

Proposed Changes to BC Codes

- Public Review

AIBC Comments December 14, 2011

Application of the BCBC to Factory Built and Mobile Homes

The 2006 BC Building Code provision:

Sentence 1.1.1.1.(2)(g)

2) This Code does not apply to;

g) factory built housing and components certified by a Standards Council of Canada accredited agency, prior to placement on the site, as complying with Canadian Standards Association Standard A277, "Procedure for Certification of Factory Built Houses," or CAN/CSA-Z240 MH Series, "Mobile Homes," but this exemption does not extend to on site preparations (*foundations, basements, mountings*), interconnection of modules, connection to services and installation of *appliances*, and

What is the recommended wording for the 2012 British Columbia Building Code:

Sentence 1.1.1.1.(2)(g)

2) This Code does not apply to:

g) factory built housing and components complying with a CAN/CSA-Z240 MH Series standard, but this exemption does not extend to on site preparations (*foundations, mountings*), connection to services and installation of *appliances*, and

Why is British Columbia recommending a variation from the existing BC Building Code?

The BCBC indicates (1.1.1.1.(3)) "This Code applies both to site assembled and factory-buildings." Canadian Standards Association Standard A277, "Procedure for Factory Certification of Buildings," indicates the codes, standards and requirements to be met shall be those in force at the final destination of the building, making the Code's requirement circuitous and redundant. Reference to this standard is made in the Code's Appendix to Division A, to provide direction in determining Code compliance. Due to their transient nature, manufactured (mobile) homes which comply with CAN/CSA-Z240

MH Series may not comply with all applicable requirements of the BCBC, therefore their exemption from the BCBC continues.

The AIBC does not support all of the rewording. The removal of the ‘circuitous and redundant’ wording referencing the standard is acceptable, but the proposal to remove the wording ‘interconnection of modules’ is not acceptable. The latter would permit, outside the code, and outside the professional design and review of architects and engineers mandated by the code, large and substantial buildings created by interconnecting small factory built modules.

The AIBC supports keeping the wording of the NBC with respect to what the exemption does not extend to, as is highlighted above in blue.

Occupancy Classification, Group A Division 2, low occupant load

The 2006 BC Building Code provision:

The 2006 BCBC requires occupancies such as small restaurants, dance studios, and language schools to be classified as Group A, Division 2, regardless of size or occupant load.

What is the recommended wording for the 2012 British Columbia Building Code?

New Article

3.1.2.6. Group A, Division 2, Low Occupant Load

- 1) A suite of Group A, Division 2 Assembly occupancy is permitted to be classified as a Group D, Business and personal services occupancy provided**
 - a) the number of occupants in the suite does not exceed 30, and
 - b) except as permitted by Sentence (2), the suite is separated from all other suites by a fire separation having a fire-resistance rating of not less than 1 hr.
- 2) The fire separation required by Sentence (1) need not have a fire-resistance rating where the suite is located in a building that is sprinklered throughout.**
- 3) A permanent sign, with lettering not less than 50 mm high with a 12 mm stroke, indicating the lesser of the occupant load for the suite or 30 persons, shall be posted in a conspicuous location near the suite’s principal entrance.**

Consequential amendment

3.1.2.1.

1) Except as permitted by Articles 3.2.1.3. to 3.1.2.6., every ...

New Appendix note

A-3.1.2.6. Group A, Division 2, Low Occupant Load A suite of Group A, Division 2 Assembly is permitted to be classified as a Group D, Business and personal services occupancy provided the requirements of Article 3.1.2.6. are complied with. This re-classification permits the suite to be located in a building where Part 9 of the Code is applicable.

Why is British Columbia recommending a variation from the existing BC Building Code?

Classifying a small low occupant load Group A Division 2 with the same construction standards as a large assembly occupancy can be onerous, particularly when located in a building which has been originally

The AIBC's response to this proposed change is mixed and guarded, appreciating its advantages but with concern for the public safety of occupants. This provision would mean (among other things) that these small assembly occupancies (which typically fall below the *Architects Act's* thresholds for having to engage architects) will no longer be required to have professional design and review under the building code. The current situation whereby professionals are required under the building code is inherently safer by virtue of professional design, field review and assurances.

We appreciate that the current code requirements for registered professionals on these small projects may create some administrative, economic and access challenges, resulting in some hardship for the owner/consumer. Public safety is not, however, a matter of convenience.

We also appreciate that for many, if not the majority of these situations, the risk to public safety may be quite low. Similar exemptions (for professionals' engagement) occur in a number of other codes, in other provincial jurisdictions, and reportedly have not proved to be problematic.

The proposed change would also reduce the required fire separation from 2-hour to 1-hour, between these small assembly occupancies and adjacent retail occupancies, some of which contain considerable combustible contents. That would present inherently less protection.

