

Tiny Houses NBC Code Change Request

Document: 2015 National Building Code (NBC)
-10 code change recommendations-

To be submitted the week of March 13, 2017

Author, Adaire Chown

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Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

Division A, 1.1.1.1.(2)

Subject: (What is the subject of the code change or the existing code provision title?)

Application of this Code

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada’s Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units, especially where these are constructed off-site or on a chassis.

Code Provision

The Code provision is clear that the Code applies to site-built and factory-constructed buildings. It is not clear how the Code applies, or not, to buildings that are constructed:

- off-site but not in a factory, as the term is typically understood, or
- on a chassis.

There is no apparent reason why the NBC should not apply to buildings that are:

- designed and constructed according to the technical requirements of the Code
- constructed off-site but not in a factory, or at least not as that term is typically understood, and
- may be constructed on a chassis for later installation on a foundation.

Factory-Constructed

CSA A277, Procedure for Certification of Prefabricated Buildings, Modules and Panels” defines factory as:
“a manufacturing facility that provides protection of construction materials, components, equipment, and products against adverse environmental effects during storage and fabrication.”

Certification in accordance with CSA A277 does not require prefabricated products be constructed in a typical factory setting with conditioned space. Ready-to-move (RTM) buildings are often constructed with limited protection. The same applies to tiny houses.

Neither “factory” nor “factory-constructed” are defined terms in the Code. While Division A, Sentence 1.4.1.1. states that undefined terms

“shall have the meanings that are commonly assigned to them in the context in which they are used, taking into account the specialized use of terms by the various trades and professions to which the terminology applies”

it is unlikely that most code users would think that “factory-built” has a particular meaning to persons involved in prefabricating buildings, modules or panels.

Consequently, the application statement as written is likely to be interpreted as unnecessarily excluding off-site-constructed buildings where these are not constructed in what is typically considered to be a factory. This is of particular concern where the building is a small dwelling unit and provides more affordable accommodation compared to other forms of housing.

Construction on a Chassis

Similarly, lack of recognition in the Code of buildings constructed on a chassis for later installation on a foundation has implications for acceptance by local authorities. Even where these comply with all the applicable technical requirements of the Code, they may be considered as recreational vehicles unless there is specific recognition in the Code application provision.

Again, this is of particular concern where the building is a dwelling unit and provides more affordable accommodation compared to other forms of housing.

Appendix Note

The information provided in the Appendix note:

- is out of date
- incorrectly implies that certification of buildings is a special case, and
- does not address the buildings described above.

Requested Change/Addition: (What wording do you propose for the change?)

A-1.1.1.1. Application of this Code

....

2) This Code applies to both site-built *buildings*, and *factory-constructed buildings*.

(See Note A-1.1.1.1.(2).)

Clean	Marked
<p>A-1.1.1.1.(2) Factory-Constructed Buildings. The NBC applies the same requirements to site-built and factory-constructed buildings.</p> <p>Factories and Building Configurations Factory-constructed buildings are not limited to those constructed in large plants with conditioned spaces. CSA A277, Procedure for Certification of Prefabricated Buildings, Modules and Panels” defines “factory” as “a manufacturing facility that provides protection of construction materials, components, equipment, and products against adverse environmental effects during storage and</p>	<p>A-1.1.1.1.(2) Factory-Constructed Buildings. The NBC applies the same requirements to site-built and factory-constructed buildings. However, it can often be difficult to determine whether a factory-constructed building complies with the Code once it has been delivered to the construction site because many of the wall, roof and floor assemblies are closed in and so their components cannot be inspected.</p> <p>Factories and Building Configurations <u>Factory-constructed buildings are not limited to those constructed in large plants with conditioned spaces. CSA A277, Procedure for Certification of Prefabricated Buildings, Modules and Panels” defines “factory” as “a manufacturing facility that provides protection of construction materials, components, equipment, and products against</u></p>

fabrication.” This is reflected in the Code definition for factory constructed building.

Typically, factory-constructed buildings are:

- constructed with sufficient inherent strength and rigidity to resist transport and installation loads
- constructed on a steel frame, or
- constructed on a chassis.

The Code applies to all factory-constructed buildings regardless of how they are configured for transport. This is also reflected in the Code definition for factory constructed building. (See Div. A, 1.4.1.1.2. Defined Terms.)

Certification of Factory-Constructed Buildings, Modules and Panels

Acceptance of building products based on third party certification is a well-established practice where the required performance of the product cannot be determined by a simple visual inspection. The development of certification procedures is typically left to certification bodies accredited by the Standards Council of Canada. The result is that there are very few certification standards for building materials, components, assemblies or systems and fewer requirements for certification in building codes and regulations. CSA A277, “Procedure for Certification of Prefabricated Buildings, Modules and Panels” was developed to promote consistency in the certification of these products.

Like all certification procedures, CSA A277 addresses:

- the in-plant quality process, which includes identification of personnel and responsibilities, sign-offs, record-keeping
- annual audits by the certification body
- random inspections by the certification body
- documentation of compliance.

It also provides information on professional involvement and the role of local building officials.

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Like all certification procedures, CSA A277 addresses:

- the in-plant quality process, which includes identification of personnel and responsibilities, sign-offs, record-keeping
- annual audits by the certification body
- random inspections by the certification body
- documentation of compliance.

It also provides information on professional involvement and the role of local building officials.

This standard describes a procedure whereby an independent certification agency can review the quality control procedures of a factory and make periodic unannounced inspections of its products. The standard is not a building code, only a

Technical Standards for Factory-Constructed Buildings

CSA Z240 MH Series, "Manufactured Homes," references the applicable NBC Part 9 requirements with:

- some additional or more stringent requirements to address issues specific to factory-constructed buildings, such as resistance to loads imposed in-transit and during installation
- a few exceptions or less stringent requirements where acceptable performance has been demonstrated or to address affordability issues. The latter principally pertains to energy efficiency.

Because it would be illogical to have two different sets of requirements for houses—one set that applies to site-built houses and one set that applies to factory-constructed houses—the NBC does not reference the CSA Z240 MH Series of standards.

It should be noted that CSA Z240.10.1, "Site Preparation, Foundation, and Installation of Buildings," which is referenced in NBC Part 9, is not part of the CSA Z240 MH Series. This standard contains requirements for:

- site preparation for buildings to be installed on

~~procedure for certifying compliance of factory-constructed components with a building code or other standard. If a factory-constructed building bears the label of an accredited certification agency indicating that compliance with the National Building Code has been certified using the CSA A277 procedure, the accepting authority will have some assurance that the concealed components do not require re-inspection on-site.~~

Technical Standards for Factory-Constructed Buildings

~~On the other hand, standards in the~~ CSA Z240 MH Series, "Manufactured Homes," references the applicable NBC Part 9 requirements with:

- some additional or more stringent requirements to address issues specific to factory-constructed buildings, such as resistance to loads imposed in-transit and during installation
- a few exceptions or less stringent requirements where acceptable performance has been demonstrated or to address affordability issues. The latter principally pertains to energy efficiency.

