

# Seismic Design Provisions in U.S. Codes and Standards: A Look Back and Ahead

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*The seismic code development process that was in place in the United States for many decades is undergoing dramatic changes. These changes and their possible impact on seismic design provisions for precast concrete structures in the U.S. model codes are discussed.*

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**A**lmost every building or structure in the United States must be designed and constructed in accordance with the building code of the local jurisdiction (city, county or state), which is a legal document. A local jurisdiction will typically make sure that the design documents are in compliance with its building code before issuing a construction permit (see Fig. 1a).

A local jurisdiction will also typically make sure that all inspection requirements of its building code have been complied with in the construction of a building before issuing a certificate of occupancy (see Fig. 1b). The only exceptions to these regulations might be military installations and structures located in remote parts of the country.

## MODEL BUILDING CODES

The legal building codes of most jurisdictions within the United States have in the recent past been based on one of three model building codes:

- The BOCA National Building Code (BOCA/NBC), published by the Building Officials and Code Administrators International, Country Club Hills, Illinois.<sup>1</sup>
- The Standard Building Code (SBC), published by the Southern Building Code Congress International, Birmingham, Alabama.<sup>2</sup>
- The Uniform Building Code (UBC), published by the International Conference of Building Officials, Whittier, California.<sup>3</sup>

The BOCA/NBC is typically adopted in the northeastern quarter,

the SBC in the southeastern quarter, and the UBC in the western half of the United States. This division is obviously imprecise, and is meant solely to convey an overall picture; there are exceptions to the normal patterns.

In the mid-1990s, there was a concerted attempt at developing a single unifying model building code for the entire country, to replace the three regional model building codes mentioned above. This resulted in the International Building Code (IBC),<sup>4</sup> developed by the three model code groups under the auspices of the International Code Council which they had together formed. Unfortunately, before the first edition of the IBC could even come out in April 2000, the unification process came unraveled. Recently, the National Fire Protection