

Selecting Floodproofing Techniques – Regulatory Considerations

Regulated Floodplain

If a building is located within the area shown on the Flood Insurance Rate Map as 100-year floodplain, a floodproofing project is considered **floodplain development** and requires a Floodplain Development Permit from the municipality. The requirements depend on the magnitude of the project and whether it is in a **regulatory floodway**.

“Substantial Improvement” – Any repair or improvement of an existing floodplain building, the cost of which equals or exceeds 50% of the market value of the structure (excluding the land) before the improvement. If the structure has sustained “substantial damage,” any repairs are considered substantial improvement regardless of the actual repair work performed. (There are exceptions for improvements required to assure safe living conditions and for historic structures.)

“Substantial Damage” – Damage to a building, regardless of the cause, for which the cost of restoring the structure to its before-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.

Substantial Improvement Rule

If a building is substantially improved then the entire structure must be brought into compliance with current floodplain development standards. This rule applies to any building in the regulated floodplain that is not already in compliance with current standards. This may occur because the building predates enactment of floodplain development standards or if the flood hazard map or development requirements were revised after construction of the building.

Current Floodplain Development Standards

In New York, current standards for floodplain development require that buildings be protected to a level two or more feet above the Base Flood Elevation (BFE; calculated 100-year flood level) or three feet above the highest adjacent grade if no BFE is available. For residential buildings, this protection must be provided by elevating the lowest floor to or above the flood protection level and utilizing flood-resistant design below that level. Non-residential buildings can be protected either by elevation or by dry floodproofing to the flood protection level. (Additional information about floodplain development requirements is provided in floodplain fact sheets, available at <http://www.stcplanning.org/index.asp?pageId=108>.)



Floodproofing Options for Substantially Improved Buildings

A floodproofing project may constitute a substantial improvement or may be necessitated because a building is being substantially improved. The requirement to bring a structure into compliance with current floodplain development standards limits the floodproofing techniques that can be utilized:

- Elevation: The technique that is most commonly used to bring a non-compliant structure up to floodplain development standards is to elevate it so that the first floor is at or above the flood protection level. If the main floor is appropriately elevated, but the structure has a basement or non-compliant enclosed area (such as a crawl space without flood vents), compliance may be achieved by filling the basement and wet floodproofing any enclosed area that remains below the main floor (so that the basement or crawl space is no longer considered the “lowest floor”).
- Relocation: Relocating a building to a site outside of the floodplain is an effective, though generally expensive, way to comply with floodplain development standards.
- Dry floodproofing: Floodplain development standards allow dry floodproofing of non-residential structures, but cannot be used to bring residential structures into compliance. Use of this technique for residential structures is limited to buildings that do not trigger the substantial improvement rule or to situations in which the owner desires additional protection above the required flood protection level.
- Wet floodproofing: The use of wet floodproofing techniques is required for those portions of the building located below the flood protection level. However, if finished living space is not elevated to the required level (or dry floodproofed for non-residential buildings), then wet floodproofing cannot be used to bring the structure into compliance with current standards. In some cases, the main floor may be properly elevated, but the building has inadequate flood vents, non-elevated utilities, or other violations. In these cases, wet floodproofing measures can be used to bring the structure up to floodplain development standards, provided that any remaining enclosed areas below the flood protection level are used solely for parking, storage, or building access.
- Levees and floodwalls: Levees and floodwalls may not be used to bring a substantially damaged or substantially improved building into compliance with floodplain management standards.

*The **floodway** is the channel of a river or stream and the overbank areas that must remain open to carry the deeper, faster moving water during a flood.*

Regulatory Floodway

If any portion of a project constitutes an encroachment in the floodway (delineated on the Flood Insurance Rate Map or Flood Boundary and Floodway Map), the project can only be permitted if ***a licensed professional engineer demonstrates that the proposed encroachment shall not result in any rise in the 100-year flood elevation.*** This generally precludes the use of levees or floodwalls in the floodway.

Existing Building Code

A floodproofing project, like any other repairs to an existing building, must utilize materials and practices that comply with standards in the NYS building codes and must not make the building less conforming to those codes. **In some cases, the project might require upgrades to bring the building into compliance with current building codes** (for plumbing, electrical, energy systems, or other existing violations). This depends on the scope of the improvements and is most likely to be necessary for elevation and relocation projects.