 1992. As such, structural and fire safety performance of buildings are included in the objective-based requirements of the Building Code. Regardless of materials used, structural and fire safety compliance with the Building Code may be achieved if the applicable objective-based requirements are met.

If proponents can demonstrate that the building will achieve the level of performance required by the Building Code, including structural sufficiency and fire safety objectives and requirements, mass wood buildings can currently be permitted as an alternative solution at higher than six storeys (alternative solution refers to a method of complying with the Building Code that allows for designs that are not specifically addressed in the Building Code). Over the past two years, the Ministry of Natural Resources and Forestry has been working on a guide to help designers develop alternative solutions under the Building Code. The Ministry of Municipal Affairs has been engaging municipal building officials to advise them of their ability to approve mass timber designs and to present a draft guide for their consideration.

Work on this guide is still ongoing and it is expected to be released later in 2017.

To further support GHG emission reductions in buildings, the Ministries of Municipal Affairs, Natural Resources and Forestry, and Advanced Education and Skills Development plan to launch a Mass Timber building program, as part of the Climate Change Action Plan that is comprised of three parts:

1. A program to provide supplemental funding to support tall wood building construction,
2. A research component on tall wood construction, and
3. A skills training program aimed at individuals who would be using these materials in tall wood construction.

Consultation Discussion Items: Potential Future Building Code Amendments

The government also welcomes input on longer-term issues that could inform discussion on potential future changes to the Building Code or other regulations and standards. A consultation of this nature is a departure from typical Building Code consultations, which usually focus on detailed, technical near-term changes to the Building Code, complete with proposed regulatory language. Instead, this portion of the consultation is designed to seek participation and input from the public and building

sector in a discussion of how buildings may be constructed and perform in the future. The items for discussion include commissioning of new large buildings, adaptive thermostats, and sub-metering.

Seeking Your Input

Public consultation is an important part of developing legislation and regulations in Ontario. Consultations have traditionally played a key role in shaping the Building Code. This consultation document is designed to generate input from building sector stakeholders and the public on the current proposed changes to the Building Code.

This Overview also includes proposed in-effect dates for the changes being considered. The government is seeking your input regarding appropriate time-frames to achieve the proposed amendments, taking into consideration issues such as urgency, industry capacity, and requirements for building sector transition. See Appendix B for a timeline of proposed Building Code change implementation.

It is important to note that proposed changes and implementation timelines contained in this document are strictly for discussion purposes and do not represent final government policy. Your feedback is valued, and will be seriously considered before the government makes final decisions on the proposed amendments.

For full details on how to submit comments, please see Section 5 of this document. The Ministry of Municipal Affairs must receive your response to this consultation by September 29, 2017. We look forward to receiving your feedback.

1. Implementing the Climate Change Action Plan

As part of the next edition of the Building Code, the Ontario government is proposing a range of initiatives to reduce GHG emissions.

I. Energy Efficiency Requirements for Houses

The Climate Change Action Plan committed the government to “update the Building Code with long-term energy efficiency targets for new net zero carbon emission small buildings that will come into effect by 2030 at the latest, and consult on initial changes that will be effective by 2020. Ontario will consult on how to best achieve these targets through Building Code improvements” (Ontario’s [Climate Change Action Plan](#), page 27, Building and Homes, item 5.1).

To achieve these goals, the Ministry of Municipal Affairs is proposing to establish energy efficiency requirements for houses that would come into effect in a phased manner by 2022. This approach would be similar to the performance target approach used in achieving energy efficiency targets in the 2006 and 2012 versions of the Building Code. It would also support the Climate Change Action Plan commitment to move houses toward net zero in the future.

Proposed changes would be made to the Building Code and included in updates to the Building Code's Supplementary Standard, SB-12, which is applicable to houses and small residential buildings. Please see Appendix C for additional information regarding SB-12.

2019: Near-Term Energy Efficiency Requirements for Houses

An additional change with respect to energy in houses and small buildings is proposed to come into force on the date that the next edition of the Building Code takes effect, which is proposed to be January 1, 2019. This change would remove reference to an option for meeting energy efficiency performance requirements to help reduce GHGs. The primary intent is to remove the option to allow for design based on the National Research Council's EnerGuide 80 rating, as this standard has been replaced.

2020: Near-Term Energy Efficiency Requirements for Houses

The Ministry of Municipal Affairs is proposing to include new requirements in the next edition of the Building Code that would contribute to the construction of even more energy efficient houses that will help to meet provincial GHG emission reduction targets in the future. These requirements are proposed to come into effect in 2020.

Continuous insulation

Improving the building envelope is essential to increase the energy efficiency of a house. Building envelope refers to the components of a building that are in contact with the outside environment such as its roof, windows, doors, above-grade and below grade walls, exposed floors and basement floors.

- Energy Efficiency Requirements for Houses
- **Proposed in-effect date: 2020**
- Continuous insulation
- Triple-pane windows and sliding doors
- Air leakage testing
- Further limitations to building envelope trade-offs

Continuous insulation is insulation that goes across all structural members without thermal bridges other than fasteners and service openings. It is generally installed on the exterior of the building for above-grade walls. It increases the energy efficiency of a house by reducing the thermal bridging effects and limits heat transfer through wall studs, thereby reducing the amount of energy needed to heat or cool the building. Improved energy efficiency leads to fewer GHG emissions.

Continuous insulation was introduced in most of the compliance options found in the Building Code's Supplementary Standard (SB-12, which is applicable to houses and small residential buildings) that came into effect in 2017. Some builders already use continuous insulation to achieve a well-insulated building envelope, however, the Building Code does not currently mandate continuous insulation.

To increase the energy efficiency of a new house's building envelope, the Ministry of Municipal Affairs is proposing to require the use of continuous insulation in all wall assemblies.

Triple-pane windows and sliding doors

Windows and sliding doors are also important components for energy efficient building envelopes. The Ministry of Municipal Affairs is proposing to improve the U-values of all windows. Windows included in SB-12's prescriptive packages would require a U-value at or below 1.4, the value for a common triple-pane window. This would help to reduce heat transfer and energy consumption.

