

KEY TERMS GLOSSARY

Retrofitting buildings in the floodplain requires the understanding of a number of key terms and concepts used throughout the relevant regulations, codes and guidelines.

Base Flood Elevation (BFE)

The computed elevation in feet to which floodwater is anticipated to rise during the 1% annual chance storm shown on the Flood Insurance Rate Maps (FIRMs) issued by the Federal Emergency Management Agency (FEMA). A building's flood insurance premium is determined by the relationship between the BFE and the level of the lowest floor of a structure.

Basement

As defined by Appendix G of the New York City Building Code, the portion of a building having its floor below the lowest adjacent grade on all sides. The New York City Zoning Resolution defines basement as a floor of a building having less than one-half its clear height below curb level or the base plane.

Cellar

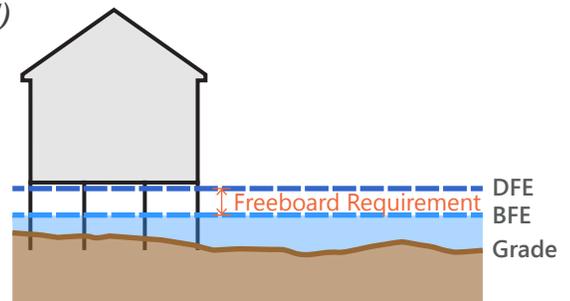
As defined by the New York City Zoning Resolution, the portion of a building that is partly or wholly underground, and having one-half or more of its clear height below curb level or the base plane.

1% Annual Chance Floodplain (100-Year Floodplain)

The area that has a 1% chance of flooding in any given year. It is indicated on FEMA's Flood Insurance Rate Maps (FIRMs) and is also referred to as the "Special Flood Hazard Areas" (see below).

Design Flood Elevation (DFE)

As defined by the New York City Building Code, the minimum elevation to which a structure must be elevated or floodproofed. It is the sum of the BFE and a specified amount of freeboard based on the building's structural category.



Fill

Materials such as soil, gravel or crushed stone placed in an area to increase ground elevations or change soil properties.

Flood Damage Resistant Materials

Any construction material, including finishes, capable of withstanding direct and prolonged contact with flood waters without sustaining any damage that requires more than cosmetic repair.

Flood Insurance Rate Maps (FIRMs)

The official flood map, on which FEMA has delineated the 1% Annual Chance Floodplain or Special Flood Hazard Area (SFHA), 0.2% annual floodplain (Shaded X zone), Base Flood Elevations (BFEs) and floodways.

Preliminary Flood Insurance Rate Maps (PFIRMs)

The Preliminary FIRMs are the current best available flood hazard data. FEMA is in the process of updating the Flood Insurance Rate Maps (FIRMs) for New York City and issued Preliminary FIRMs in December 2013 as part of this process. The New York City Building Code requires new and substantially improved buildings to use the Preliminary FIRMs (unless the Effective FIRMs are more restrictive) until the maps become effective following the public comment period. The Preliminary FIRMs, however, are not used to guide the requirements of the National Flood Insurance Program. Following a comment period and opportunity for appeals, FEMA is expected to issue final Effective FIRMs, which will trigger the expansion of flood insurance purchase requirements.

Floodproofing, Dry

A floodproofing technique that results in the building resisting penetration of flood water up to the DFE, with walls substantially impermeable to the passage of water and structural components having the capacity to resist specified loads. Under the NFIP standards, only non-residential buildings can use dry floodproofing.

Floodproofing, Wet

A floodproofing technique designed to permit parts of the structure below the DFE to intentionally flood, by equalizing hydrostatic pressures and by relying on the use of flood damage-resistant materials. With this technique, parts of the building below the DFE are only to be used for parking, storage, building access or crawl space.

Freeboard

An additional amount of height above the BFE to provide a factor of safety to address the modeling and mapping uncertainties associated with FIRMs, as well as a degree of anticipated future sea level rise. It is a risk reduction requirement found in Appendix G of the New York City Building Code and recognized by the NFIP as an insurance premium reduction factor. In New York City's A Zone, one foot of freeboard is required for commercial and multi-family buildings, and two feet for single- and two-family buildings.

STRUCTURAL OCCUPANCY CATEGORY II	DESIGN FLOOD ELEVATION
1-2 Family Dwellings	BFE + 2 ft
Multi-Family Dwellings	BFE + 1 ft
Commercial	BFE + 1 ft

*per New York City Building Code Appendix G

Lowest Adjacent Grade

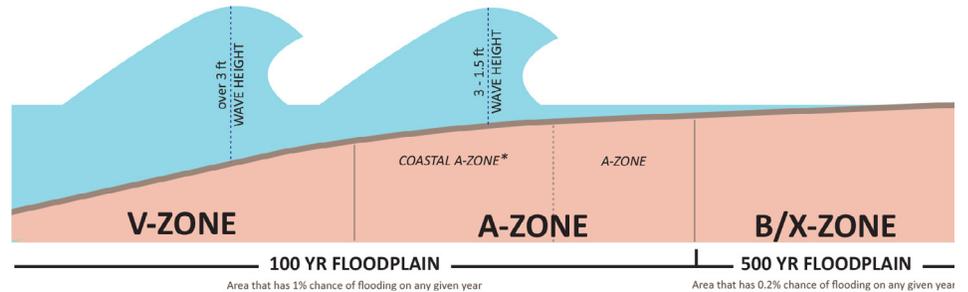
Elevation of the lowest natural or re-graded ground surface, or structural fill, abutting the walls of a building.

Lowest Occupiable Floor

The floor of the lowest enclosed area, including basements. Does not include any wet floodproofed spaces used solely for parking, access, storage or crawl space.

National Flood Insurance Program (NFIP)

Federal program that makes flood insurance available to municipalities that enact and enforce floodplain management regulations that meet or exceed the criteria established by FEMA. Under this program, properties within the floodplain with a federally backed or regulated mortgage, or those that receive federal housing subsidies, are required by law to buy flood insurance. Communities participating in the NFIP must incorporate flood-resistant construction standards into building codes.



* New flood zone designation within the existing A-Zone where wave action is experienced. COASTAL-A ZONES are not mapped in current FIRMs but will be introduced in future revisions by FEMA

Special Flood Hazard Areas (SFHA)

Area of the floodplain that has a 1% chance, or greater, risk of flooding in any given year. Also referred to as the 100-year floodplain or the 1% annual chance floodplain. FEMA uses the North American Vertical Datum 1988 (NAVD 88) for all the elevations. The SFHA is separated into zones depending on the level of hazard:

V Zone

The area of the SFHA subject to high-velocity wave action that can exceed 3 feet in height. More restrictive NYC Building Code standards apply.

Coastal A Zone

A sub-area of the A Zone that is subject to moderate wave action between 1.5 and 3 feet in height. Building regulations are more restrictive than in A Zones and can be similar to those standards that apply for V Zones.

A Zone

The area of the SFHA that is subject to waves under 1.5 feet and still-water inundation by the base flood with specific NYC Building Code standards.

Substantial Damage

Damage sustained by a building whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50% of the market value before the damage occurred. When a building is substantially damaged or substantially improved (see below), it is required to comply with Appendix G of the Building Code.

Substantial Improvement

Any repair, reconstruction, rehabilitation, addition or improvement of a building with cost equaling or exceeding 50% of the current market value of the building. When a building is substantially improved, it is required to comply with the flood-resistant construction requirements of Appendix G of the New York City Building Code.