



**NEW YORK STATE DEPARTMENT OF STATE Division
of Code Enforcement and Administration One
Commerce Plaza - 99 Washington Ave
Albany, NY 12231**

Phone: (518) 474 4073
www.dos.ny.gov

Fax: (518) 486 4487
Email: info@dos.ny.gov



Uniform Fire Prevention and Building Code

TECHNICAL BULLETIN

**Determination of Stories Above Grade in
Elevated Dwellings in Flood Hazard Areas**

The purpose of this Technical Bulletin is to assist the Code Enforcement Official (“CEO”) in determining the number of *stories above grade* in an existing one- or two-family dwelling that has been elevated in order to comply with the flood-resistant construction requirements of the *Residential Code of New York State* (the “2010 RCNYS”).ⁱ

One- and two-family dwellings having not more than three *stories above grade* are subject to the 2010 edition of the *Residential Code of New York State* (the “2010 RCNYS”). Appendix J of the 2010 RCNYS applies to repairs, alterations, changes of occupancy, additions, and relocations of and to such buildings.ⁱⁱ When (1) any such repair, alteration, change of occupancy, addition or relocations constitutes a substantial improvementⁱⁱⁱ and (2) the building is located in a flood hazard area,^{iv} the building must comply with the flood-resistant construction requirements specified in Section R324 of the 2010 RCNYS.

In many cases, compliance with the applicable flood-resistant construction provisions of the 2010 RCNYS will require elevation of the “lowest floor” of the home.^v Elevation of the home to comply with the flood-resistant construction requirements may have additional consequences. For example, the 2010 RCNYS requires a sprinkler system in a building having three *stories above grade*, but not in a building having one or two *stories above grade*. See 2010 RCNYS Section R313.5. Depending on the circumstances of a particular case, elevating a home to comply with the flood-resistant construction provisions of the 2010 RCNYS could cause a home that formerly had two *stories above grade* to have three *stories above grade*, triggering the need to install a sprinkler system in the home.^{vi}

The distinction made in the 2010 RCNYS between homes with three *stories above grade* (which are required to have sprinklers) and homes with one or two *stories above grade* (which are not required to have sprinklers) appears to reflect a determination by the State Fire Prevention and Building Code Council (the “Code Council”) that the extra protection afforded by a sprinkler system is required when:

- occupants may need to descend two full flights of stairs (or *almost* two full flights of stairs) to escape a fire,
- first responders may need to ascend two full flights of stairs (or *almost* two full flights of stairs) to reach occupants needing assistance during a fire, and
- the home has three levels of enclosed space, each of which may contain combustible construction materials and/or combustible contents (furniture, etc.) that may increase the intensity of a fire.

Relevant Definitions

In Section R202 of the 2010 RCNYS:

- The term *story* is defined as “that portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above.”
- The term *basement* is defined as “that portion of a building that is partly or completely below grade.”
- The term *grade* is defined as “the finished ground level adjoining the building at all exterior walls.”
- The term *grade plane* is defined as “a reference plane representing the average of the finished ground level adjoining the building at all exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 feet (1829 mm) from the building between the structure and a point 6 feet (1829 mm) from the building.”
- The term *story above grade* is defined as “any story having its finished floor surface entirely above grade”

In general, a *basement* (i.e., that portion of a building that is partly or completely below grade) is not a *story above grade* (i.e., a story having its finished floor space entirely above grade). However, the definition of *story above grade* includes an exception (hereinafter referred to as the “basement exception”) which provides that a *basement* will be deemed to be a *story above grade* if any one or more of the following conditions is satisfied:

- the finished surface of the floor above the *basement* is more than 6 feet above *grade plane*,
- the finished surface of the floor above the *basement* is more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and/or
- the finished surface of the floor above the *basement* is more than 12 feet above the finished ground level at any point.

Homes with Basements

In some cases, a home that has been elevated to comply with the flood-resistant construction requirements of the Uniform Code may still have a *basement*.^{vii} This portion of this Technical Bulletin will discuss the factors that will determine if the *basement* in such a home must count as a *story above grade*.

Based on the definitions quoted at page 2 of this Technical Bulletin, if a space is a *portion of a building* and is partly or completely below grade, the space is a *basement*. If any one or more of the three conditions in the “basement exception” in the definition of *story above grade* is satisfied, the space is a *basement* and a *story above grade*.