Currently, the Building Code does not require triple-pane windows and sliding doors as a standard component in new house construction. However, they were introduced in a number of the compliance options in SB-12 that came into effect in 2017.

The Ministry of Municipal Affairs is proposing to require that all new houses be constructed using triple-pane windows and sliding doors.

Air tightness testing

As building envelope requirements for new houses become increasingly stringent, houses would become more air-tight. This means reduced air intrusion, resulting in less heat loss in the winter, less heat gain in the summer and further reduction in GHGs emissions.

Measuring the rate of air leakage in a newly constructed house through the use of "blower door testing" helps determine exactly how air-tight a building is, and therefore how energy efficient its envelope is.

Some builders currently use "blower door" testing in newly constructed houses to identify leaks in the building envelope that need to be sealed prior to installing drywall. Builders also strive to meet air-tightness targets to attain particular energy efficiency labels (e.g. Energy Star for New Homes).

Air leakage testing has not been universally adopted in Ontario and is not currently required in the Building Code. However, it is encouraged with trade-offs found in SB-12, under which builders are allowed to use lower efficiency wall assemblies if particular air-tightness targets are met.

To help increase awareness about the effectiveness of, and increase capacity for, air leakage testing, the Ministry of Municipal Affairs is proposing to mandate air leakage testing in new houses, and that test results be provided as a condition of occupancy. It is important to note, however, specific air-tightness requirements are not being proposed at this stage. Instead, it is intended that air tightness requirements would be included in the Building Code in 2022.

Put simply, the government is proposing a two-phase approach to air-tightness testing. In phase one – which would come into effect in 2020 – air-tightness testing and providing results will become mandatory. The intent of this proposed requirement is to help develop the building sector's capacity to test and construct energy efficient houses. In phase two, beginning in 2022, achieving a specific air-tightness performance level will be required. Please see the air-tightness section below for details on 2022 requirements.

Reducing building envelope trade-offs

Houses meet the energy efficiency requirements in the Building Code by following either a prescriptive-based or performance-based approach, as set out in SB-12.

Currently, the performance-based approach allows for trade-offs, or substitutions, between the energy efficiency of the building envelope and mechanical equipment. Greater energy efficiency can be achieved if houses are constructed with both energy efficient building envelopes and energy efficient mechanical heating systems. It is broadly accepted that the building envelope is an essential component that needs to be continuously improved to meet Ontario's long term targets.

The Ministry of Municipal Affairs is proposing to reduce the trade-offs option in the performance paths of SB-12 between building envelope and mechanical systems from 25 per cent to 10 per cent to help reduce energy consumption and GHG emissions from new houses.

2022: Longer-Term Energy Efficiency Requirements for Houses

In the next edition of the Building Code, the Ministry of Municipal Affairs proposes to include further energy efficiency requirements for new houses that would result in a 20 per cent reduction in energy consumption over 2020 requirements. These higher requirements would come into effect in 2022.

With the energy performance requirements contained in the 2012 version of the Building Code (that came into effect in 2017), a house built today consumes 50 per cent less energy than a house built in 2005. Under the proposed 2022 requirement, a new house would use approximately 60 per cent less of the energy of its 2005 equivalent.

Similar to existing energy efficiency requirements, compliance options would not be included in the Building Code itself, but in the Building Code's SB-12.

This energy consumption reduction would be achieved through the proposed Building Code changes outlined below.

Air tightness

Air-tightness testing of a new house helps to determine energy efficiency.

In 2022, the Ministry of Municipal Affairs is proposing to mandate that all new houses meet an air-tightness requirement of 2.0 air changes per hour (for detached houses) or 2.5 air changes per hour (for attached houses). Consistent with previous editions of SB-12, houses that exceed these requirements would receive credits. This means builders

Energy Efficiency Requirements for Houses

Proposed in-effect date: 2022

- Twenty per cent decrease in energy consumed by houses
- Air-tightness requirement
- Improved wall insulation
- Under-slab insulation
- More energy efficient triple-pane windows and sliding doors
- Eliminating building envelope trade-offs
- Enhanced mechanical equipment efficiency

that exceed these minimum air-tightness requirements would be able to use less stringent requirements for other specified building components and assemblies.

Insulation

Building on the proposed improvements for 2020, further requirements for 2022 generally include higher insulation values throughout the house and specifically, a requirement for continuous insulation for all above- and below-grade walls and exposed floors.

The proposed requirements would also include insulation under basement slabs in contact with the ground as well as perimeter insulation for exposed slab edges.

Improvements to insulation levels within a house are consistent with the trajectory of previous editions of the Building Code and reflect the importance of reducing energy consumption and GHG emissions to support the government's Climate Change Action Plan commitments.

Triple-pane windows and sliding doors

Adding to the previous round of proposed 2020 improvements, proposed requirements for 2022 include more energy efficient triple-pane windows and sliding doors with a U-value at or below 1.2. In combination with increasingly stringent insulation requirements, this would result in an even more energy efficient house and lower GHG emissions.

Eliminating building envelope trade-offs

Trade-offs for building envelopes typically occur when builders opt to use the performance-based approach to comply with the Building Code's energy efficiency requirements. Building on the proposed trade-offs reductions in 2020, proposed requirements for 2022 would eliminate the practice of allowing building envelope components to be traded-off with other systems, such as mechanical equipment.

Ending trade-offs would mean that, beginning in 2022, builders can only substitute building envelope components for other building envelope components. For example, a window with a lower than required performance level (U-value of 1.4, instead of 1.2) can be substituted for insulation that has a higher than required R-value. These equivalency calculations would be undertaken by specialists with expertise in energy modelling software packages, such as Natural Resources Canada's (NRCan) HOT2000.

Eliminating building envelope trade-offs protects the building envelope and underlines the pivotal role it plays in reducing energy consumption and GHG emissions from houses.

Mechanical equipment efficiency

In addition to focusing on improvements to the building envelope it is proposed that houses be constructed with highly efficient mechanical heating and cooling systems in order to increase energy efficiency.

The Building Code's prescriptive requirements are arranged for different efficiency levels of mechanical equipment. Currently, the Building Code mandates a range of

minimum energy efficiency standards to cover different fuel fired equipment and fuel types.

