

Earthquake Fast Facts

What is an earthquake?

An earthquake is the sudden, rapid shaking or rolling of the Earth. Earthquakes happen when rocks break or slip along fault lines in the Earth's crust, releasing energy that causes the ground to move.

Important Facts to Know about Earthquakes

- Earthquakes cannot be predicted with accuracy.
- Earthquakes may trigger other hazards, such as flooding, landslides, fires, or avalanches. A large earthquake in the ocean floor can produce tsunami waves.

What are the elements most at risk during earthquakes?

- location of settlements in earthquake prone area or along fault lines, esp. on soft ground or in areas prone to landslide (weak slopes)
- dense collections of weak buildings with high occupancy
- poor quality, non-engineered buildings constructed with earth, rubble stone, un-reinforced masonry
- heavy roofs
- older structures with little lateral strength
- infrastructure above ground or in weak soil

How can communities be more protected against earthquake?

Here are some things that can be done to protect homes and communities from the damage caused by earthquakes.

Before an earthquake

Building safer

- Make new construction safe : Ensure construction follows state of the art standards for earthquake resistant building, especially for "lifeline" buildings (e.g. hospital, emergency service), to withstand ground shaking. Enforced building codes to ensure that all new buildings fully comply with seismic requirements
- Seismic retrofitting : Identify vulnerable existing structures and establish standards for retrofitting or replacing dangerous structures. Conduct inventories of existing buildings, particularly high-use and high-occupancy buildings, to assess earthquake hazard and vulnerability. Ensure any buildings at risk undergo seismic-retrofits

- Inventory "soft-story" buildings: "Soft-story" buildings are buildings with unusually weak stories, which can easily collapse in an earthquake.

Land-use planning

- Conduct seismic mapping/zoning.
- Define the level of the earthquake hazard in order to facilitate the development and application of construction codes and standards. At a minimum, hazard zones should be established.
- Avoid building on fault lines, in flood plains, on river banks, or in areas prone to landslide.
- Ensure critical infrastructure, such as schools, hospitals, electricity, energy, telecommunications, municipal water/waste water, and transport are not located in areas at risk.

Raise community awareness and preparedness for earthquakes.

- Conduct community earthquake drills.
- Develop and implement educational programs in schools to raise awareness about earthquake hazards and preparedness actions.
- Prepare a family emergency plan. See, for example:
http://www.redcross.org/static/file_cont36_lang0_23.pdf
- Prepare important staff from schools and local hospitals, for an earthquake

See other fact sheets to reduce possible damages from secondary earthquake effects, such as fire and floods.

During the earthquake:

http://www.fema.gov/hazard/earthquake/eq_during.shtm

After the earthquake:

http://www.fema.gov/hazard/earthquake/eq_after.shtm

Statistics:

http://www.em-dat.net/disasters/Visualisation/profiles/natural-table-emdat_disasters.php?dis_type=Earthquake&Submit=Display+Disaster+Profile

Good case studies

Nepal

<http://www.nset.org>

For Further Information:

http://www.pep.bc.ca/hazard_preparedness/Earthquake_Information.html

http://www.redcross.org/services/disaster/0,1082,0_583_,00.html

http://www.fema.gov/hazard/earthquake/eq_before.shtm

<http://www-megacities.physik.uni-karlsruhe.de/>

<http://www.nset.org>