The proposed change calls for an occupant load sign to be posted. That might provide some measure of presumed liability protection but will not prevent over-loading. Owners/operators and authorities having jurisdiction will need to be especially vigilant.

When the ‘small assembly’ occupancy is a daycare, then our concerns are amplified.

Combustible Cladding for Exterior Walls

The 2006 BC Building Code provision:

3.1.5.5. Combustible Components for Exterior Walls

1) Except for an exposing building face required to conform to Sentence 3.2.3.7.(1) or Sentence 3.2.3.7.(4), an exterior non-loadbearing wall assembly that includes combustible components is permitted to be used in a building required to be of noncombustible construction provided

a)the building is

i)not more than 3 storeys in building height, or

ii)sprinklered throughout,

b)the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.12.(3), and

c)the wall assembly satisfies the criteria of Sentences (2) and (3) when subjected to testing in conformance with CAN/ULC-S134, “Fire Test of Exterior Wall Assemblies”.

(See Appendix A.)

2) Flaming on or in the wall assembly shall not spread more than 5 m above the opening during or following the test procedure referenced in Sentence (1). (See Appendix A.)

3) The heat flux during the flame exposure on a wall assembly shall be not more than 35 kW/m² measured 3.5 m above the opening during the test procedure referenced in Sentence (1). (See Appendix A.)

4) A wall assembly permitted by Sentence (1) that includes combustible cladding of fire-retardant-treated wood shall be tested for fire exposure after the cladding has been subjected to an accelerated weathering test as specified in ASTM D 2898, “Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing”.

What is the recommended wording for the 2012 British Columbia Building Code?

3.1.5.5. Combustible Cladding Systems for Exterior Walls

1) Except for an exposing building face required to conform to Sentence 3.2.3.7.(1) or Sentence 3.2.3.7.(4), an exterior non-loadbearing wall assembly that includes a **combustible cladding system** is permitted to be used in a building required to be of noncombustible construction provided

a) the building is

- i) not more than 3 storeys in building height, or
- ii) sprinklered throughout,

b) the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.12.(3), and

c) the wall assembly satisfies the criteria of Sentences (2) and (3) when subjected to testing in conformance with CAN/ULC-S134, "Fire Test of Exterior Wall Assemblies". (See Appendix A.)

2) Flaming on or in the wall assembly shall not spread more than 5 m above the opening during or following the test procedure referenced in Sentence (1). (See Appendix A.)

3) The heat flux during the flame exposure on a wall assembly shall be not more than 35 kW/m² measured 3.5 m above the opening during the test procedure referenced in Sentence (1). (See Appendix A.)

4) A wall assembly permitted by Sentence (1) that includes combustible cladding of fire-retardant-treated wood shall be tested for fire exposure after the cladding has been subjected to an accelerated weathering test as specified in ASTM D 2898, "Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing".

Why is British Columbia recommending a variation from the existing BC Building Code?

BC Building Code Appeal Board Decision #1682 has ruled that where combustible insulation is used in a non load bearing exterior wall that the provisions of Article 3.1.5.5. are applicable. This would infer that any combustible component in a non load bearing wall would also be subject to the conditions of Article 3.1.5.5., even those items listed in

elsewhere Subsection 3.1.5. This was not the intent of this Article, and the requirement for testing may be onerous.

The change of the title of this Article is proposed to align the wording with its intent.

The AIBC supports this rewording. We understand that the Appeal Board, which made the controversial ruling, was frustrated by the wording in the code and itself supports the wording's be revised to reflect the intent of this clause.

Automatic Sprinkler Systems

The 2006 BC Building Code provision:

3.2.5.13. Automatic Sprinkler Systems

1) Except as permitted by Sentences (2), (3) and (4), an automatic sprinkler system shall be designed, constructed, installed and tested in conformance with NFPA 13, "Installation of Sprinkler Systems". (See Appendix A.)

2) Instead of the requirements of Sentence (1), NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," is permitted to be used for the design, construction, installation and testing of an automatic sprinkler system installed in a building of residential occupancy throughout, not more than 4 storeys in building height conforming to Article 3.2.2.42., Article 3.2.2.43., Article 3.2.2.45. or Article 3.2.2.48.

What is the recommended wording for the 2012 British Columbia Building Code:

3.2.5.13. Automatic Sprinkler Systems

1) Except as permitted by Sentences (2), (3) and (4), an automatic sprinkler system shall be designed, constructed, installed and tested in conformance with NFPA 13, "Installation of Sprinkler Systems". (See Appendix A.)

2) Instead of the requirements of Sentence (1), NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," is permitted to be used for the design, construction, installation and testing of an automatic sprinkler system installed in a building of residential **major occupancy containing no other major occupancies**, of not more than 4 storeys in building height conforming to Article 3.2.2.42., Article 3.2.2.43., Article 3.2.2.45. or Article 3.2.2.48.