Proposed 2022 requirements would raise the minimum allowable energy efficiency levels for all equipment used in conjunction with prescriptive compliance paths.

Note that a draft SB-12 is included with the relevant Code Change proposal.

II. Energy Efficiency in Large Buildings

2019: Near-Term Energy Requirements for Large Buildings

The Ministry of Municipal Affairs is proposing some important measures that would help improve the energy performance of newly constructed large buildings and reduce their associated emissions.

It is proposed that designers have the option of meeting voluntary air-tightness targets where they are confident that air leakage rates can be appropriately reduced. Meeting specified air-tightness targets would, in turn, allow designers to claim credits (i.e. permission to use less stringent requirements for other specified building components and assemblies).

Energy Efficiency Requirements for Large Buildings

Proposed in-effect date: 2019

- Option to meet air-tightness targets in exchange for credits

Proposed changes would be made to the Building Code and included in updates to the Building Code's Supplementary Standard, SB-10. Please see Appendix C for additional information regarding SB-10.

2020: Near-Term Energy Requirements for Large Buildings

In addition, some exceptions to insulation requirements are proposed to be removed to reduce thermal bridging. For example, the ministry proposes to remove an exception when calculating the energy efficiency of slab edges and shelf angles on balconies of large buildings. As a result, by 2020, large buildings would need to demonstrate an improvement in their energy efficiency. These measures would help improve the thermal performance of the building envelope and support reductions in energy consumption and GHG emissions.

Energy Efficiency Requirements for Large Buildings

Proposed in-effect date: 2020

- Removal of exceptions when calculating certain thermal bridging effects in large buildings

Proposed changes would be made to the Building Code and included in updates to the Building Code's Supplementary Standard, SB-10.

2022: Longer-Term Energy Efficiency Requirements for Large Buildings

To further support GHG emissions reductions in Ontario and move buildings toward net-zero in the future, the Ministry of Municipal Affairs also proposes an overall 20 per cent decrease in energy consumed by large buildings, relative to those constructed today. Large buildings are generally those greater than 3 storeys or over 600 m² in building area, and include uses such as residential, commercial, and institutional.

When the energy performance requirements of the 2012 version of the Building Code came into effect in 2017, a large building now consumes 35 per cent less energy than its 2005 equivalent. Under these proposed requirements, intended to take effect in 2022, a new large building would consume 48 per cent less energy than its 2005 equivalent.

Similar to existing energy efficiency requirements, the new requirements and details about how to achieve this energy efficiency performance level would be included in SB-10's compliance paths.

These details would include new stringent requirements for building envelope components, such as walls, windows, roofs and floors; improved mechanical equipment efficiencies; and lower interior lighting power densities.

Similar to the approach for houses in 2020, it is proposed that all large buildings constructed in 2022 would be required to undergo air leakage testing but would not have to meet a specific air-tightness target. Credits would be provided for buildings that exceed a specified air-tightness criterion. Once again, the intent is to generate awareness of the benefits of building a robust building envelope and stimulate capacity to perform blower-door testing on an industry-wide basis.

As buildings become increasingly air-tight due to improvements in the thermal performance of the envelope, it becomes increasingly important to ensure that indoor air quality does not deteriorate. As is also required in other large buildings, MMA is proposing that all apartment building ventilation systems be required to have a heat or energy recovery unit (HRV).

A trade-off limitation would also be introduced to protect the thermal performance of the building envelope.

Large buildings are already required under the Building Code to meet specific requirements for peak load and GHG emissions. Proposed requirements for 2022 would continue to reduce peak electric demand.

Energy Efficiency Requirements for Large Building

Proposed in-effect date: 2022

- Further energy efficiency improvements that would result in an overall 20 per cent decrease in energy consumed by large buildings
- Mandatory air-tightness testing without a specified target
- Further limitations to building envelope trade-offs
- Requiring heat or energy recovery unit in apartment buildings

Taken together, the above measures would help reduce energy consumption and GHG emissions resulting from the construction of new large buildings in Ontario.

Note that a draft supplementary standard, titled SB-10 is included with the relevant Code Change proposal.

III. Energy Efficient Renovations in Houses and Large Buildings

Renovations under the Building Code Act refer to changes made to existing buildings that require a building permit. Renovation requirements apply when renovation work is voluntarily undertaken, and are generally not as stringent as Building Code requirements for new buildings as there may be challenges applying newer requirements to existing buildings. The Building Code does not generally require that existing buildings be renovated where the owner does not choose to do so. Renovations are also distinct from new additions to existing buildings. As always, an addition to a building is generally required to comply with the requirements for new construction.

Substantial opportunities exist to reduce GHG emissions in buildings by improving the energy efficiency of existing buildings, which represent roughly 99 per cent of Ontario's building stock in any given year.

Proposed energy efficiency requirements for existing buildings described below apply to certain renovations made to walls, ceilings, floor or roof assemblies, or replacement of windows, mechanical or lighting systems. The proposed renovation requirements would generally apply to the part of the building undergoing renovation.

Currently, when a building undergoes renovation, the Building Code does not require upgrades to energy efficiency levels. In contrast, the Building Code generally requires upgrades during renovations to the fire and structural safety, accessibility and health components of the part of a building being renovated. The proposed changes are intended to improve the energy efficiency level of the building during renovation, consistent with the approach already in place for these other standards.

The proposed requirements would apply to both houses and large buildings undergoing renovations, and take into account the practical difficulties that can be encountered in existing buildings and provide opportunity for energy efficiency improvements.

For example, renovation work that involves materially altering or repairing the building envelope, such as roofs, floors and walls that are exposed, may require additional insulation, where practical, and may require installation of an air and vapour barrier if these are not present.

Proposed requirements would also provide improved standards for renovation projects that replace windows, skylights, and sliding doors.

Energy Efficiency in Renovations

**Proposed in-effect date:
January 1, 2019**

- Requirements to improve the energy efficiency of buildings undergoing renovations

Lastly, when a renovation involves replacing space heating or cooling equipment, the proposed renovation changes would in some cases require improvement over existing conditions, and in others, improvement to meet current minimum energy efficiency standards.

