## Editorial Are Special Inspections a Code Provision or Aren't They?

By Andrew Rauch, CASE Chair

magine for a moment that the building official for one of your projects decided that they were not going to enforce the code provisions for fire protection or the provisions for exiting requirements. How do you think the project architect would react? Or, if the building official decided that a certain structural design provision could be ignored. Would you protest that the safety and welfare of the public was going to be jeopardized? How then is it that this is allowed to happen for special inspection provisions?

First, a little background may be helpful. In the 1970s and early 1980s, there were a number of notable structural failures such as Kemper Arena, the Hartford Coliseum, a building in Cocoa Beach Florida, and the Kansas City Hyatt. As a result, the House of Representatives did what every good government body would do; they held hearings into the issue. The report issued as a result of those hearings, House Report 98-621 issued in 1984, identified the absence of the SER on the project site as a significant contributing factor in avoiding future failures. It recommended that provision be made to have the structural engineer of record be present at the project site during the construction of principal structural components. Specifically, the report stated "Professional organizations...should make every effort to ensure that provisions are written into building codes and adopted in the public forum which make the on-site presence of the structural engineer mandatory during the construction of structural components on public facilities."

Although special inspection provisions first appeared in the UBC in 1961, these provisions were not well defined and were largely ignored. After the House Report special inspection provisions were further developed in the national building codes. In 1988, the Uniform Building Code (UBC) was modified to make it the responsibility of project professionals to include special inspection requirements in the contract documents, and added the provision that special inspections could also be provided by the engineer of record as the owner's agent. With these requirements, design professionals were required to specify that something be done, but were given no tools with which they could assist with enforcement and



implementation of those provisions. To assist, several state structural engineering associations developed guidelines to help professionals and building officials specify and enforce those provisions.

Fast forward to today. How are things different? At the recent CASE winter meeting, we took a simple poll of those present and asked questions about the special inspection process. The questions addressed were:

• In what states or regions do you practice?

... has this model achieved the original goal of having the structural engineer at the site more often? ... does this model improve quality and better serve the public good?

- Describe the enforcement of special inspections in your area of practice.
- Who typically performs these inspections?

• How would you characterize the quality of these inspections? Those in attendance well represented engineering practice around the country, with slightly stronger representation from the east and west coasts than from the mid-west and south. Over half responded with spotty enforcement, primarily better in metro areas than rural areas. 15% of the respondents indicated that the provisions were not enforced at all. Often, the structural engineer is construed as being an impediment to the project for either requiring the inspections or insisting that they be done properly.

In general, special inspections are being performed by testing agencies who perform the work 85% of the time. The remainder is being provided by certified inspectors or licensed engineers. Over half of the respondents felt that the quality of these inspections were generally poor, with incorrect installation of critical items frequently being missed. Only 20% felt the quality was good, with the remainder responding that quality was average or variable. Generally, the west coast had more consistent enforcement and better quality. There, the work was done by certified inspectors rather than testing agencies.

While this is likely not a scientific sampling, it probably is a reasonable representation of the state of affairs. This writer is personally familiar with instances where the special inspector has made errors in their work, including significant ones such as allowing retaining wall reinforcing to be placed over 5 inches out of position and directing the contractor to move the lower layer of top beam reinforcing to the beam mid-depth. If this truly is the current state of affairs, has this model achieved the original goal of having the structural engineer at the site more often? More importantly, does this model improve quality and better serve the public good? I understand the business and risk management implications of engineering firms trying to provide special inspection services. But, as an engineering profession, is this current state the way we want things to be? If we do not think the status quo is acceptable,

what are we as individual firms and as a profession going to do about it? Changing current practices will take a consistent message and significant education of building officials, our clients, and building owners.



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