Why is British Columbia recommending a variation from the existing BC Building Code?

It is unclear what is meant by “residential throughout” and hence the applicability of Sentence (2) is unclear. The wording is being changed to better reflect the intent.

The AIBC **supports this change; the existing wording is unclear.**

Fire Alarm Pull Stations

The 2006 BC Building Code provision:

3.2.4.16. Manual Stations

1) Except as permitted by Sentences (2) and (3), where a fire alarm system is installed, a manual station shall be installed in every floor area near

a) every principal entrance to the building, and

b) every *exit*.

What is the recommended wording for the 2012 British Columbia Building Code:

3.2.4.16. Manual Stations

1) Except as permitted by Sentences (2) and (3), where a fire alarm system is installed, a manual station shall be installed in every floor area near

a) every principal entrance to the building, and

b) every door leading out of a *floor area*.

Why is British Columbia recommending a variation from the existing BC Building Code?

This provision is intended to apply to every door leading out of a floor area, regardless of whether the door is an exit required by code. Using the term “*exit*” implies that it only applies to required exits.

The AIBC supports the revised wording. It is impossible for a building occupant to know which exits are required exits and which are convenience doors. The pull station to notify the fire department must be at any egress that a person would use.

Fire Separation Between Occupancies

The 2006 BC Building Code provision:

3.3.1.1. Separation of Suites

1) Except as permitted by Sentences (2) and (3), each *suite* in other than *business and personal services occupancies* shall be separated from adjoining *suites* by a *fire separation* having a *fire-resistance rating* not less than 1 h. (See also Subsection 3.3.3. for *care or detention occupancies*, Article 3.3.4.2. for *residential occupancies* and Article 3.1.8.7. for *fire dampers*.)

2) The *fire-resistance rating* of the *fire separation* required by Sentence (1) is permitted to be less than 1 h but not less than 45 min provided the *fire-resistance rating* required by Subsection 3.2.2. is permitted to be less than 1 h for

a) the floor assembly above the *floor area*, or

b) the floor assembly below the *floor area*, if there is no floor assembly above.

3) *Occupancies* that are served by *public corridors* conforming to Clause 3.3.1.4.(4)(b) in a *building* that is *sprinklered* throughout, are not required to be separated from one another by *fire separations* provided the *occupancies* are

a) *suites of business and personal services occupancy*,

b) fast food vending operations that do not provide seating for customers,

c) *suites of mercantile occupancy*, or d) any combination of these occupancies.

What is the recommended wording for the 2012 British Columbia Building Code?

3.3.1.1. Separation of Suites

1) Except as permitted by Sentences (2) through (4), a *suite* shall be separated from adjoining *suites* by a *fire separation* having a *fire-resistance rating* not less than 1 h. (See also Subsection 3.3.3. for *care or detention occupancies*, Article 3.3.4.2. for *residential occupancies* and Article 3.1.8.7. for *fire dampers*.)

2) The *fire-resistance rating* of the *fire separation* required by Sentence (1) is permitted to be less than 1 h but not less than 45 min provided the *fire-resistance rating* required by Subsection 3.2.2. is permitted to be less than 1 h for

a) the floor assembly above the *floor area*, or

b) the floor assembly below the *floor area*, if there is no floor assembly above.

3) *Occupancies* that are served by *public corridors* conforming to Clause 3.3.1.4.(4)(b) in a *building* that is *sprinklered* throughout, are not required to be separated from one another by *fire separations* provided the *occupancies* are

a) *suites of business and personal services occupancy*,

b) fast food vending operations that do not provide seating for customers,

c) *suites of mercantile occupancy*, or

d) any combination of these occupancies.

4) *No fire separation is required between suites of business and personal services occupancy*

Why is British Columbia recommending a variation from the existing BC Building Code?

It is unclear in the 2006 BCBC that business and personal services occupancies are exempted in Sentence (1) from both the requirement for a fire separation AND the requirement for a fire resistance rating. The new sentence 4 explicitly states this exemption.

The AIBC supports this change of wording. For the reasons stated in the summary, it makes a ‘grey area’ clear.

Accessible Public Service Counters

The 2006 BC Building Code provision:

3.8.3.18. Counters

1) Every counter more than 2 m long serving the public shall have at least one *accessible* section not less than 760 mm long centered over the knee space required by Sentence (3).

2) An *accessible* counter surface shall be not more than 865 mm above the floor.

3) Knee space beneath an *accessible* counter intended to be used as a work surface by *persons with disabilities* shall be not less than

- a) 760 mm wide,
- b) 685 mm high, and
- c) 485 mm deep.

What is the recommended wording for the 2012 British Columbia Building Code?