Example 1: Home with a basement and two stories above the basement, where none of the conditions stated in the “basement exception” is satisfied.

In the case of a home with a *basement* and two *stories* above the *basement*, where none of the conditions stated in the “basement exception” in the definition of *story above grade* is satisfied, the home be deemed to have only two *stories above grade*. Such a home will have three levels of enclosed space, each of which may contain construction materials and/or contents that could increase the intensity of a fire. However, occupants of such a home will not need to descend two full flights of stairs to escape a fire, and first responders will not need to ascend two full flights of stairs to reach occupants needing assistance during a fire. Accordingly, such a home will not be required to have a sprinkler system.

Example 2: Home with a basement and two stories above the basement, where at least one of the conditions stated in the “basement exception” is satisfied.

In the case of a home with a *basement* and two *stories* above the *basement*, where at least one of the conditions stated in the “basement exception” of the definition of *story above grade* is satisfied, the basement will be deemed to be a *story above grade*, and the home will be deemed to have three *stories above grade*. As is true in the case of a home described in Example 1 above, a home described in this Example 2 will have three levels of enclosed space, each of which may contain combustible construction materials and/or combustible contents that could increase the intensity of a fire. In addition, occupants of a home described in this Example 2 may need to descend *almost* two full flights of stairs (one full flight of stairs from the second above-basement story to the first above-basement story, and a significant additional vertical distance [typically, 6 feet or more] from the first above-basement story to grade level) to escape a fire, and first responders may need to ascend *almost* two full flights of stairs to reach occupants needing assistance during a fire. Accordingly, such a home will be required to have a sprinkler system.

Homes without Basements

In some cases, a home that has been elevated to comply with the flood-resistant construction requirements of the Uniform Code will not have a *basement*; the first level of the home will be entirely above *grade*, elevated on an open foundation system comprised of piers, pilings, or columns. This portion of this Technical Bulletin will discuss the factors that will determine when the space between the bottom of the floor joists and the earth under such a home must count as a *story above grade*.

In a home that is elevated entirely above grade, the question is, essentially, this: for the purposes of determining the number of *stories above grade*, under what circumstances will the area of the open foundation system be deemed to be a *story* and, accordingly, be deemed to be one of the *stories above grade*?

Based on the definitions quoted at page 2 of this Technical Bulletin, a space must be a *portion of a building* in order to be a *story*. If (1) a space is a *portion of a building* and (2) the finished floor surface of the space is entirely above *grade*, the space is a *story above grade*.

The term *portion of a building* is not defined in the 2010 RCNYS. In cases where a term is used, but not defined, in the Uniform Code, the term should be construed as having its “ordinarily accepted

meaning such as the context implies" (2010 RCNYS Section R201.4, emphasis added). The phrase "such as the context implies" indicates that a term that is used but not expressly defined in the Uniform Code should be construed in light of the purposes sought to be achieved by the Uniform Code provision(s) in which that term is used.

The "basement exception" in the definition of *story above grade* does not apply to a level that is not a *basement* (i.e., to a level that is entirely above *grade*). However, in the opinion of the Department of State, the "basement exception" in the definition of *story above grade* provides guidance on how the phrase *portion of a building* should be construed for the purpose of determining if the area between the piers, pilings, or columns of an open foundation system should be considered to be a *story* (and a *story above grade*). This will be illustrated in the examples set forth below.

Example 3: Home with an open foundation system and two stories above the foundation system, where the finished surface of the floor above the piers, pilings, or columns of the open foundation system is not more than 6 feet above *grade plane*, not more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and not more than 12 feet above the finished ground level at any point.

