​

From the beginning of the world, we human beings are facing various kinds difficulties because of natural disaster.Earthquake is one of the most vital problem amongst them.we,the greatest creature of God, are helpless against the Earthquake.We have found no other solution in order that we can face this at least having no loses.   
There is a good reason of why not we are finding any solution.Because we always are looking to stop it instead of taking any remedy.But we always forget that none of us can change the will of God as much as we want to till He wants to change it.

After the tragic earthquake of Nepal, April 25,2015,which is measured 7.8 magnitude in Richter scale, depth 8.2 kilometer,losing approximately 10 billion $ and about being 3.5 million people homeless.That’s where we are thinking of working on it.   
  
To solve this problem,we worked on it and developed a special building structure adding some special features so that no more building collapse due to shaking of earthquake.we named our project Earth-QART(Earth-Quake Absorbing & Reduction Technology).   
Earthquakes are usually caused when rock underground suddenly breaks along a fault. This sudden release of energy causes the seismic waves that make the ground shake. When two blocks of rock or two plates are rubbing against each other, they stick a little. They don't just slide smoothly; the rocks catch on each other. The rocks are still pushing against each other, but not moving. After a while, the rocks break because of all the pressure that's built up. When the rocks break, the earthquake occurs.   
  
In order to solve this,we use some special features in building structure.  
# Gimbal  
# Hydraulic Base  
# Sensor  
  
Gimbals are the main structural part of our innovation.we connect four gimbals with the four major pillars of the building.Gimblas are made following the simple law of 3 dimensional axis of physics so it can move any side in accordance with its need based on the earthquake direction keeping the building fixed and free from shaking.Gimbals are attached with building following the ratio (6.5-7.5) : (3.5-2.5).this gimbal is capable of tolerating 12 magnitude earthquake.It is such kind of equation that is polynomialy developed for every size of the building.   
Hydraulic Base is another important feature of our structure.Basically our building is made on hydraulic basement instead of using soil unlike other normal typical building.Here we use the law of Hydraulic Press of physics in our basement.when earthquake is sensed,this base automatically will push itself down and building will be hang up with gimbals so that all the shaking attacks the gimbal but building.Then after the earthquake hydraulic base will pull itself up.   
Sensor is the last special feature that we add in our structure. New sensor technologies have greatly reduced the cost of lower-resolution strong motion seismometers. These sensors use micro-electro-mechanical systems (MEMS) accelerometers that are contained on a single computer chip.Those sensors will have connected a central reserve and processing system. As well as earth quake come sensor sense the shock and send a signal to the center. And center will run a mechanical system that pull down the hydraulic base.we set this sensor under the 200 meter to 2 kilometer of the ground which covers 15-20 kilometers of area and it will provide sense 4 seconds before earthquake happening.

We have an Algorithm.

Step 1: set the Gimbals basement pillar

Step 2: set the Hydraulic Basement

Step 3: connect building and Gimbals basement pillar with Gimbals (Connection ratio (6.5-7.5) : (3.5-2.5).

Step 4: Make sensors functional and connect with Hydraulic Basement and Alarm systems  
  
It is matter of great happiness that our building costs less compared to normal building.In normal building all the pillars must have basement that causes a big mount of cost but in our structure only four gimbal pillar must have basement.So we can avoid unusual cost.   
At present NASA have the sensor of detecting earthquake that approximately response before 20 seconds of happening of earthquake.If NASA allows us to use their data,our innovation has a great future that can widen the way of out improvement by doing minimum lives lost,minimum damage.

**Background:** Nepal Earth Quake havoc.

Resource: NASA Earth Center Data, Team research.

[http://www.geo.mtu.edu/UPSeis/why.html](https://l.facebook.com/l.php?u=http%3A%2F%2Fwww.geo.mtu.edu%2FUPSeis%2Fwhy.html&h=ATMpuY3rAkYlol1YEGfRJ3H3p_Am2fKld6sM8zR4eCpPbNYFFxBhYuaz9UcFuFlQW1bjrBX8oe-Vi1wyAU8N3JZZIehq3LMzt0W8uMdl8muJyFd_M6-YmZGbaoF48C2PbI65HeAE)

[http://tinyurl.com/arrayctg](https://l.facebook.com/l.php?u=http%3A%2F%2Ftinyurl.com%2Farrayctg&h=ATMpuY3rAkYlol1YEGfRJ3H3p_Am2fKld6sM8zR4eCpPbNYFFxBhYuaz9UcFuFlQW1bjrBX8oe-Vi1wyAU8N3JZZIehq3LMzt0W8uMdl8muJyFd_M6-YmZGbaoF48C2PbI65HeAE)

[https://earthquake.usgs.gov/research/earlywarning/nextsteps.php](https://l.facebook.com/l.php?u=http%3A%2F%2Ftinyurl.com%2Farrayctg&h=ATMpuY3rAkYlol1YEGfRJ3H3p_Am2fKld6sM8zR4eCpPbNYFFxBhYuaz9UcFuFlQW1bjrBX8oe-Vi1wyAU8N3JZZIehq3LMzt0W8uMdl8muJyFd_M6-YmZGbaoF48C2PbI65HeAE)

<https://en.m.wikipedia.org/wiki/Earthquake>

<https://github.com/tawfiqmislam/Earth-QART>

[https://earthquake.usgs.gov/learn/topics/measure.p...](https://earthquake.usgs.gov/learn/topics/measure.php)​

Challenge: Minimum lives lost,minimum damage.