

Protecting important assets during earthquakes

THK markets seismic isolation systems incorporating “LM Guides,” a flagship THK product, to minimize the shocks of earthquakes. After introducing the social value of these systems in detail in last year’s *CSR Report*, these systems proved highly effective in protecting buildings, servers and other important assets of our customers in the Great East Japan Earthquake that struck on March 11, 2011 and which was followed by the earthquakes with epicenters located in northern Nagano Prefecture and eastern Shizuoka Prefecture with a maximum seis-

mic intensity of 6.

To illustrate how THK’s seismic isolation systems contributed to protecting peoples’ lives and property and helped to ensure the continuity and reliability of social infrastructure and industrial activity, we will present the voices and opinions of some of those who decided to have them installed.

(Photo, left and center: House of Mr. Hiroshi Soutome and Mrs. Keiko Soutome, right: SHIZUOKA DAIICHI TELEVISION)

Seismic isolation systems ensure safe flights



Seismically isolated JAL servers

Some people may think that making a building earthquake-proof will protect important data from being destroyed. However, the hard disk of a server or other device that is inside of a building can be destroyed in an earthquake even if the building does not suffer damage or the hard disk itself is not hit and damaged by a falling object. Furthermore, think of the opportunity loss if a server were to topple over causing the system to go down. We felt a need to introduce the most effective method possible in order to avert this type of risk.

Japan Airlines manages large amounts of information on the servers of its data center including a system to support flight safety, its check-in system at airports and websites for booking flights. When the greatest earthquake on record struck on March 11, 2011, these systems remained completely unaffected by the earthquake because they were secured by THK’s seismic isolation system.

On the day of the earthquake, the Haneda and Narita Airports were shut down, grounding numerous flights. If the servers had broken down due to the earthquake, this would have seriously affected all

flights and the resumption of operations even to non-affected areas. The fact that the data center remained intact was a major feat for our company.

The idea of installing a seismic isolation system at the data center arose immediately after the Kobe Earthquake. There were a number of choices including decentralization of the data center. In the end, the decision was made to go with a seismic isolation system which promised a stabilizing effect with the lowest investment. At first, seismic isolators of another manufacturer were installed, but hearing reports that their isolation effect was insufficient, the decision was made to switch to THK’s seismic isolation system with top and bottom plates that stay in place.

Having now experienced the Great East Japan Earthquake, we are satisfied that our decision to install a seismic isolation system was a most prudent measure both in terms of cost and risk aversion.

Yuichi Osada

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Seismic isolation system for servers offers security



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SHIZUOKA DAIICHI TELEVISION broadcasts TV programs to roughly 3.8 million citizens of Japan's Shizuoka Prefecture.

In the August 2009 Shizuoka Earthquake, the server running our important enterprise system was twisted out of shape and suffered other damage. It was then that I realized that broadcasting would face serious difficulties in a major disaster such as the yet to be experienced Tokai Earthquake, and so I took the plunge and ordered a seismic isolation system for our servers.

At the discussion stage, we were also considering the seismic isolations systems of other manufacturers, but:

- (1) THK holds the top share worldwide in linear motion systems, and its basic technology a high level of reliability,
- (2) Their seismic isolation systems utilize a unique rolling technology, and

(3) The THK sales people are very convincing with their very sophisticated sales approach and strong confidence in their products.

In view of the above considerations, we decided in September 2010 to have THK products installed.

The Great East Japan Earthquake that struck on March 11, 2011 registered a seismic intensity of 4 in Shizuoka City. At the time, rolling motions that I have never before experienced continued for some time. All that happened was that the server racks moved gently in a horizontal direction, and the seismic isolation table shifted by about 5 cm. The seismic isolation systems had done their job right after being introduced. The servers did not suffer any damage, and we could sense the stability that was provided by the seismic isolation system.

Creating a new business combining house moving and seismic isolation work



**Mr. Hiroshi Soutome
and
Mrs. Keiko Soutome**

Soutome Construction Ltd.

Two years ago, we had to move our house because the municipal road next to it was about to be widened. This gave me the idea to be the first in our prefecture to combine house moving with seismic isolation technology. I then submitted a business innovation plan to the authorities, and became eligible for a Business Activities Promotion approved by the governor of Tochigi Prefecture.

We have been in business for 109 years, and I represent the fourth generation of house movers.* In college, I learned about the Urban Earthquake Disaster Prevention Plan, and I developed a strong interest in seismic isolation. Besides being engaged in house moving, I was attending regular meetings of the Seismic Isolation Society, and this is where I came in contact with the people of THK. When I heard that seismic isolators were installed at THK's UTSUNOMIYA Branch, I went there to have a look. I had also been exposed to the marketing campaigns for seismic isolators of other manufacturers, but when I saw the isolators that incorporated rolling technology, I was really impressed. I was so taken by the frequent visits and enthusiasm of the sales person that I decided to use THK's seismic isolators.

I was not in my house on the day of the Great East Japan Earthquake. At home, my wife, who gives lessons on how to

wear a kimono, was busy teaching her students. At my office, framed pictures apparently fell off the wall and scattered all over the floor. At home, however, not a single glass had broken, and it seems that my wife continued with her lesson. When our daughter-in-law, who had joined the lesson, returned to her home, some of her furniture had fallen over and household goods were strewn all over the floor. This made her realize for the first time the impact of the earthquake. Because of the frequent aftershocks, she stayed at our home that night where she felt relaxed enough to sleep. After that, aftershocks continued for a while and we could feel the ground trembling below us. Luckily our house was not at all affected and we have been able to continue our lives without incident. I realize that this is because of THK's seismic isolators that we installed in our home, and I am deeply impressed.

We are keeping our house open for anyone interested in taking a look at our seismic isolators. Please drop by and see for yourself. Going forward, I hope to be increasingly involved in construction work dealing with seismic isolation and the moving of shrines, temples and other important cultural assets. Doing this in cooperation with THK would be a real pleasure for me.

* House moving : A construction method used to comply with land readjustment measures for preservation and protection of historical buildings or moving structures to another location so they need not be knocked down.

In their own words >>> A local employee



Masami Kimura

Team Leader
Sales Section, UENO Branch
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When I recommend a seismic isolation system to a customer, I provide a detailed explanation of the benefits and effects of installing such a system and the risks of neglecting to address the danger of earthquakes. My priority is to offer resolutions to a variety of potential problems that will not be easily overcome physically and financially.

For example, I think it is very important to convince customers that seismic isolation systems offer protection against actual losses due to damaged servers and the like, but I stress that they also need to think about the repercussions on society when servers fail. Seismic isolation systems not only contribute to physical and financial risk prevention, but also help to protect assets that cannot be expressed in numbers such as the trust of customers and society at large.

Recently, many of my customers reassure me, saying "It is a good product, so sell it with confidence and you will do just fine."