By requiring energy efficiency upgrades during renovations, property owners would better capitalize on opportunities to reduce energy consumption at the same time as undertaking other renovation work. This would likely help lower their energy consumption and may also improve property values.

As many houses and large buildings fall short of current energy efficiency standards, when a building owner chooses to undertake a renovation, the proposed requirements could significantly reduce GHG emissions from buildings.

IV. Electric Vehicle Charging in New Multi-Unit Residential Buildings

Reducing transportation sector emissions is one of the five pillars of the government's Climate Change Action Plan. Expanding the use of electric vehicles (EVs) is key to reducing emissions. The government has set a target that 5 per cent of passenger vehicles sold/leased in Ontario in 2020 be electric and hydrogen powered ([Ontario Climate Change Action Plan](#), page 19).

Access to charging infrastructure has been identified as a potential hindrance to broader electric vehicle acceptance.

The Building Code currently allows electric vehicle charging infrastructure in new buildings, but does not require it in multi-unit residential buildings. In the previous consultation, the Ministry of Municipal Affairs proposed technical requirements for EV infrastructure in houses and workplaces. The ministry also asked for advice on electric vehicle charging requirements for newly built multi-unit residential buildings.

Now, the Ministry of Municipal Affairs is consulting on proposed technical changes to the Building Code that would require EV charging in 20 per cent of parking spaces and "rough-ins" in the remaining spaces in new multi-unit residential buildings where parking is provided within the building. In considering this proposal, the ministry proposes to work with the Electrical Safety Authority to ensure that appropriate references are made to the Electrical Safety Code. These changes are intended to help encourage uptake and use of electric vehicles now and in the future.

Concerns have been expressed about new requirements for electric vehicle charging in multi-unit residential buildings, many of which are condominiums. EV owners and users in condominiums and apartments may face challenges installing or gaining permission to install EV chargers or accessing parking spaces with EV chargers. Other concerns include EV parking spot ownership, particularly the ease with which people can exchange non-EV-enabled parking spots for EV-enabled spaces, responsibility for EV charging equipment insurance, and payment for the electricity used by EV owners.

Electric Vehicle Charging

Proposed in-effect date: January 1, 2019

- EV charging in new multi-unit residential buildings

In the near future, the Ministry of Government and Consumer Services is planning to consult on potential changes to the Condominium Act to make it easier for EV owners to access or install EV chargers in existing condominiums. Potential changes to the Condominium Act would enable more flexible arrangements regarding sharing EV parking spaces. The responses to that consultation would help inform potential Building Code requirements to make indoor parking facilities in new multi-residential buildings “EV-ready”.

V. Other Green Technologies

Green Building Standards and Green Roofs

A number of organizations have requested that municipalities have the authority to pass by-laws to require environmentally-friendly improvements for roofs (i.e. green or white roofs).

The Ministry of Municipal Affairs is proposing to develop environmentally-friendly roof standards for large buildings. These standards would establish consistent requirements across the province where a building permit applicant chooses to install such a roof.

Recent changes to the Municipal Act, City of Toronto Act and Building Code Act allow municipalities to pass by-laws regarding green standards in certain circumstances. Such bylaws could be passed only where there are technical standards in the Building Code and those standards are specifically identified for this purpose in the Building Code.

Other Green Technologies

**Proposed in-effect date:
January 1, 2019**

- green building standards and green roofs
- grey-water reuse
- solar-ready roofs

The Ministry of Municipal Affairs proposes to amend the Building Code to include standards for environmentally-friendly roof construction. If municipalities choose to pass a relevant by-law, the roof would need to be designed and constructed to meet the Building Code standard. The by-law could not establish standards that differ from the Building Code standard.

In cases where a municipality does not pass such a by-law, a builder could still voluntarily install an environmentally-friendly roof surface on a large building. Again, construction of these green roofs would need to comply with Building Code standards.

The Ministry proposes to include some limits on the power of municipalities to pass such by-laws. For instance, the Building Code could provide an exemption from the requirement to install an environmentally-friendly roof where a builder chooses to voluntarily install solar panels on the roof.

Grey-water Reuse

Grey-water is the waste water that flows from sinks, showers, tubs, and washing machines. Grey-water cannot be used for drinking purposes, but after it is treated, it can be re-used for things such as watering the garden or flushing toilets.

The Canadian Standards Association has developed a new standard for grey-water re-use, which the Ministry of Municipal Affairs proposes to reference to facilitate installing such systems. An additional grey-water proposal would provide more flexibility in how these systems are drained. These changes would reduce the amount of water a house requires from municipal and other systems and support water conservation. They would also reduce GHGs, as less energy would be required to pump and treat the re-used water.

Water Conservation

Water conservation is a key objective in the Building Code, which sets requirements for water fixtures in new houses and buildings. Increasingly stringent requirements have helped to reduce water consumption from fixtures such as showers, toilets, urinals and faucets. The proposed changes will harmonize the Building Code with provisions in the 2015 National Plumbing Code and support reductions in both water usage and water wastage.

In terms of water usage, bathroom faucet flow rates are proposed to be reduced from 8.35 to 5.7 litres per minute in houses, and from 8.35 to 1.9 litres per minute in buildings. To help prevent water wastage, automatic shut-off capabilities are proposed for buildings with public shower facilities to make sure that water is not wasted when the showers are not in use. This could help to reduce water consumption in gymnasiums, arenas, swimming pools and other recreation facilities. A similar proposal would require devices that prevent automatic flush cycles for urinals that are not being used.

On a broader level, water efficiency in buildings can help municipalities manage their own energy costs and consumption. Despite the fact that new buildings only represent a small fraction of the building stock, changes in the Building Code that improve water conservation can help reduce the total amount of energy and GHG emissions from water distribution and waste water treatment, for which municipalities are responsible.

Solar-Ready Roofs

Net-Zero buildings typically generate renewable energy through solar photovoltaic panels, rooftop building integrated photovoltaics or solar water panels. Making buildings ready to be Net-Zero in the future would necessitate strengthening their roofs so that solar panels can be installed later.

The Building Code does not currently require that a large building be ready to accept future installation of solar collection systems. Once a structure is built, structural sufficiency issues can prevent a solar installation from being cost effective, as roofs need expensive renovations to bear the weight of solar panels.

