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civil + structural ENGINEER

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NEW LA SEISMIC ORDINANCE TO SAVE LIVES AND A CITY

AS A STRUCTURAL ENGINEER working with governments and communities around the world as they face earthquake disasters, I've seen tragedies after a catastrophic earthquake when the city was not ready. From the loss of historic buildings to modern multi-story hotels pancaked onto the soft first story and non-ductile concrete schools that collapsed like decks of cards on innocent children, these are horrible things to witness when you know — as engineers do — that better engineering and construction would have saved lives and a city. I say this to make a point. Los Angeles, which recently enacted one of the most progressive seismic ordinances, did so to avoid a fate similar to the disaster scenes I've witnessed in places such as Sichuan, China (2008), Port-au-Prince, Haiti (2010), Christchurch, New Zealand (2011), Tohoku, Japan (2011) and Nepal (2015). These recent earthquakes combined killed well over half a million people and destroyed the livelihoods of countless people.

The new LA City Seismic Ordinance requires owners of about 15,000 non-ductile concrete and soft-story buildings to strengthen their structures — buildings we've long known would perform very poorly in an earthquake. Los Angeles citizens understand that the seismic faults that snake under their city are capable of releasing a big one. Other cities that have passed similar laws include San Francisco, Berkeley, and other Bay Area cities. Under the new law in Los Angeles, owners will have seven years to fix soft-story buildings and 25 years to repair non-ductile concrete buildings. But one of the most important aspects of this ordinance is to utilize tax incentives to finance the retrofit. Seismic upgrades must be commercially feasible to be successful. Attempts to only use code and the law to require people to strengthen buildings often end up as failures.

While California cities lead the way to address the most dangerous buildings, cities in high seismic regions, including some eastern U.S. cities, should be equally concerned about their building stock and the people who live and work in them. We are in a very active seismic era, currently. Our cities are overdue for a next big one. As Los Angeles Mayor Eric Garcetti said: "I'm not interested in making history or having the toughest laws. I'm interested in preserving our city's ability to survive and thrive after an earthquake."

What people in earthquake-prone cities should know is that engineers have ways to cost-effectively and creatively upgrade their investments. We can help them to prepare for the next major earthquake in commercially feasible ways. It will protect their investment and business and will eventually save many lives.

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