~~do resemble a building code. Most of the individual standards in the series contain requirements regarding many issues also covered in the NBC. Some of these Z240 MH provisions are performance requirements with no quantitative criteria, some simply reference the applicable NBC requirements, while others contain requirements that differ from those in the NBC. Because it would be illogical to have two different sets of requirements for buildingshouses—one set that applies to site-built buildingshouses and one set that applies to factory-constructed buildingshouses—the NBC does not reference these Z240 MH standards. One of the individual standards in the Z240 MH series deals with special requirements for manufactured homes related to the fact that these houses must be moved over roads, which is an issue the NBC does not address. Therefore, labeling that indicates that a factory-constructed house complies with the Z240 MH standards can NOT be taken as an indication that the house necessarily complies with the building code in effect for the location where the house will be sited.~~

It should be noted that~~The NBC does reference~~ CSA

<p>surface foundations</p> <ul style="list-style-type: none"> • surface foundations that may be used where the soil is not moisture susceptible or where the building complies with the deformation resistance test provided in CSA Z240.2.1, “Structural Requirements for Manufactured Homes” – whether the building is a dwelling unit or not • anchorage for buildings on surface foundations • connection of modules in multiple-section prefabricated buildings • skirting for buildings on surface foundations. 	<p>Z240.10.1, “Site Preparation, Foundation, and Anchorage installation of Manufactured Homes Buildings,” which referenced in NBC Part 9, is not actually part of the CSA Z240 MH Series. This standard contains requirements for</p> <ul style="list-style-type: none"> • <u>site preparation for buildings to be installed on surface foundations</u> • <u>surface foundations that may be used where the soil is not moisture susceptible or where the buildings—not just houses—comply with the deformation resistance test provided in CSA Z240.2.1, “Structural Requirements for Manufactured Homes:” —whether the building is a dwelling unit or not</u> • <u>anchorage for buildings on surface foundations</u> • <u>connection of modules in multiple-section prefabricated buildings</u> • <u>skirting for buildings on surface foundations.</u>
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Justification/Explanation: (How does the requested change address the problem?)

Code Provision

The requested change to identify “factory-constructed building” as a defined term makes clear that the NBC applies to buildings that:

- are not constructed in a factory as the term is typically understood, and
- may be constructed on a chassis.

Appendix Note

The requested changes to the Appendix Note brings the information up-to-date, describes certification of prefabricated buildings, modules and panels in the context of the well-established practice of accepting products based on certification and highlights the application of the Code to all off-site constructed buildings.

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Application statements are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

The requested change will help to reduce costs of housing by recognizing that houses constructed in facilities not typically thought of as factories and houses on chasses fall within the application of the Code and should be recognized as dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Can be enforced by the existing infrastructure with no additional resources.
Will clarify that the Code applies to all off-site constructed buildings.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

None

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

1.4.1.2.

Subject: (What is the subject of the code change or the existing code provision title?)

Defined Terms

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

A number of requirements in Part 9 apply to mezzanines. It is not immediately apparent whether these apply to sleeping lofts which are common in tiny houses.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Mezzanine means an intermediate floor assembly between the floor and ceiling of any room or storey and includes an interior balcony. ([See Note A-1.4.1.2.](#))

A-1.4.1.2.(1) Defined Terms.

[Mezzanine](#)

[Mezzanines in dwelling units must comply with the minimum ceiling and clear heights requirements. Spaces under cathedral ceilings used only for sleeping need not comply with the ceiling and clear height requirements. Consequently, they are not considered to be mezzanines. \(See Div. B Note A-9.5.3.1.\)](#)

Justification/Explanation: (How does the requested change address the problem?)

The requested change helps to make clear that loft spaces used only for sleeping are not considered to be mezzanines. The referenced Division B, Appendix Note A-9.5.3.1. provides further clarification.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix Notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will facilitate proper application of requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.1.2.

Subject: (What is the subject of the code change or the existing code provision title?)

Combination Rooms

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

For a space to be considered to be part of a combination room, the open area must be at least 3 m², larger if the wall area on the dependent side is more than 7.5 m² (~ 80.7 sq. ft.).

- It is not entirely clear when a space is considered to be two spaces. For example, is an “L” shaped space with different functions in each leg of the “L” considered a single space or a combination space with a 100% opening?
- In very small dwelling units, 3 m² may be more than 100% of the wall area. (The specified minimum 3 m² is 40% of 7.5 m².)

Example

With a full floor-to-ceiling opening and the normal minimum ceiling height of 2.1 m, a minimum 3 m² opening requires a minimum width of 1.43 m (4'-8"). If a sleeping space is located under a sleeping loft, the opening height may only be 1.95 m (see CCR re. Article 9.5.3.1. on Ceiling Heights). In this case, the minimum required width would be 1.54 m (slightly over 5'). If the sleeping space contains only a double mattress [1.37 m (4'-6")]with the mattress width oriented parallel to the opening, the opening would have to be wider than the sleeping space.

Requested Change/Addition: (What wording do you propose for the change?)

Revise Sentence 9.5.1.2.(1) and ~~insert new first paragraph into~~ add text to Appendix Note A-9.5.1.2.

- 1) Two or more areas may be considered as a combination room if:
 - a) there are no walls between the two spaces, or

- b) the opening between the areas occupies the larger of 3 m² or 40% or more of the area of the wall measured on the side of the dependent area where the wall is 7.5 m² or more in area.

A-9.5.1.2. Combination Rooms. A number of requirements in Part 9 apply to rooms or spaces with specific functions. In some cases, more than one function may be accommodated in a single room or space. Typically, these are:

- living and dining
- living, eating and kitchen
- living and sleeping
- all of the above.

Where there are no walls between the functional areas, these are considered to be combination spaces.

Light and Ventilation

If a room draws natural light and natural ventilation from another area, the opening between the two areas must be large enough to effectively provide sufficient light and air. This is why a minimum opening of 3 m² is required, or the equivalent of a set of double doors. The effectiveness of the transfer of light and air also depends on the size of the transfer opening in relation to the size of the dependent room; in measuring the area of the wall separating the two areas, the whole wall on the side of the dependent room should be considered, not taking into account offsets that may be in the surface of the wall. In very small dwelling units, the vertical plane between the two functional spaces may be less than 3 m². If there are no walls between the spaces, these may still be considered to be a combination space.

The opening does not necessarily have to be in the form of a doorway; it may be an opening at eye level. However, if the dependent area is a bedroom, provision must be made for the escape window required by Article 9.9.10.1. to fulfill its safety function. This is why a direct passage is required between the bedroom and the other area; the equivalent of at least a doorway is therefore required for direct passage between the two areas.

Smoke Alarms

In dwelling units, smoke alarms are required in all sleeping rooms and a location between the sleeping rooms and the remainder of the storey. A sleeping space and an adjacent space may be considered a combination room provided the opening between the two complies with the opening area criteria or there are no walls between the two spaces.

Justification/Explanation: (How does the requested change address the problem?)

The requested change allows for spaces to be considered as combination rooms where the opening between two functional spaces is less than 3 m².

As stated in the existing Appendix Note, "The effectiveness of the transfer of light and air also depends on the size of the transfer opening in relation to the size of the dependent room...." Where the dependent room or space is very small, it should be possible to reduce the absolute opening area to less than 3 m². This recognizes common tiny house configurations that do not increase levels of hazard with respect to the requirements that apply to combination rooms; specifically:

- 9.5.1.2. Combination Rooms
Sentence (2) requires direct passage between a dependent bedroom and the main area of a combination room or space.

