

JSSI gave a lecture titled 'Seismic Isolation Systems in Japan' at the headquarters of IStructE (The Institution of Structural Engineers) in London on Thursday, 11 October 2007

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IStructE (The Institution of Structural Engineers) is one of the largest institutions organized by Structural Engineers, which has more than 20,000 members in more than 100 countries, and has its headquarters in London, UK. JSSI (Japan Society of Seismic Isolation) was invited by IStructE to give a lecture about buildings using Seismic Isolation (SI) System. The lecture was titled 'Seismic Isolation Systems in Japan', which was chaired by Mr Norman Train, Vice Chairman of IStructE by the following agenda.

1. Current state of Buildings using Seismic Isolation System in Japan by Mr Yoshikazu FUKASAWA, Mitsubishi Jisho Sekkei, Vice Chairman of JSSI.
2. Introduction Video of Seismic Isolation, DVD Video published by JSSI.
3. Basic Concept and fundamentals of Seismic Isolation System by Dr Taiki SAITO, Building Research Institute, Chairman of Committee on International Affairs of JSSI.
4. Performance of a Seismic Isolated building under a M6 Earthquake and recent topical buildings by Hiroshi KAWAMURA, Mitsubishi Jisho Sekkei, Member of Committee on International Affairs of JSSI, Member of IStructE.

Figure 1 is the flyer issued by IStructE for the lecture.

EVENING MEETING

Thursday 11 October 2007 at 6pm
International HQ
(Refreshments from 5.30pm - **lecture followed by light buffet**)

Seismic Isolation Systems in Japan

by JSSI (Japan Society of Seismic Isolation)

IStructE is pleased to welcome members of the Japan Society of Seismic Isolation to the UK.

They will give an illustrated lecture on the impressive initial research work in developing seismic isolation devices, and then describe how these sometimes massive devices have been incorporated into impressive structures and how a particular structure with seismic isolation performed in an earthquake.

Yoshikazu Fukasawa
Vice Chairman of JSSI

introduction

- What is JSSI?
- What is Seismic/Base Isolation?

Dr Taiki Saito
Chairman of the International Committee of JSSI

Basic Concept of Seismic Isolation System

- Basic concept of Seismic Design
- The idea of Seismic Isolation System
- Base Isolation devices
- Brief outline of the design of seismic isolated buildings

Hiroshi Kawamura
Member of the International Committee of JSSI

Examples and the performance of a seismic isolated building under earthquakes

- Recent buildings
- Performance of a seismic isolated building under a M6 Earthquake






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Fig 1 Flyer for the lecture issued by IStructE

In number 1, there was an introduction of JSSI, and a brief explanation of the number of SI buildings in Japan and the rest of the world, types of building usage and its ratio, types of the location of seismic isolators in a building, and a brief introduction of base isolation devices.

In number 2, an introduction video was showed to the audience.

In number 3, there was a brief explanation of the basic idea of SI system, effect of damping devices and the mechanism and variation of SI devices, followed by a brief introduction of seismic design and the

dynamic behaviour i.e., natural period and damping effect of buildings. Also, two methods of designing SI structure i.e., response spectrum method and time history analysis method were introduced. There was also an introduction of the activity of the Committee on International Affairs of JSSI, one of which was CIB/W114, a working commission for earthquake engineering and buildings; refer to the following website: <http://www.cibw114.net/>.

In number 4, there was an introduction of an existing building using SI system which experienced a M6 earthquake. The analytical simulation of the SI system matched well with the observed records collected by the motion sensors installed above the SI system. And finally, two topical recent examples using SI system were introduced. The first was a building having seismic isolators installed at the middle storey, where the structure above the isolator acted as a mass damper to the structure below the isolator. The second was a SI building using water at the isolation layer, acting as a partially floating system.

We anticipated that there would not be much attention to the subject, as earthquake would not occur frequently in the UK. On the contrary, the audience was more than 120 people, which was more than the capacity of the main room. Some of the audience had to see the lecture at the other room through the plasma screens. The audience was engineers or scholars who were mainly members of the institution, some of which were from other seismic countries. There were many questions from the audience as follows.

- Cost comparison between non- SI building and SI building
- Concern about the fact that the ratio of schools on total number of buildings using SI system is small
- How to apply SI system in weak ground conditions
- The design of SI building under a strong wind
- Return period of the design earthquake level
- How to apply SI system in high rise towers

After the lecture, there was a light buffet with wine, and there were still quite a number of eager audiences who gave us questions. We were quite surprised at the level of attention to seismic engineering and base isolation system, and were happy that the lecture went successful.



Photo 1 In front of IStructE, (YK and TS)



Photo 2 The main room



Photo 3 Yoshikazu FUKASAWA



Photo 4 Taiki SAITO



Photo 5 Hiroshi KAWAMURA