To address this, the Ministry of Municipal Affairs is proposing to require large buildings to use roof designs that facilitate the addition of solar technology and support the widespread use of solar energy systems. In addition, the ministry proposes including a conduit in both houses and large buildings to enable the future installation of solar collectors. These additional features would allow solar collection systems to be installed on roofs without expensive retrofits.

2. Supporting Adaptation to Climate Change

One of the major potential impacts of climate change is more frequent extreme weather events. The proposed Building Code changes seek to address climate change in two ways – through mitigation and adaptation.

Mitigation proposals reduce future GHG emissions by requiring more energy efficient buildings. Adaptation proposals address some of the climate change impacts Ontario is already experiencing, by making buildings more resilient in extreme weather events.

I. Hurricane Straps in New Houses

Hurricane straps are steel straps that can be used to connect a roof to a supporting wall in wood frame buildings such as houses. They are designed to strengthen the connection between a house's roof truss and wall assembly to improve building resilience in high wind events like tornados. Although hurricane straps do not guarantee that a roof will not lift off in extreme wind storms, they have been proven to improve a house's ability to avoid potential uplift during strong winds, provide more safety for occupants, and limit damage to neighbouring buildings.

Currently, the Building Code does not require hurricane straps for new houses.

To help buildings to be more resilient during severe weather events characteristic of climate change, the Ministry of Municipal Affairs proposes to require hurricane straps in all new houses.

Support Climate Change
Adaptation

**Proposed in-effect date:
January 1, 2019**

- Hurricane straps
- Backwater valves in houses

II. Backwater Valves in Houses

During consultation on proposed Building Code changes held in fall 2016, MMA consulted on requiring backwater valves in new houses. Backwater valves are one-way valves that are designed to shut and prevent backwater from entering into a building from over-filled municipal sewer systems during severe rain storms.

Based on feedback received during consultation, the government is currently considering requiring backwater valves in all new houses to help protect buildings against sewer backflow during severe rainfall events. These requirements would apply only in areas connected to municipal sewer systems, not to houses on their own on-site wastewater systems. This initiative would complement other proposed adaptation requirements.

3. Other Technical Proposals

In addition to the amendments proposed to support energy efficiency and climate change mitigation, the Ministry of Municipal Affairs is proposing three minor technical changes to the Building Code respecting fire safety and structural sufficiency. These changes would:

- Remove the requirement for the visual signalling component of a fire alarm in a building that is not served by electricity, as that component is not possible without electric power.
- Clarify that in a camp that accommodates ten or more workers, the smoke detector shall be connected to the building's fire alarm system.
- Remove outdated truss design standards referenced in the Building Code and replace them with more recent standards, and provide greater clarity when undertaking certain truss design calculations.

4. Consultation Discussion Items: Potential Longer-Term Building Code Act and Building Code Amendments

The government is also seeking input to inform potential changes to the Building Code Act, Building Code, and related regulations. Unlike the proposals in previous sections, this aspect of the consultation document is not based on specific Building Code requirements. Rather, it is intended to begin a dialogue on issues regarding how buildings should be constructed and perform in the future.

Proposed Future Initiatives to Support the Climate Change Action Plan

I. Commissioning of Large Buildings

Building commissioning can include a range of systems and assemblies that affect a building's overall energy consumption, such as heating, ventilation, and air conditioning (HVAC) systems, plumbing, building envelope, lighting and energy management control systems. Professionals involved in the commissioning process test and verify the performance of the various systems at scheduled intervals and then support the building's manager to operate and maintain these systems as intended. By ensuring that a building and its systems are operating as intended, building commissioning can support the government's energy-use and GHG emission reduction goals.

Many of today's large buildings are voluntarily designed with an ongoing building commissioning process. This may not have been the case for older buildings.

The Ministry of Energy's Large Building Energy and Water Reporting and Benchmarking initiative establishes reporting requirements for energy and water use. Under these requirements, which came into effect in February 2017, owners of certain-sized buildings are required to submit data about building energy and water usage to the Ministry of Energy on an annual basis. This information can also be disclosed publicly. Although outside the scope of the Building Code Act and Building Code, these requirements intend to help track energy usage and motivate building owners to make improvements to the building's energy efficiency. Building commissioning could be an effective complement to the Ministry of Energy's large building benchmarking initiative.

The Building Code currently establishes requirements for the design and construction of new buildings and existing buildings undergoing a change of use or renovation. The Ministry of Municipal Affairs is consulting on potential future requirements that could apply after a building has been occupied and that would, if implemented, require mandatory building commissioning for large buildings, including inspection by a qualified person. The questions below are intended to guide input on this topic.

Questions:

1. What parts of the building should be subject to building commissioning to support the government's energy conservation and GHG emissions goals?
2. Should building commissioning apply to all large buildings or a select group of large buildings based on either occupancy type or size (e.g. assembly occupancies that are a minimum 4,645 m² (50,000 sq/ft) in size)?
3. How regularly should a building commissioning process be reviewed by municipal enforcement officials, and what information should be made available to them?
4. Beyond any building commissioning process, what remedial actions can building owners/operators be reasonably required to take to ensure that buildings continue to operate as originally designed?
5. How can proposed regulations for home energy audits, and large building energy reporting and benchmarking, complement potential future requirements for building commissioning?

II. Adaptive Thermostats

Adaptive thermostats reduce energy consumption by analyzing occupant energy usage preferences and adjusting heating and cooling settings accordingly. The Ministry of Municipal Affairs is consulting on whether adaptive thermostat requirements should be included in future editions of the Building Code. The questions below are intended to guide input on this topic.

Questions:

1. Does the building industry currently incorporate adaptive thermostat technologies?
2. How much do adaptive thermostats reduce GHG emissions?
3. Are there alternative technologies that achieve similar energy reductions being used by the industry?
4. Should the Building Code require adaptive thermostats in all new houses and multi-unit residential buildings?

III. Sub-metering

Sub-metering is the installation of utility meters in individual commercial, office, or residential suites so that tenants can track and pay for their fuel, electricity and water use. By allowing occupants to determine how much energy, water or gas they use, they may be motivated to reduce consumption and thus reduce GHG emissions.

