

Past JETRO Client

EPS Update Article (Feb 2012):

February 2012 — Almost one year after the establishment of their Japan office, we spoke with Earthquake Protection Systems' (EPS) President and CEO Dr. Victor Zayas Ph.D. and P.E., about what attracted EPS to Japan and how they are positioning themselves for future growth in the Japanese market.



Why Japan?

Earthquake Protection Systems, Inc has been a leader in the field of seismic isolation technology for over 25 years. With a long history and excellent reputation in the earthquake protection market, EPS bearings are used in the many of the most important seismically isolated structures throughout the world, including the San Francisco Airport International Terminal, the off-shore platforms used in the Russian Sakhalin 2 development project and an elevated bridge along the Trans-European Highway in northwestern Turkey. EPS has successful applications in many seismic regions and the company is now turning its attention towards Japan.

In 1988 EPS committed to a 20 year licensing agreement for its seismic isolation technology in Japan with a Japanese rubber bearing maker. But in 2008, when that agreement expired, EPS decided it was time for them to enter the market and began to actively pursue expanding their business into Japan. Some of the most advanced rubber bearing manufacturers in the world are Japanese, and currently, seismically isolated structures in Japan use primarily this rubber bearing technology. However, with the development of their most cost-effective and advanced technology yet, the Triple Pendulum bearing system, EPS is excited to promote its advantages in the Japanese market.

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Having experienced two devastating earthquakes in the last 20 years (the Great Hanshin-Awaji Earthquake in 1995 and the Great East Japan Earthquake just last year), the Japanese public is very conscious of the risk of damage resulting from an earthquake. As Dr. Zayas explained, “After the 1995 earthquake, the Japanese public developed a heightened awareness of the need for good seismic

designs. The average person is much more concerned by and interested in achieving protection from the very devastating effects of most major earthquakes.” This means there is a huge market potential in Japan. People want seismically protected buildings, and this demand is demonstrated in the basic difference in the types of buildings that are seismically isolated in Japan compared to elsewhere. In most countries, government buildings, hospitals and other critical facilities are the first structures to be seismically isolated. According to Dr. Zayas, in Japan, seismic isolation is most commonly used in the construction of apartment buildings, as many Japanese homeowners and renters want housing that is seismically protected. As a result, seismically isolated condominiums are big business in Japan.

For EPS, however, such residential buildings have not been a significant market for their seismic isolation technology in other countries. Generally their bearings are more common in industrial facilities, such as chemical industries and gas plants, and important lifeline structures, such as bridges and hospitals. EPS specializes in designing Triple Pendulum bearings to give seismic performance that specifically protects the nonstructural components of the facility. In other words, their system works to achieve what they call “continued functionality”, or the ability of a facility to function after a major earthquake. This is particularly relevant to industrial buildings like nuclear power plants, which contain critical systems and must provide power after an earthquake.



Since the Great East Japan Earthquake, the safety of nuclear energy has been a hot button topic, and concern over earthquake safety for these types of industrial facilities has increased. EPS believes that their “continued functionality” specific technology is ideal for these kinds of conditions. It is no surprise, therefore, that EPS sees a huge potential market for their products in Japan, a very industrially advanced and seismically active country.

As with any country, entering the Japanese market comes with its own set of challenges. Nevertheless, to a certain extent, EPS has already succeeded in penetrating the Japanese market with their work on Todaiji Exhibit Museum in Nara and their extensive network with Japanese universities.

Breaking Into the Japanese Market

In 2008 EPS secured the contract to design the seismic isolation bearings for Todaiji Exhibit Museum, one of Japan’s most important historical sites. Todaiji Exhibit Museum houses a large number

of priceless Japanese artifacts, which presents a unique seismic challenge. Normal seismic building codes in Japan, like much of the world, only require engineering for the protection of life inside the building in the event of an earthquake. Performance at this level, however, does not account for the potential damage to the contents of a building. EPS' Triple Pendulum technology is designed to perform within multiple levels of seismic protection, including against both small and large earthquakes, and to go beyond the code to protect the contents as well as the structure, so that the facility may function after the earthquake, thereby preventing additional economic damage.

With the specific needs of Todaiji Exhibit Museum in mind, the Japanese Agency for Cultural Affairs and the temple construction company sought the advice of Japanese engineering experts on how to best protect the valuable artifacts. After consulting Professor Wada, President of the Architectural Institute of Japan (AIJ), Honorary Professor at the Tokyo Institute of Technology, and



overall authority on seismic engineering in Japan, it was clear EPS' Triple Pendulum technology was the only solution for the specific needs of the Todaiji Exhibit Museum construction. The engineers they consulted were also looking for something more than just structural safety that would conform to the code. They were interested in the performance of the building technology to protect the priceless artifacts over a wide range of potential earthquake hazards. EPS was able to provide exactly what they needed.

Since the Todaiji Exhibit Museum project, EPS has been waiting to get general broad approval from Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to sell their products in Japan. While these approvals have slowed their expansion into the Japanese market, EPS has received support from the academic community in Japan and a lot of help from JETRO in establishing their subsidiary, a necessary step in receiving the MLIT approvals. Looking forward, Dr. Zayas confirmed that EPS is still adamant about their decision to enter the Japanese market and is confident that there is place for their technology in Japan.

Japan Company Profile

Japan Company: Earthquake Protection Systems Japan, K.K.
Established: June 2011
Employees: 2
Business: Engineering and manufacture of seismic isolation systems for continued functionality of buildings, bridges, and industrial facilities.
Location: Kubota Bldg, #203,
3-4-2 Minami-tsukushino
Machida-shi, Tokyo 194-0002
JAPAN

Parent company: Earthquake Protection Systems, Inc. (California)
Website: www.EarthquakeProtection.com

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