3.8.3.18. Counters

1) Every counter more than 2 m long, **at which the public is served**, shall have at least one *accessible* section not less than 760 mm long centred over a knee space **conforming to Sentence (3). (See Appendix A.) (See also A-3.8.2.1. in Appendix A.)**

2) An *accessible* counter surface shall be not more than 865 mm above the floor.

3) **Except as permitted in Sentence (4)**, the knee space beneath an *accessible* counter intended to be used as a work surface shall be not less than

- a) 760 mm wide,
- b) 685 mm high, and
- c) 485 mm deep.

4) **A counter that is used in a cafeteria, or one that performs a similar function whereat movement takes place parallel to the counter, need not provide a knee space underneath it.**

Why is British Columbia recommending a variation from the existing BC Building Code?

These provisions ensure that locations providing service to the public across a counter accommodate persons in wheelchairs and persons who have difficulty standing for periods of time. Where the counter is intended as a work surface for both parties, a knee space is required. However, if the counter is not a work space for the customer, such as at a cafeteria or supermarket check-out, a knee space is not required

The proposed change is consistent with the National Building Code wording for this Article because it addresses these locations where knee space is not necessary. The 2006 BCBC provision was a variation from the National Building Code .

The AIBC supports this proposed change; the 2006 BC Building Code provision was impractical, and did not serve a useful function for persons with disabilities.

Exterior Wood Doors

The 2006 BC Building Code provision:

9.6.5.1. Exterior Wood Doors

- 1)** Exterior wood doors shall conform to CAN/CSA-O132.2 Series, “Wood Flush Doors.”
- 2)** Each door described in Sentence (1) shall indicate legibly
 - a) the name of the manufacturer,
 - b) the standard to which it is produced, and
 - c) that it is of an exterior type.

What is the recommended wording for the 2012 British Columbia Building Code:

Delete sentence 2010 NBC / 2011 BCBC sentence 9.6.5.1.(1) and (2)

Why is British Columbia recommending a variation from the existing BC Building Code?

2010 NBC and 2006 BCBC require wood exterior doors to conform to CSA-O132.2 Series, “Wood Flush Doors.” This standard has been withdrawn and the requirement conflicts with 2010 NBC 9.7.5.2.(3) and 2006 BCBC 9.6.8.2. which permit stile and rail doors. Most exterior wood doors being installed today are stile and rail type doors that don’t meet the standard and there are no apparent problems. There is no point in referencing a standard that industry doesn’t support because they no longer produce that type of door.

For security provisions wood stile and rail doors must meet prescriptive requirements in 9.6.8.2. (2006 BCBC) and 9.7.5.2.(3) (2010 NBC) and will soon need to meet BC Energy Efficiency regulations.

The AIBC supports the proposed change. Current industry standards and practices need to prevail. Note we also have Energy Act requirements for all doors. We are confident that the CSA –O132.2 provision is obsolete and should be removed.

Assemblies Deemed to Have a Capillary Break

The 2006 BC Building Code provision:

9.27.2.2. Minimum Protection from Precipitation Ingress

(See Appendix A.)

1) Except as provided in Sentence (2), a cladding assembly is deemed to have a capillary break between the cladding and the backing assembly, where

a) there is a drained and vented air space not less than 10 mm deep behind the cladding, over the full height and width of the wall (see also Article 9.27.5.3.),

b) an open drainage material, not less than 10 mm thick and with a cross-sectional area that is not less than 80% open, is installed between the cladding and the backing, over the full height and width of the wall,

c) the cladding's components are non-insulating type, hollow-backed aluminum or vinyl and are horizontally oriented and loosely fastened to the backing substrate, or

d) the wall is a masonry cavity wall or the cladding is masonry veneer constructed according to Section 9.20.

What is the recommended wording for the 2012 British Columbia Building Code:

9.27.2.2. Minimum Protection from Precipitation Ingress

(See Appendix A.)

1) Except as provided in Sentence (2), a cladding assembly is deemed to have a capillary break between the cladding and the backing assembly, where

a) there is a drained and vented air space not less than 10 mm deep behind the cladding, over the full height and width of the wall (see also Article 9.27.5.3.),

b) an open drainage material, not less than 10 mm thick and with a cross-sectional area that is not less than 80% open, is installed between the cladding and the backing, over the full height and width of the wall,

c) the cladding's components are **non-insulating type**, hollow-backed **metal** or vinyl and are horizontally oriented and loosely fastened to the backing substrate, or

d) the wall is a masonry cavity wall or the cladding is masonry veneer constructed according to Section 9.20.

Why is British Columbia recommending a variation from the existing BC Building Code?