- 9.9.10.1. Egress Windows or Doors for Bedrooms
Sentence (1) requires bedrooms and combination bedrooms to have an escape window or exterior door unless the suite is sprinklered
- 9.10.15.2. Area and Location of Exposing Building Face
Sentence (2) – precludes the division of a wall enclosing a single room or space or combination space for the purpose of determining limiting distance where the limiting distance is less than 2 m
- 9.32.2.2. Non-Heating-Season Natural Ventilation
Table 9.32.2.2. applies a single minimum unobstructed natural ventilation area to finished rooms or combinations of these rooms, with the exception of bathrooms and water-closet rooms

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (The provision serves as a definition. Definitions are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
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- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.3.1.(1) and (2)

Subject: (What is the subject of the code change or the existing code provision title?)

Ceiling Heights of Rooms or Spaces

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

In general for residential occupancies, ceiling height must be a minimum 2.1 m (~6'-11"). For secondary suites, ceiling height is permitted to be a minimum 1.95 m (6'-4¾") and clear height under beams and ducting is permitted to be a minimum 1.85 m (~6'-1").

Secondary suites are permitted to be up to 80 m² (~860 sq. ft.) in total floor area. Dwelling units with a significantly smaller floor area are being constructed. To provide adequate livable space, sleeping lofts are often constructed under cathedral ceilings above other sleeping spaces, bathrooms or kitchen spaces.

At present, the minimum 2.1 m ceiling height applies to all spaces in these very small houses. The result is that either:

- floor area must be increased to provide sleeping space on the main level, or
- building height must be increased to accommodate the loft

Either case adds unnecessary cost.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

1) Except as provided in Sentences (2) and (3), the ceiling heights and clear heights in rooms or spaces in residential occupancies shall conform to Table 9.5.3.1. (See A-9.5.3.1.)

- 2) Ceiling heights ~~in secondary suites~~ shall be not less than 1.95 m in
- a) in secondary suites, and
 - b) sleeping spaces, kitchens and bathrooms under sleeping lofts in dwelling units with not more than 40 m² total floor area.

A-9.5.3.1. Ceiling Heights of Rooms or spaces. Sleeping lofts are commonly constructed under cathedral ceilings in very small dwelling units. Where these provide space only for sleeping, they may be considered as built-in bunk beds. As such, the minimum ceiling heights do not apply.

Clean

1) Except as provided in Sentences (2) and (3), the ceiling heights and clear heights in rooms or spaces in residential occupancies shall conform to Table 9.5.3.1. (See A-9.5.3.1.)

- 2) Ceiling heights shall be not less than 1.95 m in
 - a) in *secondary suites*, and
 - b) sleeping spaces, kitchens and bathrooms under sleeping lofts in dwelling units with not more than 40 m² total *floor area*.

Justification/Explanation: (How does the requested change address the problem?)

The requested change allows for lower ceiling heights in sleeping spaces, kitchens and bathrooms located under sleeping lofts in very small dwelling units.

The requested change to Sentence (2) is consistent with the existing Intent statement:

“To limit the probability, where provision of a minimum 2.1 m ceiling height may be cost-prohibitive, that an inadequate ceiling height of rooms or spaces [i.e. less than 1.95 m high] will lead to collision with protrusions from ceilings, such as lighting fixtures, ceiling fans and low door heads, which could lead to”

The requested Appendix note provides guidance on the application of the minimum ceiling height requirements. This is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, ceiling height in sleeping lofts should not be regulated.

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

OS3 Safety in Use

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

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- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

None

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.23.13.

Subject: (What is the subject of the code change or the existing code provision title?)

Lateral Loads

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units, particularly where these are constructed on a chassis.

Code Provision

The existing requirements assume that a factory-constructed building will not be moved from its initial installation location or that it will be moved very infrequently and later installation locations will depend on the lateral resistance of the building.

These assumptions do not work well for very small houses constructed on a chassis and are intended to be moved frequently.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Insert new Sentence 9.23.13.2.[2], reference Note A-9.23.13., and add text to Note A-9.23.13. and revise Table A-9.23.13.

9.23.13.2. Requirements for High Wind and Seismic Forces

....

[2] This Article also applies to all factory-constructed buildings that are constructed on a chassis. (See Note A-9.23.13.)

A-9.23.13. Bracing for Resistance to Lateral Loads. Subsection 9.23.14. along with Articles 9.23.3.4., 9.23.3.5., 9.23.6.1., 9.23.9.8., 9.23.15.5., 9.29.5.8., 9.29.5.9., 9.29.6.3. and 9.29.9.3. provide explicit requirements to address resistance to wind and earthquake loads in higher wind and earthquake regions of Canada.

Factory-Constructed Buildings on Chasses

For factory-constructed buildings, the greater of the transport and installation loads and the wind or seismic loads at the installation site generally determines where the buildings may be located. Where a factory-constructed building is constructed on a chassis and is configured to frequent moves, the building should be capable of resisting wind loads in transit and wind and seismic loads wherever the building is installed. As these locations cannot typically be determined for the purpose of applying Code requirements, some assumptions and simplifications have been incorporated into the requirements for these buildings.

Wind

The requirements for high wind forces apply to all factory-constructed building constructed on a chassis. This is considered to be appropriate because the only location listed in Appendix C where the 1-in-50 hourly wind pressure is 1.20 kPa or more is Resolution Island. Factory-constructed buildings on chasses could not be towed to such locations.

Seismic

No locations are listed in Appendix C where spectral response acceleration $S_a(0.2)$ exceeds 1.8.

Table A-9.23.13.
Application of Lateral Load Requirements

Applicable Requirements	Wind (HWP)			Earthquake $S_a(0.2)$				
	Low to Moderate	High	Extreme	Low to Moderate	High	Extreme	High	Extreme
	HWP < 0.80 kPa	$0.80 \leq \text{HWP} < 1.20$ kPa	HWP ≥ 1.20 kPa	$S_a(0.2) \leq 0.70$	$0.70 < S_a(0.2) \leq 1.8$	$S_a(0.2) > 1.8$	$0.70 < S_a(0.2) \leq 1.8$	$S_a(0.2) > 1.8$
	All Construction			All Construction	Heavy Construction ⁽¹⁾		Light Construction	
Design requirements in 9.23.16.2., 9.27., 9.29	X(2)	N/A	N/A	X	N/A	N/A	N/A	N/A
Bracing requirements in 9.23.13.	X	X(3)	N/A	X	X(34)(45)	N/A	X(45)(56)	N/A X(7)
Part 4 or CWC Guide	X	X	X	X	X	X	X	X

X = requirements are applicable

Notes to Table A-9.23.13.:

(1) See Note A-9.23.13.2.(1)(a)(i).

(2) Requirements apply to exterior walls only.

(3) Requirements apply to factory-constructed buildings constructed on a chassis.

(34) Requirements apply where lowest exterior frame walls support not more than one floor.

(45) All constructions may include the support of a roof in addition to the stated number of floors.

(56) Requirements apply where lowest exterior frame walls support not more than two floors.

(7) Requirements apply to factory-constructed buildings constructed on a chassis.

Clean

Description of Change to Table A-9.23.13.

In row titled "Bracing requirements in 9.23.13.":

- Insert new footnote reference [3] after "X" in the high wind column
- Renumber existing footnote references (3) to (5)
- Replace "N/A" in seismic column for extreme forces and light construction with "X(7)"

- Insert new footnote [3] “Requirements apply to factory-constructed buildings constructed on a chassis.”
- Renumber existing footnotes (3) to (5)
- Add new footnote (7) “Requirements apply to factory-constructed buildings constructed on a chassis.”

