Proposed Changes to Ontario's Building Code
Summer and Fall 2017 Consultation:
Electric Vehicle Charging
in Multi-Unit Residential Buildings

Purpose

- To provide information on proposed changes to the Building Code regarding electric vehicle (EV) charging in multi-unit residential buildings as described in the Overview Summary Document entitled "Potential Changes to Ontario's Building Code: Summer and Fall 2017 Consultation".

- To respond to questions of clarification and technical issues.

Next Edition of Ontario's Building Code: **Consultations**

- The ministry is currently seeking input on proposed requirements to reduce greenhouse gas (GHG) emissions in the building sector through changes to the Building Code in support of the government's Climate Change Action Plan.
- Proposals are detailed in the Overview Summary Document "Potential Changes to Ontario's Building Code: Summer and Fall 2017 Consultation".
  - Note: 22 of the 25 code change proposals related to Climate Change Action Plan commitments.
- Proposals include:
  - higher energy efficiency performance levels for houses and large buildings in the next Code cycle
  - requirements for EV charging in multi-unit residential buildings
  - energy efficiency requirements for renovations in houses and large buildings
  - requirements that support climate change adaptation (hurricane straps)

- The deadline for providing feedback is **September 29, 2017**.

Building Code Change Implementation Timelines:

Proposed to come into effect January 1, 2019

Proposals include:

- 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

Building Code Change Implementation Timelines:

Proposed to come into effect 2020

Proposals include:

- Energy efficiency requirements for **houses:**
  - continuous insulation
  - triple-pane windows and sliding doors
  - air leakage testing
  - further limitations to building envelope trade-offs
- Energy efficiency requirements for **large buildings:**
  - removal of insulation exceptions to reduce thermal bridging effects

Building Code Change Implementation Timelines:

Proposed to come into effect 2022

Proposals include:

- 20 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

Building Code Change Implementation Timelines:

Proposed to come into effect 2022

Proposals include:

- 20 per cent decrease in energy **consumed by large building types**:
  - 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

Electric Vehicle (EV) Charging Proposal for Multi-unit Residential Buildings

- The government is committed to the facilitating wider use of Electric Vehicles (EVs):
  - Reducing transportation sector emissions is one of the five pillars of the government's Climate Change Action Plan.
  - Expanding the use of EVs is one element of reducing emissions.
  - Ontario's Building Code is an important mechanism for implementing a number of the Climate Change Action Plan commitments, including making it more convenient to charge EVs.
  - EV owners, especially those who live in multi-residential buildings, may not currently have access to home charging.
  - Charging at home, at night, is the most convenient place and time for people to charge their cars.
  - The Building Code currently allows but does not require EV charging in multi-unit residential buildings.

Review of Electric Vehicle Charging Requirements: **2012 Building Code**

- In May 2017, the Building Code was amended to facilitate EV charging in all new houses and non-residential buildings (workplaces).
  - **For houses**
    - empty conduit and adequate reserved space in the electrical panel (minimum 200 amp panelboard) to energize an Electric Vehicle Supply Equipment (EVSE) when it is installed in the garage or driveway
  - **For workplaces**
    (Part 3 and Part 9 non-residential where there is parking inside the building)
    - at least 20% of the parking spaces to be provided with electric vehicle supply equipment (EVSE) installed in accordance with the Electrical Safety Code.
    - remaining parking spaces to be “EV-ready” (designed to permit future installation of EVSE)
- These requirements come into effect January 1, 2018.

Proposed Electric Vehicle Charging requirements for Multi-unit Residential Buildings

- A proposal identical to workplace charging requirements is proposed for multi-unit apartment buildings (both Part 9 (<600m2) and Part 3 buildings).
  - Where parking spaces are provided inside an apartment building, at least 20% of the parking spaces would need to be provided with electric vehicle supply equipment (EVSE) installed in accordance with Section 86 of the Electrical Safety Code.
  - The remaining parking spaces located in those buildings would need to be "EV-ready" (designed to permit future installation of EVSE in accordance with Section 86 of the ESC).

Electric Vehicle Supply Equipment (**EVSE)** is defined in the Electric Safety Code (ESC) as:
A complete assembly consisting of conductors, connectors, devises, apparatus, and fittings installed specifically for the purpose of power transfer and information exchange between the branch circuit and the electric vehicle.

- These requirements are proposed to come into effect January 1, 2019.

Link for proposal # 2-CC-B-03-01-01
with Code References Div. B, 3.1.21.1. and 9.34.4.1.

Electric Vehicle Charging Proposal for Multi-unit Residential Buildings

Discussion Questions:

1. Is it practical to require the installation of EVSE in a parking spot before it is known what particular EV/PHEV (Plug-in Hybrid EV's) might be parked there? If so, what EVSE would work with every car? If not, what hardware could be installed?
2. What would be the impact of these policies on manufacturers of EVs, PHEV's and EV chargers?
3. Should the voltage or the amperage of the 20% of the spots be prescribed? What should it be? Are there better alternatives to the 20%/80% split?
4. How much does it cost to energize parking spots? Is there a premium charged to condo owners for an EV parking spot compared to a non-energized parking spot?
5. What should be considered in a "rough-in" for future charging?

Provide Feedback

- Consultation period for proposed changes to the Building Code consultation will conclude **September 29, 2017.**
- Feedback on the content of the proposed Building Code changes should be submitted by completing the online comment form.
- Comments on the proposed Building Code changes and discussion items can also be sent by mail to:

2017 Next Edition Building Code Consultation
c/o Building and Development Branch
Ministry of Municipal Affairs
16th – 777 Bay Street
Toronto ON M5G 2E5

Provide Feedback

- Technical Advisory Committees will meet after the consultation period closes to review comments and provide advice to the ministry.
- See Section 5 of the: "Overview Summary Document - Potential Changes to Ontario's Building Code: Summer and Fall 2017 Consultation" for more details.
- Comments or questions of clarification can be submitted to:
  - by email: buildingcode.consultation@ontario.ca
  - by phone: 416-585-6666.