The Building Code currently provides for certain building systems to be designed to facilitate future sub-metering for electricity, but not that sub-metering be required. Certain authority to require sub-metering for electricity exists in the Energy Consumer Protection Act, 2010. The Ministry of Municipal Affairs is consulting on whether the current Building Code presents any barriers for sub-metering, or whether it can be amended in the future to better support sub-metering for water, heating and electricity in multi-unit residential and commercial buildings. The questions below are intended to guide input on this topic.

Questions:

1. Can the Building Code better enable sub-metering for electricity? If so, what amendments could be made to enable sub-metering?
2. Should the Building Code simply require the “rough-in” of electrical systems to facilitate sub-metering installation by responsible utilities or authorities? If so, are there products available that would assist in future sub-metering?
3. Should the Building Code’s requirements for sub-metering be expanded to better enable sub-metering for water and gas supply?

IV. Other

1. Do you have any other feedback that would help inform potential future changes to the Building Code?

5. Consultation Process

Public and Industry Consultation

Public and industry consultation will launch July 14 and will end on September 29, 2017. This consultation document will be posted on the Regulatory Registry, Environmental Registry, and the Ministry of Municipal Affairs website. During this period, the ministry intends to host a series of technical briefings to explain the proposals, answer questions and solicit feedback.

Technical Advisory Committees

Technical Advisory Committees (TACs) are convened by the ministry and are comprised of Building Code experts that meet periodically to offer the government advice on proposed Building Code amendments. The TACs would meet following the public consultation period. They would review the potential Building Code changes developed by the government and consider the consultation results. The TACs would then provide their advice to the ministry. The committees' advice would consider factors such as the technical feasibility of potential Building Code changes, alignment with Building Code objectives, cost implications, impact on design flexibility, and capacity of industry to implement and the ability to enforce.

Potential Building Code Changes

The 25 potential Building Code changes included in this consultation are summarized in the table found in Appendix A. A full description of the proposed changes can be seen on the Building Code website: ontario.ca/buildingcode.

The potential changes are organized sequentially, based upon the numerical structure of the Building Code (e.g., changes to Division B, Part 3 precede changes to Division B, Part 4).

Comment Submission

We look forward to your feedback on potential changes to the Building Code. Your active involvement helps ensure that potential Code changes are fully informed, technically and economically feasible, and enforceable. Comments are also appreciated on the timing of the potential changes. Note: This “hardcopy” or “paper” edition of the Overview is reproduced on the Building Code website at ontario.ca/buildingcode.

Steps to Submit Comments:

- [Review the Overview](#) and [Technical Code Change Proposals](#)
- Questions about the consultation process may be directed to buildingcode.consultation@ontario.ca or you can call us at 416-585-6666.
- [Provide feedback on a consultation discussion item by completing the comment form](#)
- [All feedback on the content of the proposed Building Code changes should be submitted through the online contact form](#) or sent by mail.
 - Provide feedback on a Technical Code Change Proposal by completing the online comment form
 - Provide feedback on a consultation discussion item by completing the comment form.
 - Submit your comments by mail at:
2017 Next Edition Building Code Consultation
c/o Building and Development Branch
Ministry of Municipal Affairs
777 Bay Street –16th Floor
Toronto, ON M5G 2E5

You are encouraged to submit additional material in a manner that best allows you to express your views on the potential Building Code amendments.

If you do not support the potential changes, or would support the changes with modifications, please include an explanation of the rationale for your concerns to help the ministry and the Technical Advisory Committees understand your views.

The Ministry of Municipal Affairs must receive your response to this consultation by:

September 29, 2017

Personal information provided in responses to Building Code consultations is collected under the authority of the Ministry of Municipal Affairs and Housing Act for consultative purposes and for contacting you should we need to clarify your response to this consultation. Responses to consultations (minus addresses, where provided) may be shared with provincial and national building and fire code development committees. Questions about the collection of personal information may be submitted to buildingcode.consultation@ontario.ca.

Comment Form for Potential Changes to the 2017 Building Code

Indicate change number and make additional copies of this form for each change.

A. Respondent Information	
Name:	_____
Title:	_____
I am responding on behalf of:	<input type="checkbox"/> Myself <input type="checkbox"/> Organization (specify): _____
Function:	<input type="checkbox"/> Building Official <input type="checkbox"/> Builder/Contractor <input type="checkbox"/> Supplier/Manufacturer <input type="checkbox"/> Designer/Code User <input type="checkbox"/> Property Owner/Public <input type="checkbox"/> Sewage Hauler/Installer
B. Potential Code Change	
Code Change Number:	_____ (e.g. A2-01-01-01)
Mark one of the following with an "X":	
<input type="checkbox"/> I support the potential requirements. (do not provide a reason below)	
<input type="checkbox"/> I would support the potential requirements with modifications. (provide a reason below)	
<input type="checkbox"/> I do not support the potential requirements. (provide a reason below)	
Reasons:	_____ _____ (Please attach additional sheets as necessary)
<p>Personal information provided in response to Building Code Consultation is collected under the authority of the Ministry of Municipal Affairs and Housing Act for consultative purposes, and for contacting you should we need to clarify your response to this consultation. Responses to the consultation may be shared with provincial and national building and fire code development committees. Questions about the collection of personal information may be submitted to the Ministry of Municipal Affairs, 16th Floor, 777 Bay Street, Toronto, Ontario, M5G 2E5 or by email to buildingcode.consultation@ontario.ca</p>	

Comment Form for Consultation Discussion Items: Potential Longer-Term Building Code Act and Building Code Amendments

Important: Each topic/question response you prepare needs to be a separate document. Include footers with the topic/question ID number and page number information (e.g. Question II. 3. — Page 1 of 3). Complete one comment form for each response you prepare and attach it to the corresponding response document.

Hint: If you are providing input for more than one topic/question, complete the respondent information and then make enough copies for each response document.