“Aluminum” and “vinyl” are terms used to describe typical cladding which would meet this requirement. Use of the term “aluminum” precludes the use of other available metal products (which are horizontally oriented and loosely fastened to the backing substrate) which possess similar drainage performance. One such example is steel siding. While cladding must still meet applicable material standards as outlined in the Code, there is no need for this clause to limit which types of metal cladding material that may meet the intent of this clause. The term non-insulating type has been deleted as it is considered redundant.

The AIBC supports the proposed change; there is no reason to limit metal siding to aluminum. In addition to steel, there is copper, zinc, titanium, lead and various alloys used for cladding. The ‘aluminum’ provision stifles innovation in the use of new recycled metal cladding.

The 2006 BC Building Code provision:

9.27.2.2. Minimum Protection from Precipitation Ingress

(See Appendix A.)

1) Except as provided in Sentence (2), a cladding assembly is deemed to have a capillary break between the cladding and the backing assembly, where

a) there is a drained and vented air space not less than 10 mm deep behind the cladding, over the full height and width of the wall (see also Article 9.27.5.3.),

b) an open drainage material, not less than 10 mm thick and with a cross-sectional area that is not less than 80% open, is installed between the cladding and the backing, over the full height and width of the wall,

c) the cladding's components are non-insulating type, hollow-backed aluminum or vinyl and are horizontally oriented and loosely fastened to the backing substrate.

d) the wall is a masonry cavity wall or the cladding is masonry veneer constructed according to Section 9.20.

2) The drained and vented air space, and drainage material described in Sentence (1) may be interrupted by

a) penetrations for windows, doors and services,

b) flashing, and

c) furring, provided the furring does not make up more than 20% of the furred area.

What is the recommended wording for the 2012 Building Code?

9.27.2.2. Minimum Protection from Precipitation Ingress

(See Appendix A.)

1) Except as provided in Sentence (2), a cladding assembly is deemed to have a capillary break between the cladding and the backing assembly, where

a) there is a drained and vented air space not less than 10 mm deep behind the cladding, over the full height and width of the wall (see also Article 9.27.5.3.),

b) an open drainage material, not less than 10 mm thick and with a cross-sectional area that is not less than 80% open, is installed between the cladding and the backing, over the full height and width of the wall,

c) the cladding's components are non-insulating type, hollow-backed aluminum or vinyl and are horizontally oriented and loosely fastened to the backing substrate.

d) the wall is a masonry cavity wall or the cladding is masonry veneer constructed according to Section 9.20.

2) The drained and vented air space, and drainage material described in Sentence (1) may be interrupted by

a) penetrations for windows, doors and services,

b) flashing

c) nominally vertical furring or strapping, provided the furring or strapping does not make up more than 20% of the drained and vented air space, and

d) insect screens, provided the screen material does not impair the function of the drained and vented airspace.

Why is British Columbia recommending a variation from the existing BC Building Code?

Code wording does not allow for strapping and insect screens as are commonly used in current construction practices.

The AIBC supports the proposed wording; it is necessary to reflect current advanced building envelope design in BC, well beyond flush wood doors and aluminum siding.

Ventilation Fan Control

The 2006 BC Building Code provision:

9.32.3.4. Principal Exhaust Fan Control

1) The principal ventilation exhaust fan shall

a) be controlled by an adjustable time control device capable of providing a minimum of two 4-hour operating periods per day, and have a separate manual switch when serving both the principle ventilation exhaust function and a bathroom or water-closet room exhaust function, or

b) be designed to run continuously.

What is the recommended wording for the 2012 British Columbia Building Code:

9.32.3.4. Principal Exhaust Fan Control

1) The principal ventilation exhaust fan shall

a) be controlled by an adjustable time control device capable of providing **not less than 8 total hours of ventilation in not less than 2 periods per 24 hr day**, and have a separate manual switch when serving both the principle ventilation exhaust function and a bathroom or water-closet room exhaust function, or

b) be designed to run continuously.

Why is British Columbia recommending a variation from the existing BC Building Code?

Automatic or continuous ventilation is needed to assure acceptable indoor air quality. The principle fan timer provision has proven to be too limiting as new timer devices have come on the market which will provide the minimum 8 hours of ventilation per day but not in 4 hour periods. This change proposal revises the wording to allow more variations of on and off periods so long as a total of 8 hours of ventilation is provided in at least two periods each day.

The AIBC supports the proposed rewording. The NBCC is too restrictive; the rewording will lead to better indoor air quality.

Mobile Home Certified Wood Stoves

The 2006 BC Building Code provision:

[Table A-9.32.3.8.B](#)

What is the recommended wording for the 2012 British Columbia Building Code?

Under Appliance Type in the far right column add the following: **Heater Stove certified for installation in manufactured homes.**

Why is British Columbia recommending a variation from the existing BC Building Code? Appendix A-9.32.3.8.(1)(a) describes in two tables the conditions under which available fuel burning appliances are considered “subject to back drafting.”

