

An aerial photograph of a city, likely San Francisco, showing a dense urban landscape with a large, rectangular building featuring a green roof in the foreground. The building is surrounded by lush greenery and a road with traffic. The city skyline is visible in the background.

# Geo-Strata

January/February 2014

## Sustainable Design in Geotechnics

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Strategies for Building and  
Sustaining a Successful Engineering  
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## Preserve and Protect



failure, it seems, while many of our navigable waterways are navigable in name only. Our roads are crumbling, and crossing a bridge is something motorists do only at their own peril. Overall, says ASCE, the nation's infrastructure rates a D+, an improvement from four years ago, but a trend not likely to be maintained. The economic repercussions are truly mind-boggling and grow worse daily.

For many years, I have led the Fundamentals of Professional Practice course, a six-month "professionalism boot camp" for geoprofessional firms' "rising stars." During the 2½-day seminar that concludes the course, I suggest to the

**P**reserve and protect public health, safety, and welfare. That's the engineer's credo. Of course, not all geoprofessionals are engineers, and many of them – such as environmental scientists – are not licensed and have no reason to be. Nonetheless, given the significance of what geoprofessionals do, all have at least a moral obligation to preserve and protect public health, safety, and welfare.

Aided by federal and state legislation and a committed bureaucracy, the environmental geoprofessionals are doing well in that respect. So, too, are the geoprofessionals involved with new-building construction. But what about the geoprofessionals whom the public relies on to care for its essential infrastructure needs?

The infrastructure itself can answer that, as through the major water-line breaks that occur almost daily, often in systems designed during the Roosevelt administration: Teddy's. But that doesn't come as news to the geoprofessionals who live in the affected communities. They know their city's or town's water-distribution system is old and inadequately inspected and maintained. They also know that, if the lines don't break, almost certainly they leak, wasting shameful amounts of water and energy.

Our sewer systems are no better; even the newer ones lack the capacity to manage the ever-greater quantities of run-off associated with the superstorms that are becoming our "new normal." Our levees, reservoirs, and earth dams are inspected and repaired only when they advance to near or outright

participants that they are obligated to preserve and protect their communities' health, safety, and welfare by putting infrastructure issues on the front burner when local leaders' heads seem buried in the sand. How? Join together. Get a parade permit. Make signs. March. That's what my generation did and, frankly, it worked out pretty well. We made a big difference in the battle for civil rights, environmental stewardship, and ending a war we had no legitimate reason to start.

One of the most recent FOPP "grads" commented that my penchant for confrontation was "unseemly" for geoprofessionals; that comparing the need for better infrastructure to a battle for social equality was "inappropriate." I disagree, especially so because infrastructure has profound social impacts that affect us all.

I don't get it, frankly: How can people who are ethically obliged to preserve and protect public health, safety, and welfare sit silently by and watch their infrastructure rot? More so than most others, geoprofessionals:

- realize that a well-functioning infrastructure is essential to the public's health, safety, and welfare;
- have intimate knowledge of the systems that comprise our infrastructure;
- understand the importance of dedicated infrastructure maintenance, repair, renovation, and replacement; and
- recognize that elected officials' "if-it-ain't-broke-don't-fix-it" attitude is destroying what three prior generations created,

and the only way to change that attitude is by educating their neighbors, a process that begins by letting neighbors know there's something important they need to do something about.

Someone has to speak up. If not you, who? We have come to "that bridge." We inherited an America made strong by its infrastructure. What will our children and grandchildren inherit? An infrastructure whose decay will be almost impossible to reverse because of our national debt? Very likely, unless we start making a difference now. If that means gaining the spotlight through geoprofessional protest demonstrations, so be it. In my judgment, infrastructure neglect is something worth protesting about. True: Some folks will accuse you of being motivated by self-interest and will complain about taxes already

being too high, but you can easily reinforce your convictions by illustrating what infrastructure neglect already has done and what it will continue to do if left unchecked. And, no one would have more public credibility than you, were you and your geoprofessional brethren to note, "We are ethically obliged to preserve and protect public health, safety, and welfare. To maintain our ethics, we must warn our community about the consequences of infrastructure neglect. We have to be noticed for our warning to be heard." And as a consequence, maybe the public will begin to realize how important geoprofessionals really are, not just to the marketplace, but to their communities and their communities' future.

SPEAK UP! Please.

AUTHOR

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