A. Respondent Information		
Name: _____		
Title: _____		
I am responding on behalf of:		
		<input type="checkbox"/> Myself
		<input type="checkbox"/> Organization (specify): _____
Function:		
<input type="checkbox"/> Building Official	<input type="checkbox"/> Builder/Contractor	
<input type="checkbox"/> Supplier/Manufacturer	<input type="checkbox"/> Designer/Code User	
<input type="checkbox"/> Property Owner/Public	<input type="checkbox"/> Sewage Hauler/Installer	
B. Consultation Discussion Items (Mark only one of the following with an "X")		
I. Commissioning of Large Buildings <input type="checkbox"/> 1. <input type="checkbox"/> 2. <input type="checkbox"/> 3. <input type="checkbox"/> 4. <input type="checkbox"/> 5.	II. Adaptive Thermostats <input type="checkbox"/> 1. <input type="checkbox"/> 2. <input type="checkbox"/> 3. <input type="checkbox"/> 4.	III. Sub-metering <input type="checkbox"/> 1. <input type="checkbox"/> 2. <input type="checkbox"/> 3. IV. Other <input type="checkbox"/> 1.
Input: (Please attach the corresponding response document)		
<p>Personal information provided in response to Building Code Consultation is collected under the authority of the Ministry of Municipal Affairs and Housing Act for consultative purposes, and for contacting you should we need to clarify your response to this consultation. Responses to the consultation may be shared with provincial and national building and fire code development committees. Questions about the collection of personal information may be submitted to the Ministry of Municipal Affairs, 16th Floor, 777 Bay Street, Toronto, Ontario, M5G 2E5 or by email to buildingcode.consultation@ontario.ca</p>		

Appendix A: Building Code Change Proposals

Please use below link to access Building Code change proposals:

<http://www.mah.gov.on.ca/Page16490.aspx>

Appendix B: Proposed Building Code Change Implementation Timelines



Proposed to come into effect January 1, 2019:	Proposed to come into effect 2020:	Proposed to come into effect 2022:
<p>Proposals include:</p> <ul style="list-style-type: none"> • Energy efficiency requirements for renovations • Electrical vehicle charging in new multi-unit residential buildings • Green building standards and green roofs • Referencing a new standard for grey-water reuse • Water conservation • Solar-ready roofs • Hurricane straps in new houses • Option to meet air tightness targets in exchange for credits in large buildings • Other technical proposals 	<p>Proposals include:</p> <ul style="list-style-type: none"> • Energy efficiency requirements for houses <ul style="list-style-type: none"> ○ Continuous insulation ○ Triple-pane windows and sliding doors ○ Air leakage testing ○ Further limitations to building envelope trade-offs • Energy efficiency requirements for large buildings <ul style="list-style-type: none"> ○ Removal of insulation exceptions to reduce thermal bridging effects 	<p>Proposals include:</p> <ul style="list-style-type: none"> • 20 per cent decrease in energy <u>consumed by</u> houses <ul style="list-style-type: none"> ○ Air tightness requirement ○ Improved wall insulation ○ Under-slab insulation ○ More energy efficient triple-pane windows and sliding doors ○ Eliminating building envelope trade-offs ○ Enhanced mechanical equipment efficiency • 20 per cent decrease in energy <u>consumed by</u> large building types <ul style="list-style-type: none"> ○ Mandatory air tightness testing without concern for results ○ Further limitations to building envelope trade-offs ○ Expansion of heat or energy recovery requirements to apartment buildings

Appendix C: Ontario Building Code Supplementary Standards

Supplemental Standard for Houses and Small Residential Buildings (SB-12)

The current SB-12 was issued on July 7, 2016 and came into force January 1, 2017. This edition has a chapter that contains requirements that were applicable to permits applied for before January 1, 2017. As these requirements no longer apply, they would be removed from the version of the SB-12 that would be referenced in the new edition of the Building Code. That version of SB-12 would be renamed SB-12A, and would remove the existing Chapter 2 in its entirety. SB-12A is intended to be in effect from January 1, 2019 until January 1, 2022 when it would be replaced by SB-12B which would introduce further enhanced energy efficiency requirements.

Supplemental Standard for Large Buildings (SB-10)

The current SB-10 was issued on December 22, 2016 and came into force January 1, 2017. This edition has Divisions that contain requirements that were applicable to permits applied for before January 1, 2017. As these requirements no longer apply, they would be removed from the version of the SB-10 that would be referenced in the new edition of the Building Code. That version would be renamed SB-10A, and would remove the existing Divisions 2 and 4 in their entirety. SB-10A is intended to be in effect from January 1, 2019 until January 1, 2022 when it would be replaced by SB-10B which would introduce further enhanced energy efficiency requirements.

General

Some of the energy efficiency requirements described in this consultation paper, such as air tightness testing and triple-pane windows, are presently proposed for inclusion in Part 12 of the Building Code. However, the Ministry may consider including them as appropriate in the proposed new Supplementary Standards described above.

The proposed SB-12A and SB-10A are not included in this consultation, as their content would be similar to SB-12 and to SB-10. You can find the existing SB-12 [here](#) and the existing SB-10 [here](#). The proposed SB-12B and SB-10B are included as support material to the relevant Code Change Proposal sheets. You can find the proposed SB-12B [here](#) and SB-10B [here](#). Comments on the proposed new Supplementary Standards SB-12B and SB-10B are welcome.

Appendix D: Ontario's Building Code and Code Development Process

Ontario's Building Code

Ontario's current Building Code is authorized by the Building Code Act, 1992. It sets out technical and administrative requirements related to the construction, renovation, change of use and demolition of buildings.

The Building Code Act and the Building Code are administered by the Ministry of Municipal Affairs. Enforcement is the responsibility of local "principal authorities" – primarily municipalities, although conservation authorities and boards of health are responsible for enforcing the on-site sewage system and plumbing provisions of the Building Code in certain parts of the province.

The Building Code also addresses administrative matters, including, the building permit application process, construction inspections, building permit fees, and qualification requirements for certain building practitioners.

Under the Act, the Building Code is a regulation made by the Lieutenant Governor in Council. Amendments to the Building Code must be approved by the Cabinet of Ontario.

The first provincial Building Code came into effect in 1975. The Building Code superseded local building codes and was part of an effort to harmonize construction standards across the province. New editions of the Building Code were published in 1983, 1986, 1990, 1997, 2006 and 2012. Interim amendments to the Code are frequently made between publications of new editions. The Building Code was most recently amended in May 2017, which included requirements for retirement homes and two-unit houses, among other matters.

