

For the most part, the provisions in the various codes were similar, if not identical, indicating that there was a common understanding of the essentials of building safety and that the codes were at similar stages of evolution:

- There were only modest differences among the codes in the provisions for gravity loads.
- All three of the contemporaneous building codes had provisions for wind loads that were less stringent than those used for the tower design.
- None of the codes had provisions for design against progressive collapse.
- For alterations or additions to a building, there were criteria to determine whether the whole building or only the alterations needed to comply with the current code requirements. The “trigger” was either the fraction of the building cost involved in the renovation or the fraction of the building dimensions. The 1968 NYC Building Code was slightly less conservative than the Chicago Code and the BOCA Code. The NYS Code required that any addition or alteration conform to the contemporary code.
- The 1968 NYC Building Code required inspection of sprayed fire protection, but did not specify if testing was required.
- Only the NYC Building Code contained provisions for bracing (lateral support to prevent buckling of columns and walls) and stresses associated with transverse deflections of structural members.

NIST examined the 2001 edition of the NYC Building Code to determine the extent to which Local Laws had modified the code provisions between the times of construction and collapse of the towers. The 2001 edition of the NYC Building Code was essentially the same as the 1968 edition, as amended by the intervening Local Laws.

5.2.3 Tenant Alteration Process

With hundreds of tenants, The Port Authority realized that many would want extensive modifications to their space, both before they moved in and during the course of their occupancy. In anticipation, The Port Authority:

- Set up a special office to review and approve plans, issue variances, and conduct inspections.
- Developed a formal tenant alteration process for any modifications to leased spaces in WTC 1 and WTC 2 to maintain structural integrity and fire safety. The *Tenant Construction Review Manual*, first issued in 1971, contained the technical criteria, standards, and review criteria for use in planning alterations (architectural, structural, mechanical, electrical, and fire protection). Alteration designs were to be completed by registered design professionals, and as-built drawings were to be submitted to The Port Authority. The 1968 NYC Building Code was referenced. The review manual was updated four times and supplemented, in 1998, by the *Architectural and Structural Design Guidelines, Specifications, and Standard Details*.