



Ontario Public Health Association
 l'Association pour la santé publique de l'Ontario
 Established/Établi 1949

The mission of OPHA is to provide leadership on issues affecting the public's health and to strengthen the impact of people who are active in public and community health throughout Ontario.

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Constituent Societies

Association of Ontario
 Health Centres (AOHC)

Association of Public Health
 Epidemiologists in Ontario (APHEO)

Association of Supervisors of
 Public Health Inspectors of Ontario
 (ASPHIO)

Canadian Institute of Public Health
 Inspectors (Ontario Branch)
 (CIPHIO)

Community Health Nurses'
 Initiatives Group (RNAO)

Health Promotion Ontario (HPO)

Ontario Association of Public
 Health Dentistry (OAPHD)

Ontario Society of Nutrition
 Professionals in Public Health
 (OSNPPH)

The Ontario Association of Public
 Health Nursing Leaders, (OAPHNL)

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

To Whom It May Concern,

Re: EBR Registry Number: 013-0536 – Proposed Changes to Ontario's Building Code

The Ontario Public Health Association (OPHA) appreciates the opportunity to provide input on proposed amendments to the Ontario Building Code (OBC). OPHA is supportive of the proposed changes to the OBC to increase energy efficiency of buildings and bring the code in line with the Climate Change Action Plan. OPHA is also supportive of the energy conservation and GHG reduction goals as there are several health and societal co-benefits including:

- Reducing Ontarians vulnerability to energy price increases over time;
- Retaining more energy dollars within the community;
- Building the energy efficiency market and increasing high quality local jobs associated with serving that market;
- Air pollution and public health improvements as a result of reduced fossil fuel use and reduced vulnerability to extreme heat; and
- Reductions in community vulnerability to energy disruptions and extreme weather events.

Comments on specific sections of the document are provided below:

Energy Efficiency

OPHA is supportive of initiatives to adopt more stringent energy efficiency requirements for all buildings, accompanied by requirements to ensure adequate ventilation, improved indoor air quality, moisture control and radon mitigation. Without proper ventilation, increasing the energy efficiency of a building may result in decreased indoor air quality, increased indoor moisture and elevated radon levels.

In light of this, OPHA further recommends the following:

- **Radon mitigation:** Inclusion of a requirement for radon mitigation in the construction of all new houses in the OBC. The current scientific evidence shows that radon gas is a public health concern. Expanding the mitigation requirement across the province is an important update because although there are certain geographical areas where radon is more likely to be found, it is possible for any

home in Ontario to contain a build-up of radon. Regardless of a home's location radon can only be detected by testing, as radon is a colourless, odourless gas. It is recommended that the following revisions be made in regards to radon:

- More measures need to be taken in addressing potential radon exposure, including making mitigation measures easier for home owners. OBC provisions should include all of the radon protective provisions outlined in Parts 5, 6, and 9 and their corresponding appendices of the National Building Code, 2010 (Reference: Source: pages 29-32 of the CELA report http://www.cela.ca/sites/cela.ca/files/Radon-Report-with-Appendices_0.pdf)
 - Best Practice Reference: City of Guelph Radon Gas Mitigation Program as a best practice for the OBC provision <http://guelph.ca/city-hall/building-permits-inspections/residential-building-permits/radon/>). In addition to including the federal Radon Guideline reference level (currently set at 200 Bq/m³) for all new construction and major renovations, these amendments should also require mitigation if the reference level is exceeded, and requirements that engineers and designers consider radon protection in their designs.
 - Rather than requiring a rough-in for a radon mitigation system at construction, it would be more effective to complete the piping to the exterior for passive venting.
- **Indoor air quality:** Inclusion of additional measures in the OBC that will help improve indoor air quality in buildings and reduce exposure to air contaminants and other issues. Some of the proposed changes such as ensuring mechanical ventilation in dwelling units, using provincial standards and relevant best practices are important to help ensure better air quality for buildings in Ontario. We recommend that the OBC consider standards and best practices, including:
 - ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality"
 - *ASHRAE Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning*
 - The Well Building Standard (WELL) <https://www.wellcertified.com/well>. This standard provides guidance which takes a holistic approach public health and safety from 7 dimensions. This can be considered as a resource to inform the building code or a reference tool for proponents to consider best practices.
- **Carbon monoxide alarms:** Inclusion of measures requiring installation of carbon monoxide alarms in additional locations in buildings where combustion sources may be present or introduced. An important consideration is for buildings to have appropriate safeguards during power outages. During the most recent ice storm resulting in a power outages, there were numerous cases of dwellings and home owners not safely using gas generators and appliances indoors resulting in carbon monoxide poisoning.

Section 1. IV Electric Vehicle Charging

The Ministry should consider requiring EV charger installation for all new commercial, industrial, residential homes and multi-unit residential buildings to help meet Ontario's GHG emission targets.