Consider a home that has an open foundation system and two stories above the foundation system, where the finished surface of the floor above the piers, pilings, or columns of the open foundation system is not more than 6 feet above *grade plane*, not more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and not more than 12 feet above the finished ground level at any point. Occupants of such a home will not be required to descend two full flights of stairs (or almost two flights of stairs) to escape a fire. First responders will not be required to ascend two full flights of stairs (or almost two full flights of stairs) to reach an occupant who needs assistance during a fire. If the piers, pilings, or columns of the open foundation system are not enclosed, there will be only two levels of enclosed space with combustible materials and/or combustible contents that may contribute to the intensity of a fire. Even if the area of the open foundation system is enclosed, and even if some combustible construction materials (and, perhaps, some combustible contents) are located in the enclosed area of the foundation system, there will be less than three *full* levels of enclosed space with combustible materials and/or contents that may contribute to the intensity of a fire. Therefore, in terms of the fire safety-related concerns described at page 1 of this Technical Bulletin, a home described in this Example 3 is at least as safe, and probably more safe, than a home that has a basement and two stories above the basement, where none of the conditions stated in the "basement exception" in the definition of *story above grade* is satisfied (Example 1 above). This is true without regard to whether the pilings or columns of the foundation system are or are not enclosed. This, in turn, indicates that for the purposes of determining the number of *stories above grade* in a home with an open foundation system and no basement, the foundation system should not be considered to be a *portion of the building* (and, accordingly, should not be considered to be a *story* or a *story above grade*) if the height of the piers, pilings, or columns of the open foundation system, the topography of the lot, and the elevation of the finished surface of the first floor above the foundation system are such that the finished surface of the floor above the piers, pilings, or columns of the open foundation system is

- not more than 6 feet above *grade plane*,
- not more than 6 feet above the finished ground level for more than 50 percent of the total

building perimeter, and

- not more than 12 feet above the finished ground level at any point.

Example 4: Home with an enclosed open foundation system and two stories above the foundation system, where the finished surface of the floor above the piers, pilings, or columns of the open foundation system is more than 6 feet above *grade plane*, and/or more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and/or more than 12 feet above the finished ground level at any point.

Next, consider a home that has a open foundation system and two stories above the foundation system, where the piers, pilings, or columns of the open foundation system have been enclosed and where the finished surface of the floor above the foundation system is more than 6 feet above *grade plane*, and/or more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and/or more than 12 feet above the finished ground level at any point. Occupants of such a home may be required to descend almost two flights of stairs to escape a fire. First responders may be required to ascend almost two full flights of stairs to reach an occupant who needs assistance during a fire. In addition, because the foundation system is enclosed, and because some combustible construction materials (and, perhaps, some combustible contents) may be located in the enclosed area of the foundation system, the home will include *almost* three full levels of enclosed space with combustible materials and/or contents that may contribute to the intensity of a fire. Therefore, in terms of the fire safety-related concerns described at page 1 of this Technical Bulletin, a home described in this Example 4 is substantially similar to a home that has a basement and two stories above the basement, where at least one of the conditions stated in the “basement exception” in the definition of *story above grade* is satisfied (Example 2 above). This, in turn, indicates that for the purposes of determining the number of *stories above grade* in a home with an open foundation system and no basement, the area of the foundation system should be considered to be a *portion of the building* (and, accordingly, should be considered to be a *story above grade*) if (1) the foundation system is enclosed and (2) the height of the foundation system, the topography of the lot, and the elevation of the finished surface of the first floor above the foundation system are such that the finished surface of the floor above the foundation system is

- more than 6 feet above *grade plane*,
- more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and/or
- more than 12 feet above the finished ground level at any point.

Example 5: Home with an unenclosed open foundation system and two stories above the foundation system, where the finished surface of the floor above the piers, pilings, or columns of the open foundation system is more than 6 feet above *grade plane*, and/or more than 6 feet above the finished ground level for more than 50 percent of the total building perimeter, and/or

more than 12 feet above the finished ground level at any point.

Finally, consider a home that is similar to the home described in Example 4 above, but where the piers, pilings, or columns of the open foundation system are not enclosed. Occupants of such a home may be required to descend almost two flights of stairs to escape a fire. First responders may be required to ascend almost two full flights of stairs to reach an occupant who needs assistance during a fire. However, because the piers, pilings, or columns of the open foundation system are not enclosed, there will be only two levels of enclosed space with combustible materials and/or contents that may contribute to the intensity of a fire. On the other hand, the unenclosed area of the foundation system will be at least 6 feet high, and may be capable of being used by the homeowner at some point for parking vehicles, storing items, and other activities. Therefore, in terms of the fire safety-related concerns described at page 1 of this Technical Bulletin, a home described in this Example 5 is somewhat more dangerous than a home described in Example 3 above, but somewhat less dangerous than a home described in Example 4 above. This, in turn, indicates that the CEO must exercise judgment in determining if the unenclosed area of the open foundation system could be used for parking, storage, or other activities that could contribute to the intensity of a fire, and if the degree and nature of the potential uses warrant designating the area of the open foundation system as a *portion of the building* (and, accordingly, as a *story* and a *story above grade*). The Department of State recommends that in any case where the CEO determines that the area of the open foundation system under a home of the type described in this Example 5 is not a *portion of the building* (and, accordingly, is not *story* and a *story above grade*), that the Certificate of Occupancy for a home include condition forbidding use of the area between the piers, pilings, or columns of the open foundation system for parking, storage, or any other use.