Manufactured Home certified wood stoves are subjected to a depressurization test that assures they are safe in the very airtight environment of mobile and manufactured homes and can therefore be considered as Non-NAFFVA (Naturally Aspirating Fuel-Fired Vented Appliance) . This wasn't considered when the Appendix tables were developed for the 2006 BCBC.

Non-potable Water - Design of Systems

The 2010 National Building Code provision:

Div.B.7.7.4.1. Non-potable Water System Design (See Appendix A.)

1) *Non-potable water systems* shall be designed, fabricated and installed in accordance with good engineering practice, such as that described in the ASHRAE Handbooks, ASPE Handbooks and CSA B128.1, "Design and Installation of Non-potable Water Systems."

2) *Non-potable water systems* shall only be used to supply water closets, urinals, and directly connected underground irrigation systems that only dispense water below the surface of the ground.

A-7.7.4.1. Non-potable Water System Design

Non-potable water can vary greatly in quality and hazard level. The water from *sewage*, *storm water*, *clear-water waste* or an *auxiliary water supply* that is not safe for human consumption is included.

Grey-water (which commonly refers to a subset of *sewage*) discharges from the fixture outlet pipes of specific fixtures such as laundry facilities, showers, baths, bathroom sinks. Typically neither the discharge from sanitary units such as toilets, nor the discharge from kitchen sinks, is included in the scope of grey-water.

Div B.7.1.2.1. Sanitary Drainage Systems

1. Every sanitary drainage system shall be connected to a public sanitary sewer, a public combined sewer, or a private sewage disposal system.

Div B.7.1.2.2. Storm Drainage Systems

1. Every storm drainage system shall be connected to a public storm sewer, a public *combined sewer*, or a designated *storm water* disposal location.

Div A.1.4.1.2.(1) Defined Terms

Auxiliary water supply means any water supply on or available to the premises other than the primary *potable* water supply.

A-1.4.1.2.(1) Defined Terms

Auxiliary Water Supply

The auxiliary water supply may include water from a secondary potable water supply or from any natural source, such as a well, lake, spring, stream or harbour. It may also include waste water (but not sanitary drainage) from industrial processes, such as cooling towers, or from storm retention ponds. These sources may be polluted or contaminated and constitute an unacceptable water source over which the primary water purveyor does not have sanitary control. It is generally accepted that there are two categories of auxiliary water supply:

1. any public potable water supply over which the primary water purveyor does not have sanitary control, or
2. any private water supply, other than the primary potable water supply, that is on or available to the premises.

What is the recommended wording for the 2012 British Columbia Building Code?

Div.B.7.7.4.1. Non-potable Water System Design (See Appendix A.)

1) *Non-potable water systems* shall be designed, fabricated and installed in accordance with good engineering practice, such as that described in the ASHRAE Handbooks, ASPE Handbooks and CSA B128.1, “Design and Installation of Non-potable Water Systems.”

2) **Except as permitted in Sentence (4) and (5)**, *non-potable water systems* shall only be used to supply water closets, urinals, and directly connected **underground** irrigation systems that only dispense water below the surface of the ground. (See Appendix A.)

3) *Non-potable water* shall meet the applicable *non-potable water* quality values as found in the *Canadian Guidelines for Domestic Reclaimed Water for Use in Toilet and Urinal Flushing*, as published by Health Canada, or the applicable *non-potable water* values in the *Municipal Sewage Regulation*. (See Appendix A.)

(4) *Non-potable water systems* that collect only rainwater are permitted to supply any irrigation systems and hose bibs.

(5) *Non-potable water* may be supplied for other uses as permitted by the *Municipal Sewage Regulation*.

A-7.7.4.1. Non-potable Water System Design

Non-potable water can vary greatly in quality and hazard level. The water from *sewage*, *storm water*, *clear-water waste* or an *auxiliary water supply* that is not safe for human consumption is included.

Grey-water (which commonly refers to a subset of *sewage*) discharges from the fixture outlet pipes of specific fixtures such as laundry facilities, showers, baths, bathroom sinks. Typically neither the discharge from sanitary units such as toilets, nor the discharge from kitchen sinks, is included in the scope of grey-water.

A-7.7.4.1.(2) Non-potable Water Uses Under certain conditions, the *Municipal Sewage Regulation (MSR)* permits additional non-potable water uses. It is not the intent of Sentence 7.7.4.1.(2) to contradict the *MSR*, but rather, to regulate the end use of non-potable water systems where the *MSR* does not apply.

A-7.7.4.1.(3) Non-potable water quality The *Municipal Sewage Regulation (MSR)* limits its application to specific non-potable water systems that meet certain criteria. It does, however, contain water quality values for various non-potable water end uses. While the *MSR* may not apply in every case, either the various water quality values it contains or the water quality values contained in the *Canadian Guidelines for Domestic Reclaimed Water for Use in Toilet and Urinal Flushing*, as published by Health Canada, shall be used.