Justification/Explanation: (How does the requested change address the problem?)

Wind

Based on the data provided in NBC Appendix C Climatic and Seismic Information for Building Design in Canada, the requirements for high wind forces apply in all locations where it is practical to trailer a factory constructed building. The requested change makes this application clear.

(1-in-50 hourly wind pressure of 1.2 kPa corresponds to 43.1 m/s wind speed or 155.16 km/h)

Earthquake

As stated in the requested addition to the Appendix Note, no locations are listed in Appendix C where spectral response acceleration $S_a(0.2)$ exceeds 1.8.

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Application statements are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units where these are constructed on a chassis.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms

- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

A-9.9.10.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Egress Windows or Doors for Bedrooms

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

Except where the suite is sprinklered, the requirement for an egress window applies to bedrooms and combination rooms that do not have an exterior door. Where the sleeping space is a loft in a very small dwelling unit, an egress window is not required.

- A fire in a very small dwelling unit will involve the full dwelling unit faster than it will in a larger dwelling unit.
- Exiting from a loft will take longer than existing from a sleeping space on the main level of the dwelling unit

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Revise Appendix note A-9.9.10.1.(1).

A-9.9.10.1. (1) Escape Windows from Bedrooms. Sentence 9.9.10.1.(1) generally requires every bedroom in an unsprinklered suite to have at least one window or door opening to the outside that is large enough and easy enough to open so that it can be used as an exit in the event that a fire prevents use of the building's normal exits. The minimum unobstructed opening specified for escape windows must be achievable using only the normal window operating procedure. The escape path must not go through nor open onto another room, floor or space.

Where a bedroom is located in an unsprinklered suite in a basement, an escape window or door must be located in the bedroom. It is not sufficient to rely on egress through other basement space to another escape window or door.

An escape window is not required in sleeping spaces that are part of a combination room that has a exterior door or an escape window. This includes sleeping spaces that are on a different level from the combination room of which they are a part. Exiting from these spaces will take longer than existing from a sleeping space on the same level as the rest of the combination space. The installation of a window or skylight in the sleeping space complying with the minimum area and dimensions for escape windows will provide additional protection in the case of a fire.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested Appendix note identifies provides guidance on the installation of egress windows in sleeping lofts and other sleeping spaces that are on a different level from the combination room of which they are a part.

The provision of guidance rather than the addition of a requirement is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, no change should be made to the application of the requirement.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix Notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

None.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will assist in proper application of the requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs

- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

A-9.8.8.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Required Guards

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada’s Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

The requirement for a guard applies depending on differences in elevation between adjacent surfaces. It is not apparent whether the requirement applies to sleeping lofts, which are common in tiny houses.

Requested Change/Addition: (What wording do you propose for the change?)

Insert a new first Paragraph in Appendix Note A-9.8.8.1. and revise the first sentence of the existing first paragraph.

Marked

A-9.8.8.1. Required Guards. The requirement to install a guard applies only to walking surfaces. Lofts in dwelling units designed for sleeping only and do not comply with the minimum ceiling and clear height requirements are not considered to be walking surfaces. (See Note A-9.5.3.1.)

The requirements ~~relating to guards stated~~ in Part 9 are based on the premise that, wherever there is a difference in elevation of 600 mm or more between two floors, or between a floor or other surface to which access is provided for other than maintenance purposes and the next lower surface, the risk of injury in a fall from the higher surface is sufficient to warrant the installation of some kind of barrier to reduce the chances of such a fall. A wall along the edge of the higher surface will obviously prevent such a fall, provided the wall is sufficiently strong that a person cannot fall through it. Where there is no wall, a guard must be installed. Because guards clearly provide less protection than walls, additional requirements apply to guards to ensure that a minimum level of protection is provided. These relate to the characteristics described in Notes A-9.8.8.3., A-9.8.8.5.(1) and (2), A-9.8.8.5.(3) and A-9.8.8.6.(1).

Justification/Explanation: (How does the requested change address the problem?)

The requested Appendix Note explains that the current requirement does not require a guard to be installed to protect a sleeping loft.

The addition of an Appendix note rather than requirements for constructions other than stairs is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, protection of sleeping lofts should not be regulated.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will assist in proper application of the requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2. _Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2. _Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.8.1.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Application of Section 9.8. Stairs, Ramps, Handrails and Guards

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

The requirements for stairs, and handrails and guards for stairs, apply where stairs are installed. While it is common and expected practice to install stairs between floor levels, there is no requirement to install a stair and there has been no evidence that this needs to be regulated.

It may not be clear to code users when a construction that provides access between levels is a stair and when it might be considered something else; e.g., a ladder.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

9.8.1.1. General

1) This Section applies to the design and construction of interior and exterior stairs, steps, ramps, handrails and guards. (See Note A-9.8.1.1.)

A-9.8.1.1. Application of Requirements for Stairs, and Handrails and Guards Serving Stairs
The requirements for stairs apply only where stairs are installed. Stair are not required to be installed. A construction that serves a sleeping loft that is exempted from the ceiling height requirements, and consequently treated no differently than a bunk bed, should not be considered to be a stair. While it may be appropriate to install handrails on such constructions depending on their configuration, neither handrails nor guards are required.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested Appendix Note explains that the current requirement does not require stairs to be installed and that, where a construction other than a stair is installed, the handrail and guard requirements for stairs do not apply.

The addition of an Appendix note rather than requirements for constructions other than stairs is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, ceiling height in sleeping lofts should not be regulated.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3_Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.5.3.

Subject: (What is the subject of the code change or the existing code provision title?)

Doorways to Rooms with a Bathtub, Shower or Water Closet

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

The requirement for minimum widths for doorways to rooms with a bathtub, shower or water closet depends on the width of the hallways serving those rooms.

It may not be clear to code users how the requirement applies, or not, where the room is not served by a hallway. Minimum doorway width in very small dwelling units can have significant implications for floor area and cost.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Insert new second paragraph in Appendix Note A-9.5.5.3.

A-9.5.5.3. Doorways to Rooms with a Bathtub, Shower or Water Closet . The intent of Article 9.5.5.3. is to ensure a certain degree of barrier-free access to rooms that provide some or all of the facilities found in a typical residential bathroom.

The requirement assumes a typical floor plan where bathrooms and water closet rooms are served by a hallway – a space that provides only for circulation to other rooms or spaces. The minimum doorway width depends on the width of the hallway. The requirement does not apply to where the bathroom is not served by a hallway. This is most likely to be the case in very small dwelling units. The bathroom may open directly into a room or space that serves a purpose other than circulation and the overall floor area of the dwelling unit is likely to be such that none of the rooms or spaces are barrier-free.

If the minimum 860 mm hallway serves more than one room with identical facilities, only one of the rooms is required to have a door not less than 760 mm wide.

If a number of rooms have different facilities, for example, one room has a shower, lavatory and water closet, and another room has a lavatory and water closet, the room with the shower, lavatory and water closet must have the

minimum 760 mm wide door. Where multiple rooms provide the same or similar facilities, one of these rooms must comply with the requirement to have at least one bathtub or shower, one lavatory and one water closet. Where the fixtures are located in two separate rooms served by the same hallway, the requirement for the minimum doorway width would apply to both rooms.