Ontario's Building Code is available on-line through the site at: ontario.ca/e-laws.

ServiceOntario Publications publishes the Building Code Compendium, which contains the Act, the Code, Supplementary Standards referenced in the Building Code, appendix notes and other documentation. The Compendium and other Building Code products can be ordered through the ServiceOntario website at: ontario.ca/publications.

Other Relevant Regulations

The Building Code Act, 1992 and the Building Code complement other legislations and regulations that:

- Regulate fire safety in existing buildings (the Fire Code)
- Regulate electrical safety in buildings (the Electrical Safety Code)
- Regulate specialized building systems (e.g., elevators and pressure vessels, which are the responsibility of the Technical Standards and Safety Authority)
- Regulate barrier free access of travel in public spaces (Accessibility for Ontarians with Disabilities Act)
- Regulate the construction process (Occupational Health and Safety Act)
- Regulate energy efficiency of appliances and products (Energy Efficiency Standards)

A brief summary of these regulations and their relevant enforcement bodies is provided below. For additional legislative/regulatory tools that the Building Code complements, please consult Division A of the Building Code, Definition of Applicable Law.

Fire Code

The Fire Code is a regulation under the Fire Protection and Prevention Act, 1997, that establishes minimum fire safety requirements for existing buildings and facilities.

Fire safety is an objective of the Building Code. Since 1975, the Building Code has contained comprehensive and rigorous fire safety requirements for the construction of new buildings and the change of use and renovation of existing buildings. Fire Code requirements complement the Building Code and apply to existing buildings even where no change of use or renovation is proposed. The Ministry of Municipal Affairs works with the Ministry of Community Safety and Correctional Services' Office of the Fire Marshal and Emergency Management (OFMEM) to enhance and/or clarify fire safety requirements in both regulations and help ensure consistency between them.

Electrical Safety Code

The Electrical Safety Code (ESC) is a regulation under the Electricity Act, 1998, that establishes the legal requirements for electrical installations, products and equipment. For example, the ESC includes requirements for installing and maintaining electrical equipment in buildings and street lighting. The ESC is used by designers, manufacturers, installers and enforcement officials.

The Electrical Safety Authority (ESA) is the administrative authority with enforcement responsibility for the ESC, and is overseen by the Ministry of Government and Consumer Services.

Technical Standards and Safety Authority

The Technical Standards and Safety Authority (TSSA) is the administrative authority responsible for enforcing technical standards under the Technical Standards and Safety Act, 2000 and Technical Standards and Safety regulations. The TSSA is responsible for enforcing matters such as:

- boilers and pressure vessels, and operating engineers
- elevating devices, amusement devices and ski lifts
- fuels
- upholstered and stuffed articles

Accessibility for Ontarians with Disabilities Act, 2005

The Accessibility for Ontarians with Disabilities Act, 2005 (AODA) aims to improve access for persons with disabilities with respect to goods, services, facilities, accommodation, transportation, employment, buildings, structures and premises by January 1, 2025. The Accessible Built Environment Standard, which addresses the internal built environment (i.e. buildings) and the external built environment (i.e. parking and sidewalks in public spaces), is one of five standards developed under the AODA. The Accessibility Directorate of Ontario at the Ministry of Economic Development and Growth is responsible for the administration of the AODA.

Accessibility requirements have been part of the Building Code since 1975 and have been enhanced over time with each new edition. As part of achieving Ontario's goal of an accessible Ontario by 2025, the Building Code sets a number of requirements related to common access and circulation throughout buildings, including minimum doorway and corridor widths, ramp dimensions, passing and rest spaces, and turning spaces.

Occupational Health and Safety Act

The Occupational Health and Safety Act (OHSA) provides the legal framework for the protection of health and safety for workers, including builders, in Ontario.

The OHSA sets out the rights and duties of all workplace parties including employers, constructors, supervisors and workers. The OHSA establishes offences and penalties and provides for enforcement by Ministry of Labour inspectors. Specific workplace hazards are addressed by the regulations under the OHSA.

Code Development in Ontario

Changes to Ontario's Building Code are made in response to:

- government priorities
- changes in other jurisdictions, especially to the model National Building Code and Plumbing Code
- proposals from the public and stakeholders
- changing technology and industry standards.

Potential Building Code changes are evaluated based on a number of considerations:

- Effectiveness in meeting stated aims
- Consistency with underlying Building Code objectives
- Stakeholder impacts, including cost and implications for design choice
- Capacity of the building sector to implement changes in a safe and effective manner
- Workload and liability implications for municipalities
- Enforceability

New editions of the Building Code and significant interim amendments undergo public review, followed by evaluation by one or more Building Code Technical Advisory Committees (TACs). The TACs are comprised of broad, balanced and independent representation of building industry experts. Members of the Committees are selected based on their industry leadership and expertise. Advice provided by TACs is considered by the Ministry of Municipal Affairs in developing proposed Building Code changes for review by the government.

Building Code changes take effect on a date specified in the regulation. A transition period is typically provided for changes that have significant stakeholder impacts.

National Code Development Process

Ontario participates in a Canadian Federal/Provincial/Territorial code development process coordinated by the Canadian Commission on Building and Fire Codes. This process supports the development of provincial codes and model national codes, including the model National Building Code of Canada.

Involvement in this national process has resulted in a coordinated Building Code review cycle. The 2015 national codes, for example, were published in early 2016, which has now become one of the main driving forces to develop the next edition of Ontario's Building Code.

Ontario is also committed to harmonizing with the technical requirements of the model national code where appropriate. The structural design requirements of Ontario's Building Code, for instance, are now virtually identical to those in the model National Building Code.

However, there are some areas where Ontario has chosen to pursue its own policy priorities, which has led to differences with the model national codes. For example, Ontario's Building Code supports the consolidation of construction standards by addressing matters not included in the model national codes, including on-site sewage systems, public pools, spas and rapid transit stations. Ontario also has enhanced Code standards in areas such as energy efficiency and barrier-free accessibility and has developed renovation standards that promote the retention and reuse of buildings.

Ministry of Municipal Affairs

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