Consequential Amendments:

Div B.7.1.2.1. Sanitary Drainage Systems

1. Every sanitary drainage system shall be connected to a public sanitary sewer, a public combined sewer, a private sewage disposal system, *or a non-potable water system designed in accordance with Article 7.7.4.1.*

Div B.7.1.2.2. Storm Drainage Systems

1. Every storm drainage system shall be connected to a public storm sewer, a public combined sewer, *or a designated storm water disposal location. or a non-potable water system designed in accordance with Article 7.7.4.1.*

Div A.1.4.1.2.(1) Defined Terms

Auxiliary water supply means any water supply on or available to the premises other than the primary *potable* water supply.

A-1.4.1.2.(1) Defined Terms

Auxiliary Water Supply

The auxiliary water supply may include water from a secondary potable water supply or from any natural source, such as a well, lake, spring, stream or harbour. It may also include waste water (but not sanitary drainage) from industrial processes, such as cooling towers, or from storm retention ponds. These sources may be polluted or contaminated and constitute an unacceptable water source over which the primary water purveyor does not have sanitary control. It is generally accepted that there are two categories of auxiliary water supply:

1. any public potable water supply over which the primary water purveyor does not have sanitary control, or
2. any private water supply, other than the primary potable water supply, that is on or available to the premises.

Harvested or recovered rainwater commonly refers to a type of *auxiliary water supply* that is collected from external surfaces of buildings or other hard-surfaced areas not exposed to vehicular or pedestrian traffic.

Auxiliary water supply that meets the definition of potable water can be used to supply potable water systems. Auxiliary water supply that doesn't meet the definition of potable water can be used to supply non-potable water systems.

Why is British Columbia recommending a variation from the National Building Code?

The NBC as written may be interpreted to disallow some of the uses of potable water that are currently permitted in BC by the Municipal Sewage Regulation (MSR). Proposed changes clarify that the permissions given by the MSR are still applicable, as well as referencing the water quality values therein. Further, the code changes proposed would extend the use of rainwater to any irrigation systems, assuming the water is suitable for that use.

The AIBC supports the proposed changes. BC is more advanced than the NBCC on this issue, and needs consistency with the other provincial regulation

Radon Control

The 2010 National Building Code provision:

9.13.4. Soil Gas Control

[\(See Appendix\) at A-9.13.4](#)

9.13.4.1. Application and Scope

- (1) This Subsection applies to
 - (a) wall, roof and floor assemblies separating *conditioned space* from the ground, and
 - (b) the rough-in to allow the future protection of *conditioned space* that is separated from the ground by a wall, roof or floor assembly.
- (2) This Subsection addresses the leakage of *soil gas* from the ground into the *building*.

9.13.4.2. Protection from Soil Gas Ingress

- 1)** All wall, roof and floor assemblies separating *conditioned space* from the ground shall be protected by an *air barrier system* conforming to Subsection 9.25.3.
- 2)** Unless the space between the *air barrier system* and the ground is designed to be accessible for the future installation of a subfloor depressurization system, *dwelling units* and *buildings* containing *residential occupancies* shall be provided with the rough-in for a radon extraction system conforming to Article 9.13.4.3.
- 3)** Where *buildings* are used for *occupancies* other than those described in Sentence (2), protection from radon ingress and the means to address high radon concentrations in the future shall conform to a) Article 9.13.4.3., or b) Parts 5 and 6 (see Article 5.4.1.1. and 6.2.1.1.).

[\(See Appendix A\). at A-9.13.4.2.\(3\)](#)

9.13.4.3. Providing for the Rough-in for a Subfloor Depressurization System

[\(See Appendix A\) at 9.13.4.3.](#)

- 1)** Floors-on-ground shall be provided with a rough-in for subfloor depressurization consisting of

- a) a gas-permeable layer, an inlet and an outlet as described in Sentence (2), or
- b) clean granular material and a pipe as described in Sentence (3).

2) The rough-in referred to in Clause (1)(a) shall include

- a) a gas-permeable layer installed in the space between the air barrier and the ground to allow the depressurization of that space,
- b) an inlet that allows for the effective depressurization of the gas-permeable layer ([see A-9.13.4.3.\(2\)\(b\) and \(3\)\(b\)\(i\) in Appendix A](#)), and
- c) an outlet in the *conditioned space* that
 - i) permits connection to depressurization equipment,
 - ii) is sealed to maintain the integrity of the *air barrier system*, and
 - iii) is clearly labelled to indicate that it is intended only for the removal of radon from below the floor-on-ground.

