

## 2. Safe skyscrapers at time of earthquakes

### Escape into a super high-rise building when earthquakes happens

#### Safety/Security

##### 1) Kasumigaseki building (the first high rise building in Japan)

Kasumigaseki bldg... (7min walk from Toranomon station)



← The poster of "KING KONG" in 1933 (Many super high rise buildings, in N.Y. in this poster.)

→ The first high rise building in Japan constructed in 1968. "Daun of the super high rise building"



36 floors / 147m

In these days, it was impossible to construct high rise building in an earthquake country, like Japan.

But the progress in the study about anti-earthquake building and electronic computers enabled to build the safety and secure earthquake-proof super high rise building in Japan.

In Japan, super high rise buildings are defined 60m high or more. To build high rise buildings, it is required to take a competent agencies.

##### Kasumigaseki building is so appealing ?

The building is the world 1<sup>st</sup> building that was constructed on the basis of vibrational analysis using electronic computers. It is a symbol and fruit of Japanese earthquake proof technology.

The high quality Japanese industrial product y, that Japan was proud of were used.

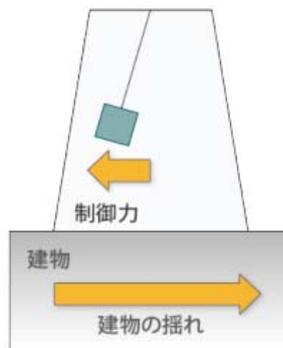
Since then the world began to recognize advanced Japanese technological power.

It was build 50 years ago. This building is still popular, but latest IT equipment is installed building and its attractive point

##### 2) The quake control device of Shinjuku Mitsui building and the attractive point

On the rooftop of the 55 stories, 210 meter high building, a swinging pendulum with a 1800 ton spindle was placed. This is "a damping device". The spindle swings opposite direction to the quakes of earthquakes and reduces the vibration of the building that **deviced** form seismic-quakes. The quake control device have been

installed on the top of the super high rise building, but quake control device for big existing building such as this is so rare, and worth visiting to take a look.



Singing pendulum seismic isolator on the rooftop

The principles of the swinging pendulum seismic isolator

## Additional articles

### A crash-proof

The World Trade Center Building after the plane crashed into them. We analysed the impact of an aircraft crash on the Kasumigaseki building. As a result, the anti-seismic structure works against such an aircraft crash.

### The super high rise building In Berlin, “The international trade center building”

This building is located on the left side of the TV tower, and it has black facade with a white frame. Before the unification East and West Germany, the furnished building financed by Japanese government. It was designed, built by Kajima Corporation included by full-turnkey. It was built by using technology and know-how of Kajima Corporation cultivated in Japan and by exporting the steel frame from Japan. It was completed in 1974 and it is 25-story building..

Reference: Internet material of Kajima Corporation and Mitsui Fudosan

