

A shaky new century

Gerald Hill, Sonoma Index-Tribune, 2-25-10

Second of two parts

In 1904, the Los Angeles City Council adopted an ordinance limiting buildings to a height of 150 feet which usually translated to a 13-story maximum. The purpose was to restrict downtown congestion from skyscrapers, and not protect against earthquake disasters, but it did have the effect of limiting potential high-rise collapses. It was generally thought that there was little earthquake danger in the Los Angeles basin. The strict height limitations stayed in effect until 1957.

San Francisco, on the edge of the San Andreas Fault, had grown in population - buildings had sprung up on its hills as well as on Bay landfill. The "Great Earthquake" hit in the dawn of April 18, 1906, with the epicenter actually on the coast of Sonoma County. The city's fire chief was killed in the first big tremor, water lines burst, streets were torn up, buildings fell, streets were littered and in both San Francisco and in the countryside of Sonoma, Marin and San Mateo counties there was substantial land displacement. Worst of all, fires broke out from fallen oil lamps in San Francisco's modest wooden houses and gas mains exploded. Between the quake and blaze more than half the city was destroyed, more than 700 identified people died and the actual total was probably much higher.

Much of downtown Santa Rosa, closer to the epicenter, was severely damaged and about 100 people were killed. Several Sonoma buildings suffered damage, including the bank on the south-east corner of Broadway and Napa Street (soon to be occupied by Union Bank) which lost its top story. Only one Sonoman died, a young clerk who was killed when he slept overnight in a room at his employer's Santa Rosa store, which was destroyed.

But 1906 was not to be the state's last large quake. As Santa Barbarans were waking up on June 29, 1925, the city was rocked by its most violent earthquake since 1812, a 6.3 on the Richter scale. The one-time Spanish village had become a hodgepodge of style, inter-mixed with some old buildings that had been covered with unfortunate facades. It was what one writer called "a wasteland of western junk." The earthquake splintered the wooden buildings and the masonry structures collapsed in clouds of powdered plaster.

Destroyed or substantially damaged were 618 buildings. State Street, the heart of downtown, was a total mess. In the area, 13 people were killed. After the initial clean-up, a wonderful thing happened.

Led by Pearl Chase, a dynamic woman graduate of U.C. Berkeley with an indefatigable zeal for civic beauty and public responsibility, residents realized this was a real chance for Santa Barbara to recapture its charm and rebuild with harmonious designs. Height limitations and other controls were adopted by the city government. Businessmen and "city beautiful" people saw to it that new stores, office buildings, commercial courtyards, theaters and even service stations were built in compatible Mediterranean, Colonial Spanish, Mission Revival and related styles. The earthquake "saved" Santa Barbara from mediocrity. Fortunately there was local wealth earned from tourism to fund the reconstruction and tasteful development.

The March 11, 1933, Long Beach earthquake proved with a vengeance the need for setting enforceable standards for land development and building structures. The temblor was centered in a crowded industrial area, where much of the property was land fill, and construction standards were lax. Buildings collapsed, water tanks fell through roofs, and poorly-built schools were damaged, all resulting in a loss of 115 lives. The desert town

of Brawley suffered severe damage in a May 19, 1940, quake, when old buildings were shaken apart, killing nine. However, newer schools built under stricter standards survived with little damage.

The most violent earthquake since the 1906 San Francisco disaster was the Kern County earthquake on July 21, 1952, at Richter 7.3. It shook communities up and down the San Joaquin Valley (I felt it 80 miles away) centered in the towns of Arvin and Tehachapi. There were 12 killed, primarily in the collapse of a brick hotel. This was just a warm-up to a major destructive shake in Los Angeles, a city thought to be relatively safe. On mid-morning Feb. 9, 1971, a 6.6 quake centered in the San Fernando Valley just north of downtown Los Angeles sent freeways crashing, bringing transportation almost to a standstill. The surfaces of the two airports were torn up, medium-sized buildings, including larger homes, came tumbling down. Worst of all, Olive View Hospital collapsed.

Eerily, the many swimming pools in up-scale neighborhoods sent waves of water splashing into the streets. A total of 65 people were killed, 2,000 were injured, and the costs reached a half billion dollars.

A new seismic problem in Southern California became evident at 7:45 a.m. Oct. 1, 1987, in the town of Rosemead southeast of central L.A. The quake was unexpected because it originated almost six miles underground in what was called a "blind thrust," of slippage of a previously unknown fault. The tremor was violent, but there was no rupture of the surface. Eight people were killed by falling objects and landslides while property damages affected a thousand homes and businesses. It brought to the attention of seismologists the phenomenon of blind thrusts well below the surface, and prompted a Harvard University study.

Despite a long list of remedial and protective efforts to meet tougher construction standards - including heightened public awareness, better safety requirements for schools, hospitals and other buildings, both metropolitan centers of California were soon to get another taste of Mother Nature's wrath.

The destruction from the so-called Loma Prieta earthquake the afternoon of Oct. 17, 1989, was amazingly widespread. Named for a rural area north of Santa Cruz, it caused much of the types of damage in the San Francisco Bay area long feared by seismologists. A section of the upper deck of the San Francisco-Oakland Bay Bridge fell in, its Cypress double-decked freeway pancaked one deck on another, and the Marina section of San Francisco and downtown Santa Cruz 80 miles away were both badly damaged. Just as the Giants and Athletics were taking the field for the World Series at jam-packed Candlestick Park, large chunks of cement were shaken loose, fortunately causing no fatalities.

Automobile traffic was tied up for months around the Bay Area. Television stations were knocked off the air. Even in Sonoma, lawns waved like oceans and there were utility breakdowns. Although its Richter rating was short of 7, Loma Prieta left 63 dead, injured almost 4,000 and caused \$6 billion in damages, including short-term bridge repairs. The only plus was the destruction of the ugly Embarcadero Freeway in San Francisco.

Another blind thrust earthquake, in Northridge on the cusp of the San Fernando Valley above Los Angeles, became the most costly California earthquake since the 1906 San Francisco disaster. At 4:31 in the early morning of Jan. 17, 1994, the Los Angeles area was awakened by a sharp shaking lasting less than 20 seconds with a Richter magnitude of 6.7. The blind fault was a dozen miles deep, and the damage was widespread. Major freeways and interchanges fell down while landslides blocked other highways and swept into large homes in Pacific Palisades. The death toll was 57, but injuries exceeded 5,000 and property damage \$20 billion. The one bright spot was that Olive View Hospital, destroyed in the 1971 earthquake, survived after being rebuilt with new standards.

One area of continuing earthquake-related concern is the site of the 1700 tsunami on and off the shoreline of

Northern California. Over the last 120 years there have been a dozen seismic shudders around Cape Mendocino, Crescent City, Eureka, Ferndale and the lumbering town of Petrolia, much of them with epicenters in the ocean. How much is the pressure building?

Californians would do well to contribute to relief for Haiti, for who knows when it will be our turn to be victims.

It's your move, Mother Nature.