<https://plugndrive.ca/sites/default/files/Electric%20Vehicle%20-%20Reducing%20Ontario's%20Greenhouse%20Gas%20Emissions%20-%20A%20Plug'n%20Drive%20Research%20Report.pdf>

Section 1.V. Other Green Technologies - Green Building Standards and Green Roofs

The Ministry should consider endorsing some of the international Green Building Standards for certain new buildings, such as:

International Living Future Institute

- Living Building Challenge <https://living-future.org/lbc/>;
- Living product Challenge Certification <https://living-future.org/lpc/certification/>;
- Zero- Energy certification <https://living-future.org/net-zero/certification/>

Canada Green Building Council

- Zero Carbon Building Initiative <http://www.cagbc.org/>
- LEED <http://www.cagbc.org/CAGBC/LEED/CAGBC/Programs/LEED/LEED.aspx?hkey=54c44792-442b-450a-a286-4aa710bf5c64>

Section 1.V. Other Green Technologies – Grey-water Reuse

OPHA supports the Ministry’s proposal to facilitate the installation of grey-water reuse systems. Grey-water reuse can be an effective means of providing alternation water sources to help alleviate water supply shortages in regards to climate change issues. If reused properly, grey-water reuse could significantly offset domestic and commercial water consumption, and reduce the amounts of effluent discharged from wastewater treatment plants. The following points should be considered to ensure the protection of public health:

- The reuse of grey-water is not intended for potable drinking; and,
- Grey-water can contain at least 100,000 potentially pathogenic organisms per mL of water¹. The greatest public health concern associated with the reuse of greywater is from exposure to microbiological hazards due to the presence of pathogens such as *Escherichia coli*, *Pseudomonas*, *Campylobacter*.

Grey-water is a potential alternative to municipal water for *certain permitted uses*; however, it is important to ensure that there is no chance of cross-connections between potable water and grey-water systems. Amendments to the OBC must ensure that plumbing controls are in place to guarantee the safe reuse of grey-water, including proper back flow prevention units and quality plumbing inspections. Grey-water can be classified as sewage under the OBC and Ontario *Environmental Protection Act* Sewage Disposal System Regulations, these conflicts would need to be addressed by amendments to the OBC.

Section 2. Supporting Adaptation to Climate Change

OPHA supports the inclusion of measures to adapt to climate change. Ontario has experienced recent extreme weather events that have resulted in severe damage to homes and other buildings. OBC requirements should be based on forecasted future climatic conditions, rather than past or current climatic conditions. Standards for structural integrity should be based on future climatic conditions for all material and components used in the building envelope, roof, and other exterior elements. The Ministry should

¹ Dixon A, Butler D, Fewkes A. Guidelines for Greywater Re-Use: Health Issues. J Chartered Institution of Water and Environmental Management. 1999 Oct;13

consider incorporating many of the construction and design guidelines related to extreme weather into the OBC as outlined in the Institute for Catastrophic Loss Reduction Designed for safer living® home program guidelines to enable homes to increase their resistance to natural disasters and extreme weather such as high winds, floods, wildfires and severe winter. https://www.iclr.org/images/builders_guide_2010_final.pdf.

In addition to measures to reduce damage to buildings as a result of extreme weather, OPHA recommends requirements that increase energy efficiency and reduce the need for air conditioning, such as:

- External shades on windows
- Increased insulation
- Ceiling fans
- Effective, passive ventilation
- Windows that open wide high up to allow ventilation while preventing falls
- High albedo (cool, reflective) surfaces for the roof, envelope and surrounding site such as parking lots
- Shared cool rooms inside apartment buildings, to provide air conditioning to protect the health of the most vulnerable people who require active cooling
- Shared cool spaces outside apartment buildings, to provide shaded, treed spaces with seating as a refuge from overheated apartments
- A program to enable and encourage building managers to utilize the options in the OBC that prevent falls from windows but allow ventilation. The options are found in the current OBC (Section 3.3.4.8 Protection of Openable Windows) and in the Residential Tenancies Act (Section 25 Window Safety Devices). A program could be modelled on that of New York City, which includes an approved list of window guard manufacturers and products. Information on New York City's program is available at: <https://www1.nyc.gov/site/doh/health/health-topics/window-guards-faq.page>.

Section 4. Consultation Discussion Items – IV. Other

OPHA recommends that the Ministry include a requirement for municipalities to require, and maintain, a copy of a Designated Substances report as part of their demolition permitting process. There is a regulatory requirement to complete a Designated Substances report prior to demolition under Section 30 of the Ontario Occupational Health and Safety Act; however, municipalities are not consistently asking for, or retaining, this information when issuing demolition permits. Some municipalities have indicated that they do not track this information because it is not required by the Building Code. From a public health perspective, it is important to have this information in the event of an accidental discharge of designated substances to the environment during a demolition.

More about the Ontario Public Health Association

OPHA has established a strong record of success as the voice of Public Health in Ontario. We are a member-based, not-for-profit association that has been advancing the public health agenda since 1949. OPHA provides leadership on issues affecting the public's health and strengthens the impact of those who are active in public and community health throughout Ontario. OPHA does this through a variety of means including advocacy, capacity building, research and knowledge exchange. Our membership represents many disciplines from across multiple sectors.

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