

How We Can Make More Earthquake Proof Buildings

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How Seismic Buildings work

Before we get to the solution, there are different ways buildings are built. There are conventional buildings which are dug into the ground normally. Seismic buildings are isolated from the ground as shown in this video

2 Types of Buildings

Thousands of buildings have been fitted with shock-absorbing devices that can greatly reduce damage and prevent collapse, these buildings are called seismic buildings. Normal buildings (Conventional Buildings) are built directly into the ground and when the ground moves the building moves as well. Seismic buildings are shock absorbent and use base isolation.

<https://youtu.be/zLtGR46FUss>

Economic Factor

Of course getting all the material to build earthquake proof buildings AKA Seismic buildings is very costly, it would be much easier to just build normal buildings. So we need to find ways to build them without causing problems economically. The solution for that is unknown for now but we can find out.

Solution

Here are 3 different solutions I came up with,

- We could start local by going door to door asking people if they're interested in getting a seismic upgrade for their homes
- We could start off small by building 3 or more seismic buildings and selling them for cheaper prices, then slowly raise the price
- We could risk and build multiple seismic buildings and make TV ads about them to get more people involved

Conclusion

In conclusion, finding the solution right away is not easy so we must make plans to find a solution. My goal is to become a civil engineer so when that time comes I'll find a much better solution, but for now I could still find tons of ways to help.

Fun Facts About Seismic Buildings

- Seismic buildings have lightweight roofs, lighter floors and walls.
- Some Seismic buildings use steel reinforcements.
- The base is flexible, made from a material such as rubber.

Final

I plan to keep researching more on this topic and hopefully on next year's science fair I'll come up with a much more efficient and productive way to build seismic buildings all around the world.

Bibliography

<https://www.nytimes.com/interactive/2019/06/03/us/earthquake-preparedness-usa-japan.html>

<https://www.hindawi.com/journals/ace/2019/7357913/#results-and-discussions>

<https://youtu.be/zLtGR46FUss>

<https://www.hunker.com/12549508/facts-about-earthquake-proof-buildings>

Thank You!!