

Abstract of Presentation

Presentation Title:

Earthquake countermeasures technology of buildings

Abstract :

In the Southeast Asian countries, urbanization has been accelerated by the economic growth and the threat to the major earthquake in urban area is expanding. Also, because of the poor construction of residential houses in rural area, there is a risk of losing many lives by the collapse of houses caused by earthquake.

To confront the major earthquake of very low frequency, it is necessary to share the know-how of earthquake countermeasures and existing research resources such as experimental facilities among different countries.

Earthquake countermeasures technology of buildings can be divided into the following processes:

1) Seismic hazard assessment

It includes study of active faults, tsunami deposits, ground condition, analysis of historical earthquakes, conducting ground motion observations, etc., to evaluate the hazards of earthquake, tsunami, liquefaction and landslides, etc.

2) Seismic vulnerability assessment of existing buildings

It includes structural survey, computer analysis, structural testing, and shaking table test of existing buildings to reveal the structural weakness to the earthquake. Additionally, study of seismic design code, quality control and construction supervision are necessary to understand and improve construction system.

3) Development of technology to improve earthquake resistance of buildings

It includes dissemination of advanced seismic technology for buildings in urban area, such as adoption of new materials, seismic isolation and response control techniques. Also it includes seismic retrofitting of non-engineered houses in rural area and protection of historical heritage.

4) Education and improvement of awareness of disaster prevention

It includes training and education of building engineers through workshops and demonstration to disseminate seismic technology. Also, it may include activities such as evacuation drill against earthquake and tsunami for the public and school children to improve awareness of disaster prevention.