



## Clarification

### Article 3.5.5.5 National Building Code (NBC) – Detention, Treatment and Care Occupancies

#### **Issue**

It has been determined by the Office of the Fire Marshall (OFM) that some developers and professionals are experiencing challenges with the interpretation and application of Article 3.5.5.5 of the National Building Code of Canada (NBC) in their design specifications for the above noted facilities. This is resulting in design submissions contrary to the prescriptive requirements of the NBC.

#### **Mandatory requirements of the Code**

##### Sleeping Rooms vs. Individual Suites

A sleeping room or bedroom, or an individual room has not been defined in the NBC. However, for the purposes of the NBC, a bedroom is the term used for a room in a dwelling unit or house where a bed is kept for sleeping, and sleeping is the state or act of being asleep. In care or treatment occupancies, a sleeping room may be considered as a room for sleeping and may have medical instruments used to assess the clinical status of a person. A sleeping room could accommodate more than one bed and a curtain may separate each bed. Common sanitary facilities are usually provided for sleeping rooms.

*Suite* is a defined term in the code and it means “a single room, or series of rooms of complementary use, operated under a single tenancy ..... as well as individual stores and individual or complementary rooms for *business and personal services occupancies*.” An individual suite means a room used by an individual with dedicated facilities like a washroom, furniture, TV, microwave, coffee maker, etcetera. Walls within an individual suite are not required to be constructed as a fire separation having a fire-resistance rating {3.3.3.5.(13,14)}. However, individual suites are required to be separated from each other and the remainder of the building by a fire separation having a fire-resistance rating as per 3.3.4.2. of the NBC. (For sketches, refer to NBC 1995 NBC guidebook)

### Location of Fire Compartments for moving Patients in case of an Emergency

Care occupancies are comprised of people with disabilities or people with limited mobility; or, who may not be independently capable of self-evacuation. Travel time is a function of several factors, including occupant density, physical/health conditions of occupants and their age. As per the Society of Fire Protection Engineers SFPE Handbook-5th edition, an occupant density less than 0.54 persons/m<sup>2</sup> is considered as uncongested flow, and the people will move at their own pace. The maximum walking speed for corridors, aisles, and doorways can be taken as 1.19m/second for horizontal movement. However, the *Americans with Disabilities Act* (ADA) suggests a speed of 0.47 m/second for people who are disabled. In addition, a person with disabilities is likely to pause for two minutes to rest after every 30.5m of travel. Broadly speaking, this means that people with diverse abilities will need an additional 178 seconds (3 minutes) for travelling the maximum required travel distance of 45 m from one compartment to another in case of a fire emergency. The intent of attached fire compartments is to accelerate the movement of residents from one protected space to an adjoining protected (safer) area without going through other parts of the building.

**Fire compartments must be abutting each other as a person with disabilities or limited mobility takes more time to evacuate than an average person.** The code intends that the two fire compartments discussed above be abutting each other. However, if they are not abutting, the patients must be moved through a protected space or a protected corridor. The intent is to move occupants horizontally from one protected compartment to another protected fire compartment with a similar environment within a 45 m travel distance. The best explanation is available in the 1995 NBC guidebook. (Refer to page 72)

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