3) The rough-in referred to in Clause (1)(b) shall include

- a) clean granular material installed below the floor-on-ground in accordance with Sentence 9.16.2.1.(1), and
- b) a pipe not less than 100 mm in diameter installed through the floor, such that
 - i) its bottom end opens into the granular layer required Clause (a) at or near the centre of the floor and not less than 100 mm of granular material projects beyond the terminus of the pipe measured along its axis ([see A-9.13.4.3.\(2\)\(b\) and \(3\)\(b\)\(i\) in Appendix A](#)),
 - ii) its top end permits connection to depressurization equipment and is provided with an airtight cap, and
 - iii) the pipe is clearly labelled near the cap and, if applicable, every 1.8 m and at every change in direction to indicate that it is intended only for the removal of radon from below the floor-on-ground.

What is the recommended wording for the 2012 British Columbia Building Code:

[\(See Appendix A.\) at 9.13.4](#)

9.13.4.1. Application and Scope

- (1) This Subsection applies to
 - (a) wall, roof and floor assemblies separating *conditioned space* from the ground, and
 - (b) the rough-in to allow the future protection of *conditioned space* that is separated from the ground by a wall, roof or floor assembly.
- (2) This Subsection addresses the leakage of *soil gas* from the ground into the *building*.

9.13.4.2. Protection from Soil Gas Ingress

- (1) All wall, roof and floor assemblies separating *conditioned space* from the ground shall be protected by an *air barrier system* conforming to Subsection 9.25.3.
- (2) **Except as permitted in Sentence (4), unless the space between the *air barrier system* and the ground is designed to be accessible for the future installation of a subfloor depressurization system, *dwelling units* and *buildings* containing *residential occupancies* shall be provided with the rough-in for a radon extraction system conforming to Article 9.13.4.3.**
- (3) **Except as permitted in Sentence (4), where *buildings* are used for *occupancies* other than those described in Sentence (2), and are intended to be occupied on average for greater than 4 hours within a 24 period, protection from radon ingress and the means to address high radon concentrations in the future shall conform to**
 - (a) Article 9.13.4.3., or
 - (b) Parts 5 and 6 (see Article 5.4.1.1. and 6.2.1.1.).

[\(See Appendix A\) at 9.13.4.2.\(3\)](#)

(4) The rough-in for a radon extraction system is not required for buildings constructed in areas not known to have an elevated risk for the presence of indoor radon levels exceeding the Health Canada guideline as identified in Table C-3 in Appendix C as area 2.

9.13.4.3. Providing for the Rough-in for a Subfloor Depressurization System

[\(See Appendix A.\) at 9.13.4.3.](#)

(1) [Where required by Article 9.13.4.2,](#) floors-on-ground [and concrete ground cover](#) shall be provided with a rough-in for subfloor depressurization consisting of

- (a) a gas-permeable layer, an inlet and an outlet as described in Sentence (3), or
- (b) clean granular material and a pipe as described in Sentence (3).

(2) The rough-in referred to in Clause (1)(a) shall include

(a) a gas-permeable layer installed in the space between the air barrier and the ground to allow the depressurization of that space,

(b) an inlet that allows for the effective depressurization of the gas-permeable layer [\(see A-9.13.4.3.\(2\)\(b\) and \(3\)\(b\)\(i\) in Appendix A](#)

(c) an outlet in the *conditioned space* that

- i) permits connection to depressurization equipment,
- ii) is sealed to maintain the integrity of the *air barrier system*, and

iii) is clearly labelled to indicate that it is intended only for the removal of radon from below the floor-on-ground.

(3) The rough-in referred to in Clause (1)(b) shall include

(a) clean granular material installed below the floor-on-ground in accordance with Sentence 9.16.2.1.(1), and

(b) a pipe not less than 100 mm in diameter installed through the floor, such that

i) its bottom end opens into [each contiguous area of](#) the granular layer required Clause (a) at or near the centre of the floor and not less than 100 mm of granular material projects beyond the terminus of the pipe measured along its axis [\(see A-9.13.4.3.\(2\)\(b\) and \(3\)\(b\)\(i\) in Appendix A\),](#)

ii) its top end permits connection to depressurization equipment and is provided with an airtight cap, and

iii) the pipe is clearly labelled near the cap and, if applicable, every 1.8 m and at every change in direction to indicate that it is intended only for the removal of radon from below the floor-on-ground.

Why is British Columbia recommending a variation from the existing BC Building Code?

The 2010 Model National Building Code does not provide any exemption to the requirement for a rough-in for a radon extraction system. It is recognized that in BC, there are areas where radon is not known to be a problem. The proposed change allows an exemption to this requirement for those areas.

The AIBC supports the proposed rewording; it is more realistic and practicable in BC than the NBCC's 'universal' radon-control approach.

**Respectfully submitted 14 December 2011
AIBC**