

Evolving seismic design standards

Map of expanded earthquake hazard areas may present new opportunities; risks for design firms.

As a resident of the East Coast, my awareness of earthquake threats is generally limited. It was somewhat elevated by the Napa Valley quake in August. However, if I was an architect or an engineer working on buildings, bridges, roadways, etc. *not* in a “high risk” geographic area, would my view be any different? Should it be?

Recent events may well warrant affirmative responses to these questions, regardless of where your firm may be based or your projects located. Such affirmative answers may present new business opportunities for many firms, but could also pose some new or evolving risks that can be minimized with informed risk management practices.

In July, the U.S. Geological Survey (or USGS) announced updated U.S. National Seismic Hazard Maps reflecting current scientific opinion of where future earthquakes will occur – including frequency and severity. The updated maps greatly expand several regions viewed as earthquake prone and are used by architects and engineers in determining earthquake-resistant design parameters.

The maps are also used in evaluating the need to revise local building codes. Affected geographic areas include the New England states, which the USGS advises is more earthquake prone than what was set out in the 2008 maps. On the other hand, Florida, western Pennsylvania, and southeastern Texas are among areas now believed less prone to earthquakes.

In a related report, the USGS advises that 42 states have a reasonable chance of experiencing damaging ground movement from an earthquake within the next 50 years. That timeframe is well within the expected lifecycle of today’s building and infrastructure. These findings have the potential to impact design firms – both on future work and work already completed.

For a building designed and built under the 2008 maps (or earlier versions), do design firms have reason for concern now that the 2014 maps have been issued? There may be cause for concern, as well as some legitimate new business opportunities. Should an earthquake hit in an area (now viewed as having increased risk) where you completed work and that building fail, you could be subject to malpractice claims.

The claim would likely allege that when you originally designed the building you should have known of the true



Rob
Hughes

**GUEST
SPEAKER**

risks present, although that argument might be hard to prove, given the earlier versions of the maps.

An alternative argument could allege that you knew or had reason to know as of July 2014 that your design is inadequate (in light of current knowledge) and that you had an affirmative obligation to bring this potential deficient design to the owner’s attention. Such an obligation is not clear, but could be based on contract language in your original agreement and/or your underlying obligation to protect the public.

That very scenario may play out in northeastern Pennsylvania in the aftermath of the August 2011 Virginia-based earthquake. That quake apparently caused a portion of a local landfill to fail, closing local roads for an extended period, drawing

See ROB HUGHES, page 8

The updated maps greatly expand several regions viewed as earthquake prone and are used by architects and engineers in determining earthquake-resistant design parameters.

ROB HUGHES, from page 7

a review by that state's Department of Environmental Protection and the obvious need to repair the affected area (about 12 acres). In a recent report submitted to the state DEP, site owners point to alleged design errors as allowing for the failure, one that would not have occurred had proper care been given to the impact of potential earthquake activities in the area.

You could also view the release by USGS as a reason to reconnect with past clients or propose to potential clients services for earthquake-resistant design review of in-place structures. But be careful – if you “retouch” past work, you could reset the applicable statute of repose, opening up the past design (as well as your current review) to allegations they were performed negligently in the event of a future earthquake and resultant damage.

For work in progress and future work, the question is: What effect does the release of the updated map have on your design? Worded another way, does the release of the maps alter the applicable standard of care? The answer is “yes.” That's true even absent any change yet in local building codes as the maps may represent the current state of scientific knowledge, which a reasonably prudent architect or engineer would consider in its design. Keep in mind that a building code is legally viewed as the minimum standard to which you must design; it does not support the principle that meeting the code inherently means you have met the standard of care (which could impose more onerous obligations on you as a professional).

PRACTICE POINTS. How best to manage risk associated with this evolving area of scientific study? As you likely heard before, it starts with clear contractual language with

LEO MACLEOD, from page 6

It takes repetition to get people to first notice and finally act. Think of your own situation. Even those things you have identified you need or want have to fight to take precedence over all the other demands on your time, all the other distractions. “Oh yeah, I need to get that.” And those are the things that you have identified you really want: a new driver, lower medical insurance, a phone, the pizza place down the street. In short, if you are going to advertise, commit to six months at a minimum. You are fighting inertia and the distractions of the thousands of messages we receive every day.

When you're designing an ad, spend the extra dollars for professional creative execution. If you're running your ad enough times, your costs to create and produce the ad will be your lowest cost. Don't skimp by using a low resolution photograph your project manager took, for instance. Copywriters and graphic designers are in healthy supply at deflated costs these days. Look globally beyond one ad to how you can create a campaign that may include a printed piece, PowerPoint or web page. You can amortize the costs throughout your campaign by having a consistent message and design. Oftentimes, publications offer free design assistance. In any case, stay focused on one message and

How best to manage risk associated with this evolving area of scientific study? As you likely heard before, it starts with clear contractual language with particular focus on the standard of care and applicable laws.

particular focus on the standard of care and applicable laws. In particular, note the following:

- Be sure that the standard of care refers not only to “reasonable” level of skill and care but to “the same geographic region” and “at the time the services are rendered.”
- Agreeing to comply with all applicable laws, codes, regulations, etc. presents concerns beyond this article, but be sure that whatever language you do agree to limits your obligation to those laws, codes, and regulations in effect at the time the services are provided.
- Do not agree to language that imposes an open-ended obligation to redesign or otherwise act in response to any changes to applicable laws regardless of when those changes are effectuated. Use language that limits your obligations to those “in effect at the time of execution of this Agreement...”
- On the relationship side, discuss with your clients, past and present, the potential impact of the newly released maps on in-place or in-progress projects. And document their response.

Indeed, while the 2014 USGS seismic hazard maps may result in opportunities for design firms, they also call for a heightened focus on risk management. ▲▲

ROB HUGHES is a senior vice president and partner at Ames & Gough. Contact him at rhughes@amesgough.com.

The advantage of publicity is that it has more credibility than talking about yourself. The disadvantage is that you can't control either what's said or how often it's said. Any good marketing program incorporates both public relations and advertising, whether it's a print ad, banner ad, direct mail, e-blast or a sales presentation.

avoid the temptation to say too many things. Saying too much is another great way to waste money.

For the AEC industry, there's not a direct connection between advertising and sales. But if you understand why you are doing an ad, know who you want to reach, know how to reach them, give them a reason to pay attention, and have the discipline to run it more than once, you'll be more effective with your marketing dollars. ▲▲

LEO MACLEOD is a leadership and communication coach. He can be reached at leo@leomacleod.com.