ENDNOTES

ⁱ The term “stories above grade” is defined and used in the 2010 RCNYS and in other the publications that make up the State Uniform Fire Prevention and Building Code (the “Uniform Code”). The number of “stories above grade” in a particular home, as determined pursuant to the guidance provided in this Technical Bulletin, should be used solely for the purposes of the Uniform Code, i.e., solely for the purpose of determining (1) whether the home is subject to the RCNYS or the *Building Code of New York State* (the “BCNYS”) and (2) whether any particular provision of the RCNYS or BCNYS applies to that home. To the extent that any law other than the Uniform Code (e.g., any local zoning ordinance) requires determination of the number of stories (or stories above grade) of a building, such determination should be made in accordance with the provisions of such other law, and not in accordance with the provisions of the Uniform Code and/or in accordance with the guidance provided in this Technical Bulletin. In particular, but not by way of limitation, to the extent that the number of stories (or stories above grade) of a home is used by a local assessor in determining the assessed value of the home, the assessor should determine the number of stories (or stories above grade) of that home in accordance with the applicable provisions of the Real Property Tax Law and the rules and regulations promulgated pursuant to the Real Property Tax Law, and not in accordance with the provisions of the Uniform Code and/or in accordance with the guidance provided in this Technical Bulletin.

ⁱⁱ The term “repair” is defined as “the restoration to good or sound condition of any part of an existing building for the purpose of its maintenance.” The term “addition” is defined as “an extension or increase in floor area, number of stories, or height of a building or structure.” The term “alteration” is defined as “any construction or renovation to an existing structure other than repair or addition.” (Alterations are classified as Level 1 and Level 2.) The term “relocation” is defined as relocating a building or structure from its existing foundation to a new foundation.

iii The term “substantial improvement” is defined as “any repair, alteration, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either: 1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the code official and that is the minimum necessary to assure safe living conditions, or 2. Any alteration of a historic structure, provided that the alteration will not preclude the structure’s continued designation as a historic structure.”

iv The term “flood hazard area” is defined as the greater of (1) the area within a flood plain subject to a 1-percent or greater chance of flooding in any year or (2) the area designated as a flood hazard area on a community’s flood hazard map, or otherwise legally designated.

v For the purposes of the flood-resistant construction requirements of the 2010 RCNYS, the “lowest floor” of a building is “the floor of the lowest enclosed area, including basement, but excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.” See Section R324.1.4 of the 2010 RCNYS. NOTE: The flood-resistant construction requirements of the Uniform Code are based on rules and regulations applicable to the National Flood Insurance Program (the “NFIP”). In some cases, terms used in the flood-resistant construction provisions of the Uniform Code are based on terms used in the NFIP rules and regulations. As a result, the meaning of a term used in the flood-resistant construction provisions of the Uniform Code may differ from the meaning that term (or a very similar term) has in other parts of the Uniform Code. For example, the “lowest level” of a building is not necessarily a “basement” or a “crawl space.”

vi In other situations, elevating a home to comply with the flood-resistant construction requirements could cause a home that formerly had three stories above grade to have four stories above grade, triggering the need to comply with the 2010 edition of the *Building Code of New York State* (the “2010 BCNYS”) rather than the 2010 RCNYS.

vii In many cases, the flood-resistant construction provisions of the 2010 RCNYS require the “lowest level” of a home to be elevated to two feet above the “design flood elevation.” In general, the “design flood elevation” is based on information contained in the applicable Flood Insurance Rate Map (“FIRM”). The “design flood elevation” at a given point may be below the grade level at that point. Therefore, a space that is elevated 2 feet above the “design flood elevation” may be below grade or partly below grade (i.e., may be a *basement*). In addition, for the purposes of the flood-resistant construction provisions of the 2010 RCNYS, an “unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage” is not considered to be the “lowest level” of a building, and such an unfinished flood-resistant enclosure may be located below the “design flood elevation.” In many cases, such an unfinished flood-resistant enclosure will be a *basement* for the purposes of the 2010 RCNYS.