

KEIJU MEDICAL CENTER SEISMIC ISOLATION STRUCTURE

Keiju Medical Center consists of three buildings connected by skywalks. The main building, which houses essential facilities such as operating rooms and examination rooms, is a seismically isolated building.

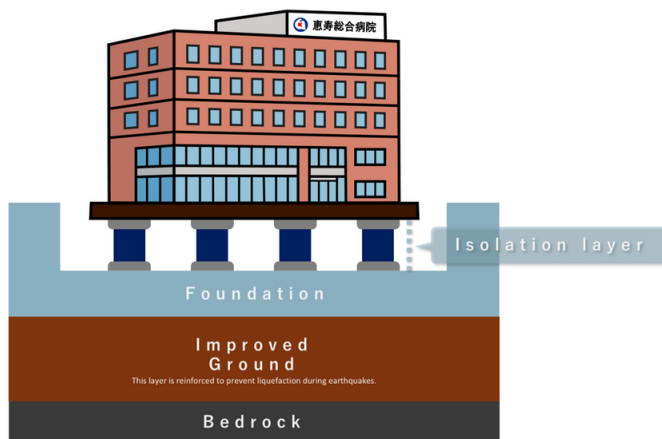
What is Seismic Isolation?

Seismic isolation is an advanced earthquake protection technology that works differently from traditional earthquake-resistant construction. Instead of making the building stronger to withstand shaking, seismic isolation reduces the amount of shaking that reaches the building in the first place.

How Does It Work?

Between the ground and the first floor of the main building, there is a special layer called the "seismic isolation layer."

In this layer, there are rubber bearings and dampers. When an earthquake happens, this layer moves. So the ground shakes, but the building above stays safer and more stable.



Understanding the Scratch Plate Device: "Kegaki-kei"

In the seismic isolation layer, we have a special device called a "**Kegaki-kei** (seismic trajectory recorder)."

Its mechanism is very simple. It has a metal plate on the floor and a needle on top. When the building moves during an earthquake, the needle scratches a line on the plate. This line shows us exactly how the building moved.

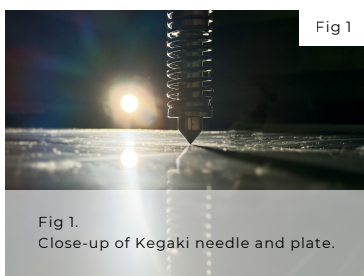


Fig 1

Fig 1.
Close-up of Kegaki needle and plate.

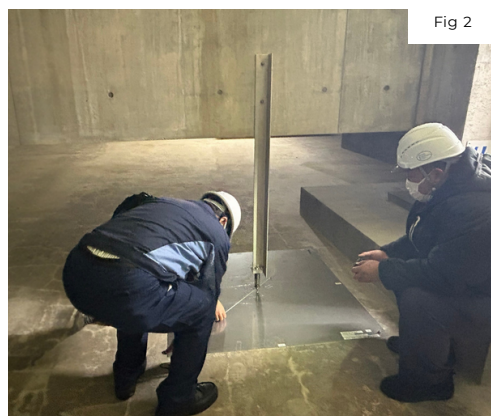


Fig 2

Fig 2.
Earthquake engineering researchers measuring the building's displacement on a Kegaki plate after the earthquake.

The 2024 Noto Peninsula Earthquake

On January 1, 2024, at 4:10 PM, a powerful earthquake with a magnitude of 7.6 struck the Noto Peninsula in Ishikawa Prefecture, Japan. The city of Nanao, where Keiju Medical Center is located, suffered severe shaking. This devastating earthquake caused widespread damage, with over 13,000 buildings affected in Nanao City alone. The city also experienced a water outage lasting nearly three months.



The "Miracle of Noto"

While other hospitals suspended operations, Keiju Medical Center—equipped with seismic isolation, robust BCM/BCP, and comprehensive disaster preparedness—remained the only functioning medical facility in the Noto region, providing medical care throughout the disaster. This achievement was featured across numerous television programs and media outlets, and discussed in parliamentary sessions as the "Miracle of Noto."