If the minimum 860 mm hallway does not serve any room containing a bathtub, shower and water closet, additional fixtures do not need to be installed.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested change explains that the current requirement does not apply where the room is not served by a hallway. This is consistent with the Intent of the requirement:

“To limit the probability of a person using a manual wheelchair or other manual mobility assistance device being unable to gain access to a bathtub, shower or water-closet room without the assistance of another person, where hallways serving rooms with a bathtub, shower or water-closet are wide enough to accommodate a wheelchair.”

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will assist in proper application of the requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size

- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.5.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Doorway Opening Sizes

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

Doorway Height

In general for dwelling units, doorway height must accommodate doors that are a minimum 1,980 mm (6'-6"). For secondary suites, doorway height is permitted to be reduced to accommodate doors that are a minimum 1,890 mm (~6'-2½").

Secondary suites are permitted to be up to 80 m² (~860 sq. ft.) in total floor area. Dwelling units with a significantly smaller floor area are being constructed. To provide adequate livable space, sleeping lofts are often constructed under cathedral ceilings above other sleeping spaces, bathrooms or kitchen spaces.

At present, the minimum 1,980 mm door height applies to all spaces in these very small houses. The result is that either:

- floor area must be increased to provide sleeping space on the main level, or
- building height must be increased to accommodate the loft

Either case adds unnecessary cost.

Doorway Width

As with height, minimum doorway width in very small dwelling units can have significant implications for floor area and cost. The specified minimum doorway widths apply only to swing-type and folding doors. The permitted use of narrower sliding doors may not be readily apparent.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

- 1) Except as provided in Sentence (2) and Articles 9.5.5.3., 9.9.6.2. and 9.9.6.3., doorway openings within dwelling units and within houses with a secondary suite

including their common spaces shall be designed to accommodate at least the door sizes given in Table 9.5.5.1. for swing-type and folding doors. (See A-9.5.5.1.)

2) Doorway openings ~~within secondary suites~~ shall be designed to accommodate swing-type and folding doors not less than 1 890 mm high:

a) within secondary suites where the ceiling height complies with ~~Sentence Clause~~ 9.5.3.1.(2)(a), and

b) within dwelling units with not more than 40 m² total floor area where the ceiling height at the location of the door complies with Clause 9.5.3.1.(2)(b).

A-9.5.5.1. Doorway Opening Sizes. In very small dwelling units, door width can have implications for total floor area. Where sliding doors are installed, the doorway opening areas do not apply.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested change allows for lower doorway opening heights for doorways serving sleeping spaces, kitchens and bathrooms located under sleeping lofts in very small dwelling units. Expanding the application of the exception is consistent with existing Intent 1 of Sentence (2):

“To exempt doors within secondary suites from the requirement of Sentence (1) which would otherwise require that doors conform to sizes in Table 9.5.5.1., on the basis that accommodating taller doors may be cost prohibitive.”

The requested Appendix note highlights the limited application of the requirements to swing-type and folding doors consistent with the application statement developed in the transition to objective-based codes.

“A1. Minimum height and width of doorway openings for swing-type and folding doors for doorways within < dwelling units > and doors that serve exterior balconies, in < buildings > to which Part 9 applies [see es007226 for application of Part 9].

Exceptions: except as stated in:

A. Sentence 9.6.3.3.(1), which applies to doors to bathrooms served by a hallway that is not less than 860 mm wide,

B. Sentences 3.8.3.3.(1), (2) and (11), which apply to < barrier-free > design in < buildings > described in Sentence 3.8.1.1.(1) [see Sentence 9.5.2.1.(1)], and C. es008203, which applies to doors that open into a < public corridor > from a < suite >.”

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

OS3 Safety in Use

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

1.4.1.2.

Subject: (What is the subject of the code change or the existing code provision title?)

Defined Terms

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

A number of requirements in Part 9 apply to mezzanines. It is not immediately apparent whether these apply to sleeping lofts which are common in tiny houses.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Mezzanine means an intermediate floor assembly between the floor and ceiling of any room or storey and includes an interior balcony. ([See Note A-1.4.1.2.](#))

A-1.4.1.2.(1) Defined Terms.

[Mezzanine](#)

[Mezzanines in dwelling units must comply with the minimum ceiling and clear heights requirements. Spaces under cathedral ceilings used only for sleeping need not comply with the ceiling and clear height requirements. Consequently, they are not considered to be mezzanines. \(See Div. B Note A-9.5.3.1.\)](#)

Justification/Explanation: (How does the requested change address the problem?)

The requested change helps to make clear that loft spaces used only for sleeping are not considered to be mezzanines. The referenced Division B, Appendix Note A-9.5.3.1. provides further clarification.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix Notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will facilitate proper application of requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.23.13.

Subject: (What is the subject of the code change or the existing code provision title?)

Lateral Loads

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units, particularly where these are constructed on a chassis.

Code Provision

The existing requirements assume that a factory-constructed building will not be moved from its initial installation location or that it will be moved very infrequently and later installation locations will depend on the lateral resistance of the building.

These assumptions do not work well for very small houses constructed on a chassis and are intended to be moved frequently.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Insert new Sentence 9.23.13.2.[2], reference Note A-9.23.13., and add text to Note A-9.23.13. and revise Table A-9.23.13.

9.23.13.2. Requirements for High Wind and Seismic Forces

....

[2] This Article also applies to all factory-constructed buildings that are constructed on a chassis. (See Note A-9.23.13.)

A-9.23.13. Bracing for Resistance to Lateral Loads. Subsection 9.23.14. along with Articles 9.23.3.4., 9.23.3.5., 9.23.6.1., 9.23.9.8., 9.23.15.5., 9.29.5.8., 9.29.5.9., 9.29.6.3. and 9.29.9.3. provide explicit requirements to address resistance to wind and earthquake loads in higher wind and earthquake regions of Canada.

Factory-Constructed Buildings on Chasses

For factory-constructed buildings, the greater of the transport and installation loads and the wind or seismic loads at the installation site generally determines where the buildings may be located. Where a factory-constructed building is constructed on a chassis and is configured to frequent moves, the building should be capable of resisting wind loads in transit and wind and seismic loads wherever the building is installed. As these locations cannot typically be determined for the purpose of applying Code requirements, some assumptions and simplifications have been incorporated into the requirements for these buildings.

Wind

The requirements for high wind forces apply to all factory-constructed building constructed on a chassis. This is considered to be appropriate because the only location listed in Appendix C where the 1-in-50 hourly wind pressure is 1.20 kPa or more is Resolution Island. Factory-constructed buildings on chasses could not be towed to such locations.

Seismic

No locations are listed in Appendix C where spectral response acceleration $S_a(0.2)$ exceeds 1.8.

Table A-9.23.13.
Application of Lateral Load Requirements

Applicable Requirements	Wind (HWP)			Earthquake $S_a(0.2)$				
	Low to Moderate	High	Extreme	Low to Moderate	High	Extreme	High	Extreme
	HWP < 0.80 kPa	$0.80 \leq \text{HWP} < 1.20$ kPa	HWP ≥ 1.20 kPa	$S_a(0.2) \leq 0.70$	$0.70 < S_a(0.2) \leq 1.8$	$S_a(0.2) > 1.8$	$0.70 < S_a(0.2) \leq 1.8$	$S_a(0.2) > 1.8$
	All Construction			All Construction	Heavy Construction ⁽¹⁾		Light Construction	
Design requirements in 9.23.16.2., 9.27., 9.29	X(2)	N/A	N/A	X	N/A	N/A	N/A	N/A
Bracing requirements in 9.23.13.	X	X(3)	N/A	X	X(34)(45)	N/A	X(45)(56)	N/A X(7)
Part 4 or CWC Guide	X	X	X	X	X	X	X	X

X = requirements are applicable

Notes to Table A-9.23.13.:

(1) See Note A-9.23.13.2.(1)(a)(i).

