

OKLAHOMA ROCKS!

shake, RATTLE & ROLL

Seismic Stations

A field technician is responsible for maintaining the seismic stations. A surveyed 6x6 foot plot of land hosts the seismometer, seismic vault, digitizer and solar panel with a back-up battery. When building a seismic station, the field technician digs a 4-5 foot hole for the seismic vault, pours concrete on the bottom

to create a contained area along with a level base so the seismometer can pick up on ground motion. Where? The best seismic sites are in areas that have low seismic noise (ground motion that is recorded but is not related to what research scientists are investigating). Things that can contribute to unwanted noise can be: road traffic, oil/natural gas extraction, windmills, livestock, etc. The stations broadcast the data via a cell modem to the OGS seismic monitoring system. The data that is received from these instruments is used to improve understanding of active faults, subsurface rocks and their properties, ground motion observed on the surface within and near Oklahoma, and potential changes that may be causing some of the earthquakes within Oklahoma.



https://commons.wikimedia.org/wiki/File:AC_Dom_Seismometer.jpg (cropped),
Seismometer am Aachener Dom, 15 November 2012, Author: SpacePen

Killer Quake!

Objective:

To gain experience with the thinking process involved in constructing an earthquake-proof building.

Materials (for each team):

- copy of "House of Cards" student handout
- 1 dozen 4"x 6" index cards
- 6 paper clips
- 4 sheets of plain paper
- 1 empty shoe box
- sand to fill the shoe box lid
- 1 electric fan

Activity:

Divide the class into groups of two or three students. Distribute the "House of Cards" student handout to each group. Have groups choose the challenge they want, and then follow the instructions on the student handout to build and test their models. Make sure all of the challenges are chosen.

For students who are working on the wind challenge, set up a room fan 10 feet from the spot where the test structures will stand. Encourage students to explain their reasons for constructing the buildings in a particular manner.

For more detailed instructions on Killer Quake and the "House of Cards" handout visit: http://www.pbs.org/wgbh/nova/education/activities/2116_killerqu.html