

Earth's Dynamic Geosphere: Earthquakes Activity 6 - Designing "Earthquake-Proof" Structures

This investigation will help you to:

- Preparing for the Chapter Challenge
- Inquiring Further
- Learn more about the Duration of shaking
- Learn more about the Underlying Earth Materials
- Learn more about the Building Materials

Preparing for the Chapter Challenge

Address the design of new structures and possible changes to older structures in your community.

- Read about the Alquist-Priolo Earthquake Fault Zoning Act which was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy.
- View maps of seismic shaking hazards in California. Click on areas to obtain seismic shaking hazard values for a specific point.

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Inquiring Further

The National Information Service for Earthquake Engineering provides an excellent overview of numerous structures as well as photographs of earthquake-resistant design. Visit the following websites for more information on how to locate this data.

- "Building Safer Structures" - USGS Fact Sheet 167-95
Deals with the challenges of reducing earthquake related losses by constructing earthquake safe buildings. Contains many good photos of earthquake damage.
- "Saving Lives Through Better Design Standards" - USGS Fact Sheet 176-95
Reviews effects of ground shaking of surface structures and steps being taken to improve building codes to construct safer structures.
- Earthquake Engineering Research - University of California, Berkeley
Images and information about earthquake damage around the world.
- "Geologic Hazards Photos - Earthquakes NOAA
General information about columns as building supports and excellent slides of earthquake damage to buildings.

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Learn more about the Duration of shaking

"Earthquake Ground Shaking and its Potential Effects in the San Francisco Bay Region for a Repeat of the Great 1906 Earthquake"

- USGS, by R.D. Borchardt, G. Glassmoyer, and C. Wentworth

This is an online slide show which can be broken up into three parts (1906 and 1989 Earthquake Damage, Application of GIS Technology, and Earthquake Ground Shaking Maps for the San Francisco Bay Region). The entire "show" takes about 15 minutes and can be viewed with or without sound.

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[Learn more about the Underlying Earth Materials](#)

"Soil Type and Shaking Hazard in the San Francisco Bay Area" by Linda C. Seekins , Jack Boatwright, and Tom Fumal, USGS

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[Learn more about the Building Materials](#)

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