(2) Requirements apply to exterior walls only.

(3) Requirements apply to factory-constructed buildings constructed on a chassis.

(34) Requirements apply where lowest exterior frame walls support not more than one floor.

(45) All constructions may include the support of a roof in addition to the stated number of floors.

(56) Requirements apply where lowest exterior frame walls support not more than two floors.

(7) Requirements apply to factory-constructed buildings constructed on a chassis.

Clean

Description of Change to Table A-9.23.13.

In row titled "Bracing requirements in 9.23.13.":

- Insert new footnote reference [3] after "X" in the high wind column
- Renumber existing footnote references (3) to (5)
- Replace "N/A" in seismic column for extreme forces and light construction with "X(7)"

- Insert new footnote [3] “Requirements apply to factory-constructed buildings constructed on a chassis.”
- Renumber existing footnotes (3) to (5)
- Add new footnote (7) “Requirements apply to factory-constructed buildings constructed on a chassis.”

Justification/Explanation: (How does the requested change address the problem?)

Wind

Based on the data provided in NBC Appendix C Climatic and Seismic Information for Building Design in Canada, the requirements for high wind forces apply in all locations where it is practical to trailer a factory constructed building. The requested change makes this application clear.

(1-in-50 hourly wind pressure of 1.2 kPa corresponds to 43.1 m/s wind speed or 155.16 km/h)

Earthquake

As stated in the requested addition to the Appendix Note, no locations are listed in Appendix C where spectral response acceleration $S_a(0.2)$ exceeds 1.8.

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Application statements are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units where these are constructed on a chassis.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms

- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.1.2.

Subject: (What is the subject of the code change or the existing code provision title?)

Combination Rooms

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

For a space to be considered to be part of a combination room, the open area must be at least 3 m², larger if the wall area on the dependent side is more than 7.5 m² (~ 80.7 sq. ft.).

- It is not entirely clear when a space is considered to be two spaces. For example, is an “L” shaped space with different functions in each leg of the “L” considered a single space or a combination space with a 100% opening?
- In very small dwelling units, 3 m² may be more than 100% of the wall area. (The specified minimum 3 m² is 40% of 7.5 m².)

Example

With a full floor-to-ceiling opening and the normal minimum ceiling height of 2.1 m, a minimum 3 m² opening requires a minimum width of 1.43 m (4'-8"). If a sleeping space is located under a sleeping loft, the opening height may only be 1.95 m (see CCR re. Article 9.5.3.1. on Ceiling Heights). In this case, the minimum required width would be 1.54 m (slightly over 5'). If the sleeping space contains only a double mattress [1.37 m (4'-6")]with the mattress width oriented parallel to the opening, the opening would have to be wider than the sleeping space.

Requested Change/Addition: (What wording do you propose for the change?)

Revise Sentence 9.5.1.2.(1) and ~~insert new first paragraph into~~ add text to Appendix Note A-9.5.1.2.

- 1) Two or more areas may be considered as a combination room if:
 - a) there are no walls between the two spaces, or

- b) the opening between the areas occupies the larger of 3 m² or 40% or more of the area of the wall measured on the side of the dependent area where the wall is 7.5 m² or more in area.

A-9.5.1.2. Combination Rooms. A number of requirements in Part 9 apply to rooms or spaces with specific functions. In some cases, more than one function may be accommodated in a single room or space. Typically, these are:

- living and dining
- living, eating and kitchen
- living and sleeping
- all of the above.

Where there are no walls between the functional areas, these are considered to be combination spaces.

Light and Ventilation

If a room draws natural light and natural ventilation from another area, the opening between the two areas must be large enough to effectively provide sufficient light and air. This is why a minimum opening of 3 m² is required, or the equivalent of a set of double doors. The effectiveness of the transfer of light and air also depends on the size of the transfer opening in relation to the size of the dependent room; in measuring the area of the wall separating the two areas, the whole wall on the side of the dependent room should be considered, not taking into account offsets that may be in the surface of the wall. In very small dwelling units, the vertical plane between the two functional spaces may be less than 3 m². If there are no walls between the spaces, these may still be considered to be a combination space.

The opening does not necessarily have to be in the form of a doorway; it may be an opening at eye level. However, if the dependent area is a bedroom, provision must be made for the escape window required by Article 9.9.10.1. to fulfill its safety function. This is why a direct passage is required between the bedroom and the other area; the equivalent of at least a doorway is therefore required for direct passage between the two areas.

Smoke Alarms

In dwelling units, smoke alarms are required in all sleeping rooms and a location between the sleeping rooms and the remainder of the storey. A sleeping space and an adjacent space may be considered a combination room provided the opening between the two complies with the opening area criteria or there are no walls between the two spaces.

Justification/Explanation: (How does the requested change address the problem?)

The requested change allows for spaces to be considered as combination rooms where the opening between two functional spaces is less than 3 m².

As stated in the existing Appendix Note, "The effectiveness of the transfer of light and air also depends on the size of the transfer opening in relation to the size of the dependent room...." Where the dependent room or space is very small, it should be possible to reduce the absolute opening area to less than 3 m². This recognizes common tiny house configurations that do not increase levels of hazard with respect to the requirements that apply to combination rooms; specifically:

- 9.5.1.2. Combination Rooms
Sentence (2) requires direct passage between a dependent bedroom and the main area of a combination room or space.

- 9.9.10.1. Egress Windows or Doors for Bedrooms
Sentence (1) requires bedrooms and combination bedrooms to have an escape window or exterior door unless the suite is sprinklered
- 9.10.15.2. Area and Location of Exposing Building Face
Sentence (2) – precludes the division of a wall enclosing a single room or space or combination space for the purpose of determining limiting distance where the limiting distance is less than 2 m
- 9.32.2.2. Non-Heating-Season Natural Ventilation
Table 9.32.2.2. applies a single minimum unobstructed natural ventilation area to finished rooms or combinations of these rooms, with the exception of bathrooms and water-closet rooms

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (The provision serves as a definition. Definitions are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.3.1.(1) and (2)

Subject: (What is the subject of the code change or the existing code provision title?)

Ceiling Heights of Rooms or Spaces

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

In general for residential occupancies, ceiling height must be a minimum 2.1 m (~6'-11"). For secondary suites, ceiling height is permitted to be a minimum 1.95 m (6'-4¾") and clear height under beams and ducting is permitted to be a minimum 1.85 m (~6'-1").

Secondary suites are permitted to be up to 80 m² (~860 sq. ft.) in total floor area. Dwelling units with a significantly smaller floor area are being constructed. To provide adequate livable space, sleeping lofts are often constructed under cathedral ceilings above other sleeping spaces, bathrooms or kitchen spaces.

At present, the minimum 2.1 m ceiling height applies to all spaces in these very small houses. The result is that either:

- floor area must be increased to provide sleeping space on the main level, or
- building height must be increased to accommodate the loft

Either case adds unnecessary cost.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

1) Except as provided in Sentences (2) and (3), the ceiling heights and clear heights in rooms or spaces in residential occupancies shall conform to Table 9.5.3.1. (See A-9.5.3.1.)

