

March 11, 2011 Earthquake and Seismic Construction

The recent magnitude 9.0 earthquake and the related tsunami in Japan produced the costliest natural disaster in history.

There have been 16 earthquakes magnitude 8.5 or greater since records started in 1900, and all but 4 occurred in 2 clusters — 1950-1965 and 2004-present. Although it cannot be statistically determined whether these clusters represent a repeating pattern, the 4 decade interval between clusters produces attitudes that add complexity to seismic codes, seismic design and construction and emergency preparedness.

International Building Codes are revised at intervals as short as 3 years. Since these revisions are based on the consensus of lessons learned and knowledge gained since the last revision, decades old information that is possibly critical but not conclusively verified cannot be considered. Seismic codes in some geographical areas then may be insufficient to address rarer seismic events.

This deficiency can be exaggerated when designers and builders give insufficient attention and response to an event that seems so remote—one that has not occurred even once within their lifetime. The combination of weak codes and limited attention by both designers and installing contractors may be more prevalent on smaller low-rise buildings. Insufficient emergency preparedness measures may exist across all building types and sizes. *Science News* May 7, 2011 P5-6