Can you answer the same questions about these two building in a major earthquake?

The building on the left recently underwent a $35 million renovation, to beautify the exterior and modernize the interior spaces. But behind the façade sits a 60 year old structure, designed and built before the advent of modern building codes. The building on the right, while not as eye-catching, was completed just a few years ago and is a base isolated structure that is expected to both be fully operational following a major seismic event and suffer virtually no damage.

As they say, beauty is often only skin deep. Despite the humble appearance of the new Toyota Corolla when compared to a '67 Corvette, the former is equipped with dual air-bags, vehicle stability control and front emergency braking sensors. The latter has a lap belt. If your goal is to protect the lives of yourself and your passengers, avoid repairs that could break the bank, and be confident that you can get back on the road with a similar ride immediately after an accident, the humble choice can be the best choice. But, all of that is probably obvious…

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Would you be surprised to learn that up to 90% of buildings in a typical major city do not comply with modern building codes for earthquake life safety?

Structural engineers learn new things about the performance of buildings after every major disaster. Following a series of large California earthquakes in the 1970’s, 80’s and 90’ commercial building codes in the late 1990’s and beyond became really the first to provide owners and builders with a high level of confidence that in a major catastrophe their buildings would be safe, and not collapse. But on average, only 1% of a city’s building stock is replaced each year; so the fact is many thousands of buildings in these cities were constructed well before these modern codes were adopted. Earthquakes, improve occupant safety, reduce repair costs and shorten the time to regain partial and full building use. The USRC strongly recommends that building tenants carefully consider the basis for the rating, excluded items and associated uncertainty, and then take measures to remove hazards from the work place and prepare plans for business resumption.

Why would cities allow this?

Most cities do not require that an existing building be brought into full compliance with the current building code. For a large city such as San Francisco, the cost to replace all its buildings with modern structural designs would cost literally hundreds of billions of dollars and take decades to accomplish. Living and working in older buildings that may not comply with modern earthquake safety standards is simply a fact of life in many parts of the country. It is a risk we take.

How can I know whether the buildings in which I live, work and conduct business meet current standards for life safety during earthquakes?

While the public is generally well aware that a ’67 Corvette is not going to be as safe as a 2017 Corolla, it is probably much more difficult for a person to know whether the building in which they work or live, or which they may want to purchase, meets current life safety standards. You cannot always tell a building from its façade, so to speak.

The USRC building rating system identifies expected consequences of an earthquake or other hazards affecting buildings. You can use a USRC Rating to understand the expected performance of the building in which you live, work or invest. The USRC Building Rating System evaluates building performance across the dimensions of Safety, Damage, and Recovery and assigns ratings to buildings that meet or exceed modern code standards.

Who Uses the Rating System?

All building stakeholders benefit from the USRC rating system. Owners use USRC ratings to give them confidence that their USRC rated buildings meet or exceed modern code standards for safety, repair cost and recovery time. Lenders and Insurers use ratings to make informed real estate transactions associated with lending and insurance. Architects use the USRC rating as an integral part of resilient design strategies for their clients. Tenants value the USRC rating as it relates to both safety and recovery time following a major event. Governments and Institutions use USRC ratings to identify safe buildings and make long-term strategic plans for reducing reconstruction costs and recovery time following earthquakes.

Highlight your new or seismically retrofitted building as one of the small percentage that comply with or exceed modern code standards for safety, asset protection and recovery time. For more information, contact the U.S. Resiliency Council at info@usrc.org or (650) 877-2150, or check us out at www.usrc.org