- 2) Ceiling heights ~~in secondary suites~~ shall be not less than 1.95 m in
- a) in secondary suites, and
 - b) sleeping spaces, kitchens and bathrooms under sleeping lofts in dwelling units with not more than 40 m² total floor area.

A-9.5.3.1. Ceiling Heights of Rooms or spaces. Sleeping lofts are commonly constructed under cathedral ceilings in very small dwelling units. Where these provide space only for sleeping, they may be considered as built-in bunk beds. As such, the minimum ceiling heights do not apply.

Clean

1) Except as provided in Sentences (2) and (3), the ceiling heights and clear heights in rooms or spaces in residential occupancies shall conform to Table 9.5.3.1. (See A-9.5.3.1.)

- 2) Ceiling heights shall be not less than 1.95 m in
 - a) in *secondary suites*, and
 - b) sleeping spaces, kitchens and bathrooms under sleeping lofts in dwelling units with not more than 40 m² total *floor area*.

Justification/Explanation: (How does the requested change address the problem?)

The requested change allows for lower ceiling heights in sleeping spaces, kitchens and bathrooms located under sleeping lofts in very small dwelling units.

The requested change to Sentence (2) is consistent with the existing Intent statement:

“To limit the probability, where provision of a minimum 2.1 m ceiling height may be cost-prohibitive, that an inadequate ceiling height of rooms or spaces [i.e. less than 1.95 m high] will lead to collision with protrusions from ceilings, such as lighting fixtures, ceiling fans and low door heads, which could lead to”

The requested Appendix note provides guidance on the application of the minimum ceiling height requirements. This is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, ceiling height in sleeping lofts should not be regulated.

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

OS3 Safety in Use

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

None

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.5.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Doorway Opening Sizes

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

__Doorway Height__

In general for dwelling units, doorway height must accommodate doors that are a minimum 1,980 mm (6'-6"). For secondary suites, doorway height is permitted to be reduced to accommodate doors that are a minimum 1,890 mm (~6'-2½").

Secondary suites are permitted to be up to 80 m² (~860 sq. ft.) in total floor area. Dwelling units with a significantly smaller floor area are being constructed. To provide adequate livable space, sleeping lofts are often constructed under cathedral ceilings above other sleeping spaces, bathrooms or kitchen spaces.

At present, the minimum 1,980 mm door height applies to all spaces in these very small houses. The result is that either:

- floor area must be increased to provide sleeping space on the main level, or
- building height must be increased to accommodate the loft

Either case adds unnecessary cost.

__Doorway Width__

As with height, minimum doorway width in very small dwelling units can have significant implications for floor area and cost. The specified minimum doorway widths apply only to swing-type and folding doors. The permitted use of narrower sliding doors may not be readily apparent.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

- 1) Except as provided in Sentence (2) and Articles 9.5.5.3., 9.9.6.2. and 9.9.6.3., doorway openings within dwelling units and within houses with a secondary suite

including their common spaces shall be designed to accommodate at least the door sizes given in Table 9.5.5.1. for swing-type and folding doors. (See A-9.5.5.1.)

2) Doorway openings ~~within secondary suites~~ shall be designed to accommodate swing-type and folding doors not less than 1 890 mm high:

a) within secondary suites where the ceiling height complies with ~~Sentence Clause~~ 9.5.3.1.(2)(a), and

b) within dwelling units with not more than 40 m² total floor area where the ceiling height at the location of the door complies with Clause 9.5.3.1.(2)(b).

A-9.5.5.1. Doorway Opening Sizes. In very small dwelling units, door width can have implications for total floor area. Where sliding doors are installed, the doorway opening areas do not apply.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested change allows for lower doorway opening heights for doorways serving sleeping spaces, kitchens and bathrooms located under sleeping lofts in very small dwelling units. Expanding the application of the exception is consistent with existing Intent 1 of Sentence (2):

“To exempt doors within secondary suites from the requirement of Sentence (1) which would otherwise require that doors conform to sizes in Table 9.5.5.1., on the basis that accommodating taller doors may be cost prohibitive.”

The requested Appendix note highlights the limited application of the requirements to swing-type and folding doors consistent with the application statement developed in the transition to objective-based codes.

“A1. Minimum height and width of doorway openings for swing-type and folding doors for doorways within < dwelling units > and doors that serve exterior balconies, in < buildings > to which Part 9 applies [see es007226 for application of Part 9].

Exceptions: except as stated in:

A. Sentence 9.6.3.3.(1), which applies to doors to bathrooms served by a hallway that is not less than 860 mm wide,

B. Sentences 3.8.3.3.(1), (2) and (11), which apply to < barrier-free > design in < buildings > described in Sentence 3.8.1.1.(1) [see Sentence 9.5.2.1.(1)], and C. es008203, which applies to doors that open into a < public corridor > from a < suite >.”

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

OS3 Safety in Use

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.5.5.3.

Subject: (What is the subject of the code change or the existing code provision title?)

Doorways to Rooms with a Bathtub, Shower or Water Closet

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

The requirement for minimum widths for doorways to rooms with a bathtub, shower or water closet depends on the width of the hallways serving those rooms.

It may not be clear to code users how the requirement applies, or not, where the room is not served by a hallway. Minimum doorway width in very small dwelling units can have significant implications for floor area and cost.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Insert new second paragraph in Appendix Note A-9.5.5.3.

A-9.5.5.3. Doorways to Rooms with a Bathtub, Shower or Water Closet . The intent of Article 9.5.5.3. is to ensure a certain degree of barrier-free access to rooms that provide some or all of the facilities found in a typical residential bathroom.

The requirement assumes a typical floor plan where bathrooms and water closet rooms are served by a hallway – a space that provides only for circulation to other rooms or spaces. The minimum doorway width depends on the width of the hallway. The requirement does not apply to where the bathroom is not served by a hallway. This is most likely to be the case in very small dwelling units. The bathroom may open directly into a room or space that serves a purpose other than circulation and the overall floor area of the dwelling unit is likely to be such that none of the rooms or spaces are barrier-free.

If the minimum 860 mm hallway serves more than one room with identical facilities, only one of the rooms is required to have a door not less than 760 mm wide.

If a number of rooms have different facilities, for example, one room has a shower, lavatory and water closet, and another room has a lavatory and water closet, the room with the shower, lavatory and water closet must have the

minimum 760 mm wide door. Where multiple rooms provide the same or similar facilities, one of these rooms must comply with the requirement to have at least one bathtub or shower, one lavatory and one water closet. Where the fixtures are located in two separate rooms served by the same hallway, the requirement for the minimum doorway width would apply to both rooms.

If the minimum 860 mm hallway does not serve any room containing a bathtub, shower and water closet, additional fixtures do not need to be installed.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested change explains that the current requirement does not apply where the room is not served by a hallway. This is consistent with the Intent of the requirement:

“To limit the probability of a person using a manual wheelchair or other manual mobility assistance device being unable to gain access to a bathtub, shower or water-closet room without the assistance of another person, where hallways serving rooms with a bathtub, shower or water-closet are wide enough to accommodate a wheelchair.”

Objective(s): (If requesting an addition or revision to the Code, which of the Code’s objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will assist in proper application of the requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size

- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

9.8.1.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Application of Section 9.8. Stairs, Ramps, Handrails and Guards

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

The requirements for stairs, and handrails and guards for stairs, apply where stairs are installed. While it is common and expected practice to install stairs between floor levels, there is no requirement to install a stair and there has been no evidence that this needs to be regulated.

