



User's guide of the Paper BURURU

Paper Bururu is a paper-craft teaching material. While playing, you can understand the behavior of a weak building during an earthquake. Try it and discover ways to reduce vibrations.



Heavy roof

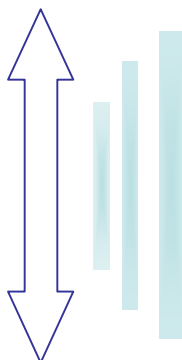


Light roof

experiment ① The difference in roof's weight

In general, houses with a heavy roof are disadvantaged during an earthquake. Indeed, houses receive a horizontal power proportional to weight during an earthquake.

Moreover, the proper period is longer when the roof is heavy, and it begins to shake slowly and widely. By observing Paper Bururu, you can truly study these changes.



experiment ② The difference in rigidity of upper and lower floor

There are many building with the garage and the store on the first floor. Moreover, there are a lot of houses where the first floor has a big window and a wide room, and the second floor has a lot of private rooms. The first floor is relatively weak in such a building. During an earthquake, the first floor is transformed compared with the second floor. A pillar of the first floor alone cannot endure the amount of the transformation and it collapses. (left below photo)



Brace (second floor onry)



Brace (both floors)



experiment ③ The effect of earthquake-proof retrofit

If Braces are used, it is possible to reinforce houses effectively with few materials. A brace is a diagonal material that enters between one pillar and another. Houses are more resistant against earthquakes when these are braces. However, the presence of braces alone is not enough. It is important to arrange it similarly in the upper and lower braces.