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## *Case study: earthquakes*

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The January 1994 Northridge Earthquake struck hard: the first major earthquake to occur directly beneath a highly urbanized area in California. Northridge was the first California earthquake and first disaster to receive a special grant totaling US\$10 million to preserve damaged historic properties. This grant program is administered by the Historic Preservation Partners for Earthquake Response, a coalition of national, state and local preservation agencies.

Several significant changes were made by the preservationist community to respond to the Northridge disaster and to mitigate the threat to historic sites. These were developed as a result of the difficult learning process provided by the earlier disasters, such as the Loma Prieta Earthquake.

Earthquakes are the most insidious of all *natural* disasters, putting aside man-made disasters. There is not an earthquake season such as for hurricanes. Earthquakes do not appear on weather radar. They strike without warning, and have almost everywhere in the continental United States, and elsewhere in the world, such as recently in Japan and in Russia; and there is never just one quake. After the Loma Prieta Earthquake, over 1,000 aftershocks were felt, some almost as strong as the first.

When the buildings begin to shake, bridges sway and the sidewalks and roads move, the first thought is "Is this only a minor tremor, or is it the BIG ONE!"

Earthquakes are both physically and emotionally devastating to the population. They can wreck the physical infrastructure - the gas, electrical and communications lines which we are so depended upon. The local, regional and state economies can be decimated. Thousands of people can be left homeless or in makeshift shelters.

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The basic nature of earthquake disasters has historically remained the same to this day. The photographs and written records of the 1886 Charleston, South Carolina Earthquake and the 1906 San Francisco Earthquake and Fire document this point.

The 1989 Loma Prieta Earthquake was truly a ‘wake-up call’ for preservationists. We saw how vulnerable historic sites are in a disaster. All the protective regulations and processes that we have struggled to implement in the last two decades do not exist during that emergency period following the initial earthquake disaster.

The California Environmental Quality Act, which covers both natural and cultural resources, Section 106 of the National Historic Preservation Act, and local protective laws and property rights are superseded by emergency needs. Historic buildings damaged in the Loma Prieta Earthquake were demolished in the name of ‘life safety’.

Local government officials, especially the smaller towns and cities, were overwhelmed by the impacts of the disaster. Responding to the basic needs of shelter, water, food, communications, power, and restoring the local economies were the high priorities. Preserving or giving historic building a second opinion before demolition was not a high priority.



**Figure 17.1. Commercial building in Hollywood, CA, partially collapsed following the 1994 Northridge Earthquake. It was restored using special federal funds for damaged historic structures. (Photo: Steade Craig 1994).**

Further, disaster response information was very confused among the local government officials, and the federal and state disaster agencies. This situation led to the demolition of many historic buildings, especially the unreinforced masonry structures which were very quickly demolished in the first 30 days of the disaster.

Also, funding for repairs was extremely limited. Federal and state agencies provided almost 100% funding for government and nonprofit owned buildings. But for damaged private buildings, such as residential and commercial buildings, and also religious buildings there was basically nothing except low-interest loans.



**Figure 17.2. A private residence in Fillmore, CA, following the 1994 Northridge Earthquake. (Photo: Steade Craigo 1994).**

We quickly understood that the state preservation agencies had no official disaster role. Our own fellow state agency, the Office of Emergency Services did not recognize the Office of Historic Preservation and the California State Historic Building Safety Board as partnerships in the disaster response.

Another interesting discovery was that the local governments with strong preservation programs already in place lost the least smallest number of historic structures and also recovered very quickly, such as San Francisco and the City of Los Gatos. Unfortunately, other cities, such as Watsonville and Santa Cruz, lost many historic buildings and their recovery has been very slow.

The rush of demolitions was slowed somewhat by a new state law, Public Resources Code 5028, which requires the approval of the State Office of Historic Preservation before a historic building can be demolished, if an imminent threat situation does not exist.

Several years after the Loma Prieta Earthquake, a formal agreement was reached between the State Office of Historic Preservation and the Office of Emergency Services, which provided the Office of Historic Preservation with an official disaster role.



**Figure 17.3. A private residence in Santa Cruz, CA., following the 1994 Northridge Earthquake. Wood frame residential structures were commonly damaged when the foundation cripple walls collapsed. (Photo: Steade Craigo 1994).**

The Loma Prieta and the Humboldt Earthquakes clearly demonstrated the need to educate the public and government agencies, and to seismically retrofit buildings, as well as to be prepared. We could no longer bury our heads in the concrete, ignoring the next earthquake.