It may not be clear to code users when a construction that provides access between levels is a stair and when it might be considered something else; e.g., a ladder.

Requested Change/Addition: (What wording do you propose for the change?)

Marked

9.8.1.1. General

1) This Section applies to the design and construction of interior and exterior stairs, steps, ramps, handrails and guards. [\(See Note A-9.8.1.1.\)](#)

[A-9.8.1.1. Application of Requirements for Stairs, and Handrails and Guards Serving Stairs](#)
The requirements for stairs apply only where stairs are installed. Stair are not required to be installed. A construction that serves a sleeping loft that is exempted from the ceiling height requirements, and consequently treated no differently than a bunk bed, should not be considered to be a stair. While it may be appropriate to install handrails on such constructions depending on their configuration, neither handrails nor guards are required.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested Appendix Note explains that the current requirement does not require stairs to be installed and that, where a construction other than a stair is installed, the handrail and guard requirements for stairs do not apply.

The addition of an Appendix note rather than requirements for constructions other than stairs is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, ceiling height in sleeping lofts should not be regulated.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

None; can be enforced by the existing infrastructure with no additional resources.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3_Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

A-9.8.8.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Required Guards

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

The requirement for a guard applies depending on differences in elevation between adjacent surfaces. It is not apparent whether the requirement applies to sleeping lofts, which are common in tiny houses.

Requested Change/Addition: (What wording do you propose for the change?)

Insert a new first Paragraph in Appendix Note A-9.8.8.1. and revise the first sentence of the existing first paragraph.

Marked

A-9.8.8.1. Required Guards. The requirement to install a guard applies only to walking surfaces. Lofts in dwelling units designed for sleeping only and do not comply with the minimum ceiling and clear height requirements are not considered to be walking surfaces. (See Note A-9.5.3.1.)

The requirements ~~relating to guards stated~~ in Part 9 are based on the premise that, wherever there is a difference in elevation of 600 mm or more between two floors, or between a floor or other surface to which access is provided for other than maintenance purposes and the next lower surface, the risk of injury in a fall from the higher surface is sufficient to warrant the installation of some kind of barrier to reduce the chances of such a fall. A wall along the edge of the higher surface will obviously prevent such a fall, provided the wall is sufficiently strong that a person cannot fall through it. Where there is no wall, a guard must be installed. Because guards clearly provide less protection than walls, additional requirements apply to guards to ensure that a minimum level of protection is provided. These relate to the characteristics described in Notes A-9.8.8.3., A-9.8.8.5.(1) and (2), A-9.8.8.5.(3) and A-9.8.8.6.(1).

Justification/Explanation: (How does the requested change address the problem?)

The requested Appendix Note explains that the current requirement does not require a guard to be installed to protect a sleeping loft.

The addition of an Appendix note rather than requirements for constructions other than stairs is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, protection of sleeping lofts should not be regulated.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

Facilitates the design and construction of smaller and more affordable dwelling units.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will assist in proper application of the requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_ Div.A, 1.1.1.1.(2)_Application of Code
- CCR_ Div.A, 1.4.1.2. _Tiny Houses_Def's, Factory-Built
- CCR_ Div.A, 1.4.1.2. _Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs
- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material:

Tiny Houses

NBC Code Change Request

Document: 2015 National Building Code (NBC)

Code Reference of the Requested Change (Article, Sentence, etc. (eg. 9.32.3.5.))

A-9.9.10.1.

Subject: (What is the subject of the code change or the existing code provision title?)

Egress Windows or Doors for Bedrooms

Problem: (Why should the existing provision be revised, or if requesting an addition to the Code, what is missing?)

Background

The increasing popularity of so-called tiny houses is presenting a number of challenges for local authorities. A review – *Tiny Houses in Canada's Regulatory Context* – was prepared for an ad hoc provincial-territorial-municipal working group to explore the issues. The work has highlighted a number of questions on how the NBC applies or could be applied to very small dwelling units.

Code Provision

Except where the suite is sprinklered, the requirement for an egress window applies to bedrooms and combination rooms that do not have an exterior door. Where the sleeping space is a loft in a very small dwelling unit, an egress window is not required.

- A fire in a very small dwelling unit will involve the full dwelling unit faster than it will in a larger dwelling unit.
- Exiting from a loft will take longer than existing from a sleeping space on the main level of the dwelling unit

Requested Change/Addition: (What wording do you propose for the change?)

Marked

Revise Appendix note A-9.9.10.1.(1).

A-9.9.10.1. (1) Escape Windows from Bedrooms. Sentence 9.9.10.1.(1) generally requires every bedroom in an unsprinklered suite to have at least one window or door opening to the outside that is large enough and easy enough to open so that it can be used as an exit in the event that a fire prevents use of the building's normal exits. The minimum unobstructed opening specified for escape windows must be achievable using only the normal window operating procedure. The escape path must not go through nor open onto another room, floor or space.

Where a bedroom is located in an unsprinklered suite in a basement, an escape window or door must be located in the bedroom. It is not sufficient to rely on egress through other basement space to another escape window or door.

An escape window is not required in sleeping spaces that are part of a combination room that has a exterior door or an escape window. This includes sleeping spaces that are on a different level from the combination room of which they are a part. Exiting from these spaces will take longer than existing from a sleeping space on the same level as the rest of the combination space. The installation of a window or skylight in the sleeping space complying with the minimum area and dimensions for escape windows will provide additional protection in the case of a fire.

Clean

Justification/Explanation: (How does the requested change address the problem?)

The requested Appendix note identifies provides guidance on the installation of egress windows in sleeping lofts and other sleeping spaces that are on a different level from the combination room of which they are a part.

The provision of guidance rather than the addition of a requirement is consistent with the principles of Smart Regulation and the CCBFC Rules for Requirements. Unless a problem is identified, no change should be made to the application of the requirement.

Objective(s): (If requesting an addition or revision to the Code, which of the Code's objectives does the requested change address? (See Part 2 of Division A of the 2005 NBC, NFC and NPC for the list of objectives of each code.))

n/a (Appendix Notes are not attributed to objectives)

Cost/Benefit Implications: (Will the change entail any added costs? Will it provide benefits that are measurable?)

None.

Enforcement Implications: (Can the requested change/addition be enforced by the infrastructure available to enforce this Code? Will its enforcement require an increase in resources?)

Will assist in proper application of the requirements.

Other Comments: (For example, identify other Code requirements affected by the requested change.)

The following is a list of all of the Code change requests that have been prepared to address issues identified with tiny houses:

- CCR_Div.A, 1.1.1.1.(2)_Application of Code
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Factory-Built
- CCR_Div.A, 1.4.1.2._Tiny Houses_Def's, Mezzanine
- CCR_9.5.1.2._Tiny Houses_Combination Rooms
- CCR_9.5.3.1._Tiny Houses_Ceiling Heights
- CCR_9.5.5.1.(1)_Tiny Houses_Doorway Size
- CCR_9.5.5.3_Tiny Houses_Doorways Serving Bathrooms
- CCR_9.8.1.1._Tiny Houses_Stairs

- CCR_9.8.8.1._Tiny Houses_Guards
- CCR_9.9.10.1._Tiny Houses_Egress Windows
- CCR_9.10.19.3._Tiny Houses_Smoke Alarms
- CCR_9.23.13._Tiny Houses_Lateral Loads

Attached Supporting Material: