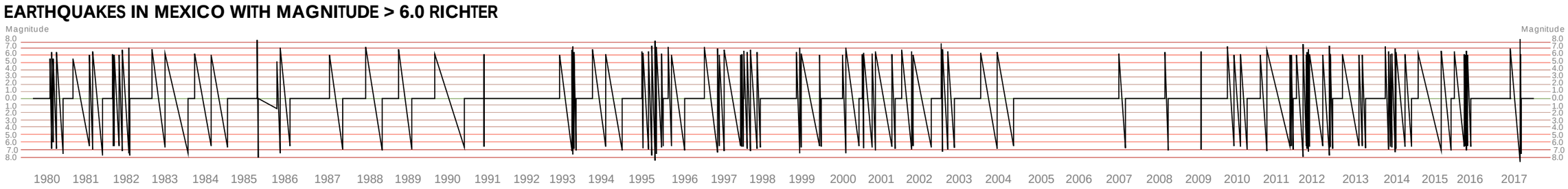
MEXICO'S 2017 EARTHQUAKE

MY PERSONAL EXPERIENCE

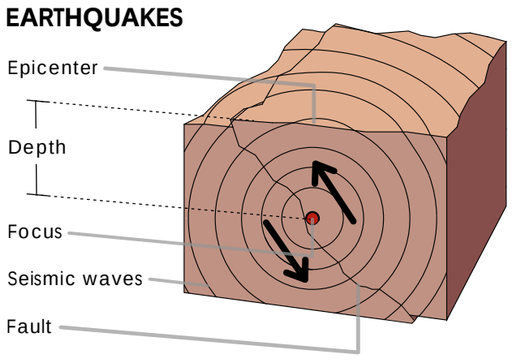
By Ahisa Puebla

Mexico is located within one of the most seismically active regions in the world, called The Ring of Fire. Every year several earthquakes occur. While most of them are harmless, some of them leave very serious consequences. The last great earthquake that hit Mexico was on **September 19, 2017**; which lead to the dead of hundreds of people and the collapse of docens of buildings. Another architecture student and I designed a house in Cuajimalpa, a town in Mexico City, as a donation for a family that was greatly affected as a result of this earthquake.

EARTHQUAKES IN MEXICO WITH MAGNITUDE > 6.0 RICHTER



EARTHQUAKES

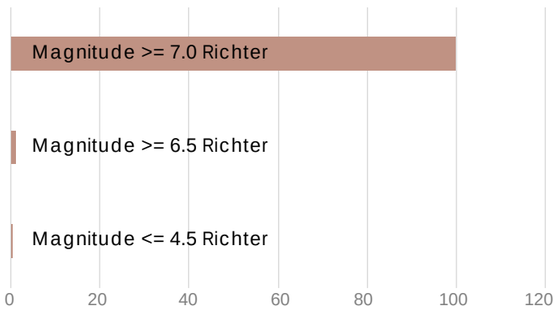


Earthquakes are caused when rock underground suddenly breaks causing a fault, usually along the edges of the tectonic plates. This releases energy, causing seismic waves, which make the ground shake. Until the plates get stuck again, the seismic waves will continue shaking the ground.

World's earthquakes / Largest earthquakes

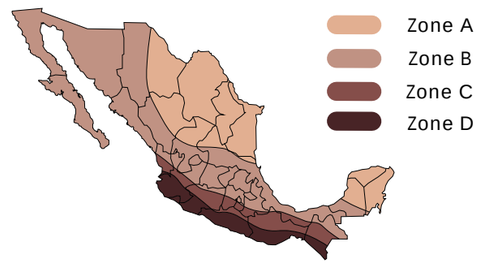
EARTHQUAKES IN MEXICO

Average number of earthquakes per year in Mexico

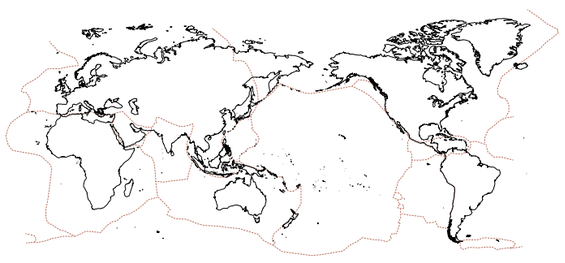


Ground acceleration during earthquakes in Mexico

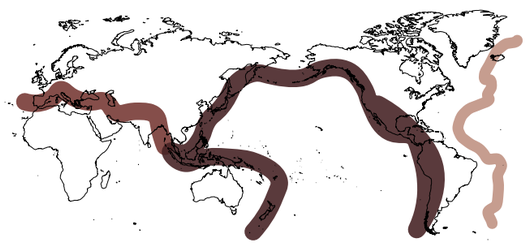
Zone A: ground acceleration <10%
Zone B & C: ground acceleration 10-70%
Zone D: ground acceleration >70%



TECTONIC PLATES

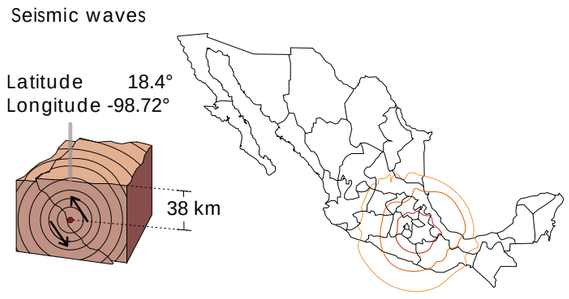


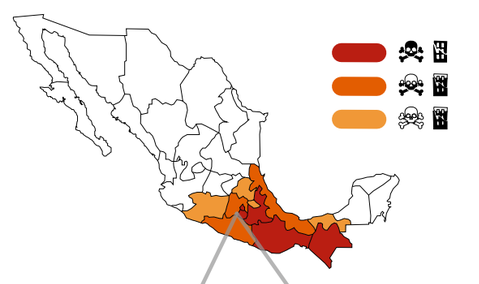
SEISMIC BELTS



SEPTEMBER 19, 2017

Seismic waves





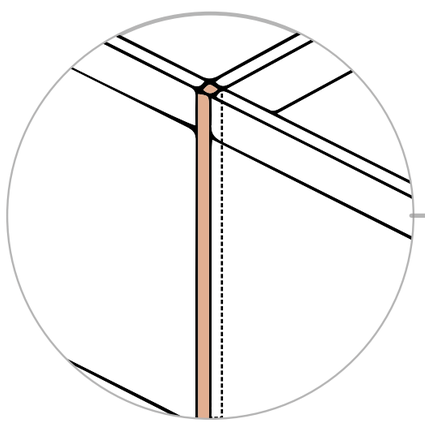
SAN PABLO CHIMALPA

San Pablo Chimalpa is a town located in Mexico City, which was affected by the September 19h earthquake. This house belonged to a family of 5: Two sisters with a son each and their grandfather.

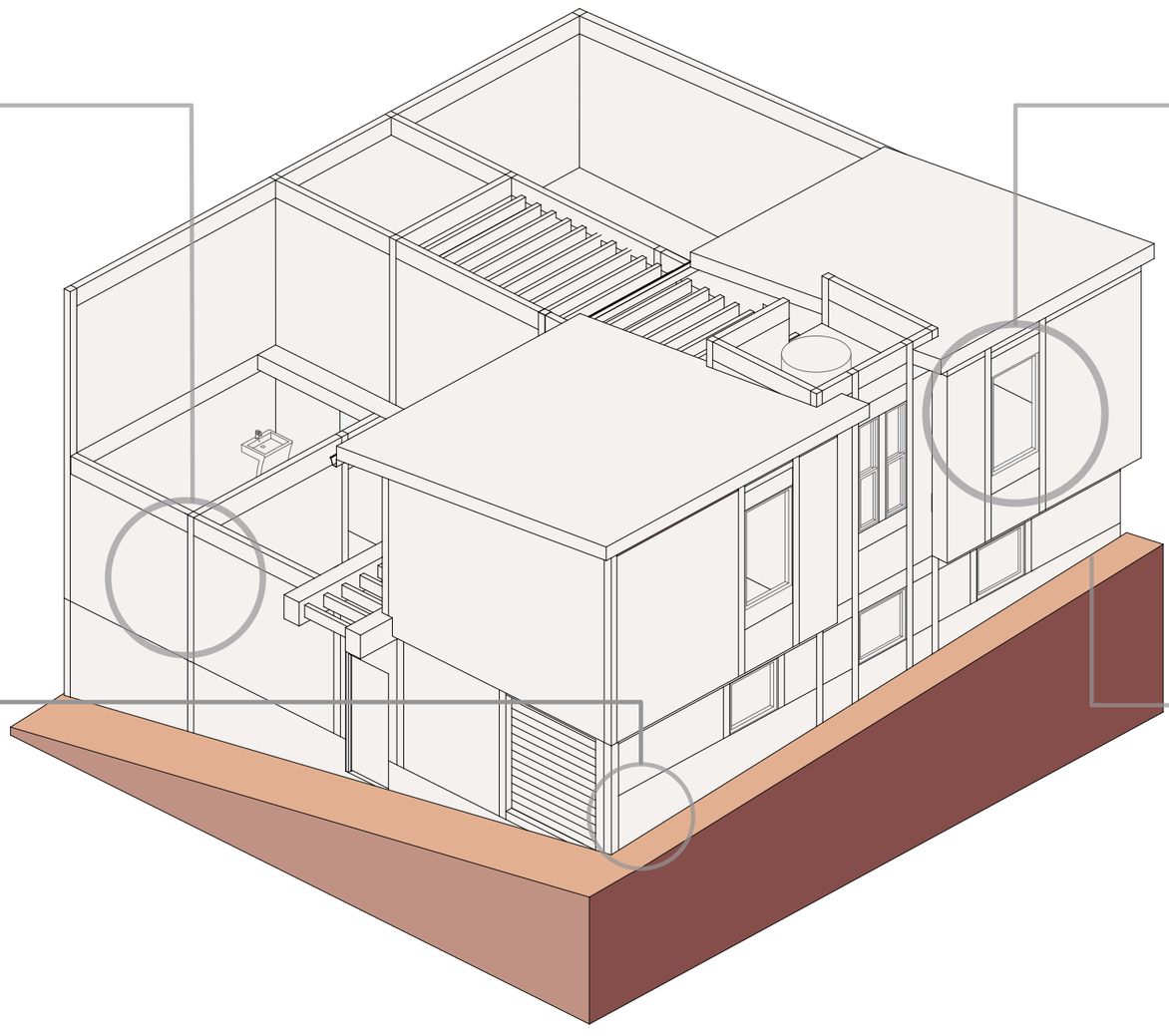
The house was collapsed with the earthquake. Only one room was left but it was severely damaged.

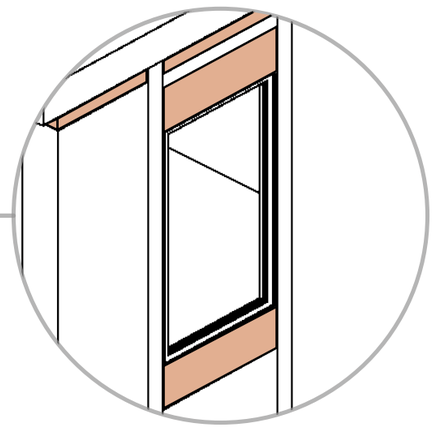
I volunteered, with a friend, to design a house to be donated to the family. The money was to biuld was donated by a bank, and it is currently under construction.

The new design was made according to the family's needs and desires, with local typical materials, but considering the earthquakes that could occur in the future.

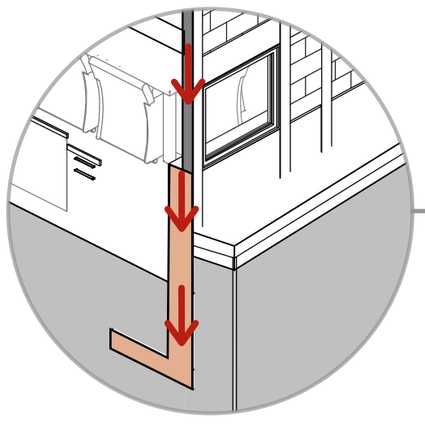


Columns are necessary in each corner and every 3 meters along the wall to hold it correctly. They must go down all the way down to the foundations.

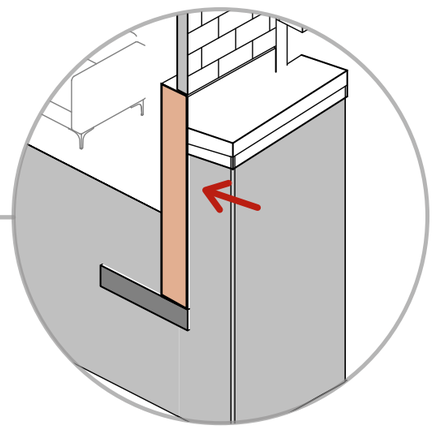




Beams are necessary below and above every window, as well as above every door and wall to ensure the walls' stiffnes, even if it has shafts.



Foundations are realliyimportant because they all the building's loads, transferring them to the ground to keep the biulding stable.



Since the terrain has a high slope, contention walls are necessary to hold the lateral forces of the soil.

Sources: ssn.unam.mx / ciencia.unam.mx / usgs.gov / training.fema.gov / eitb.eus