



## **Engineering Seminar: EERI - The Friedman Family Visiting Professionals Program**

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### ***“An Update on California’s Program to Seismically Strengthen Hospitals”***

***William T. Holmes***

***Principal and Structural Engineer, Rutherford and Chekene, San  
Francisco, CA, USA***

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#### **Abstract**

The State of California took over control of construction of new hospitals in the state in 1972 as a result of the 1971 San Fernando earthquake. At the time, there was concern about the performance of “pre-act” (pre 1972) hospitals but insufficient political will to do anything about it. At the request of the Seismic Safety Commission in 1986 the Hospital Building Safety Board (HBSB) drew up a plan to bring all California Hospitals into conformance with the 1972 Act in a 30 year period. After the 1994 Northridge earthquake, the State passed SB 1953 adopting many aspects of the HBSB plan. The regulations resulting from this law and many of the implementation issues will be described, including the use of HAZUS to estimate relative risk of the nonconforming buildings.

Very little of the retrofitting of existing hospitals that was expected as a result of the original regulations has occurred due to the high expense and disruption of construction work in hospitals. Instead, in many cases, new replacement hospitals have been constructed. One such facility, Mills Peninsula Hospital in Burlingame will be described. This hospital comprises 433,000 sq ft of space and contains 278 beds. The total project cost, including an adjacent Medical Office Building is \$580 million. It is located very near the San Andreas Fault and is base isolated.

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**DATE:** Wednesday, March 09, 2011

**TIME:** 2:00 P.M.

**LOCATION:** 140 KETTER HALL, NORTH CAMPUS, UNIVERSITY AT BUFFALO

**SPONSORED BY:** *Earthquake Engineering Research Institute (EERI)- Friedman Family Visiting Professionals Program*

**ORGANIZED BY:** *Student Chapter of EERI at UB, CSEE-GSA, MCEER and Dept. of CSEE*

***Snacks and Refreshments will be served !!!***



***William T. Holmes***  
***Principal and Structural Engineer, Rutherford and Chekene, San  
Francisco, CA, USA***

Mr. Holmes received his BS and MS from Stanford University and joined Rutherford and Chekene in 1965, where is now a Principal. Mr. Holmes has been responsible for the structural design or seismic retrofit of many buildings as well as being active in significant research and development in structural and seismic engineering. He has been active in the development of seismic codes and guidelines since he served on the SEAOC Seismology Committee in the mid-seventies and had a key role in the conceptual development of the *NEHRP Guidelines for the Seismic Rehabilitation of Buildings* (FEMA 273/356-ASCE 41). He also served as Chair of the Provision Update Committee, responsible for updating the *NEHRP Recommended Provisions for Seismic Regulations for New Buildings*, 1997 and 2000 editions and is currently Chair of the Building Seismic Safety Council's Board. He serves on the Board of the Consortium of Universities for Research in Earthquake Engineering (CUREE) and on the NEES Governance Board.

Mr. Holmes has traveled to Armenia, Azerbaijan, Canada, China, Ecuador, Greece, India, Italy, Japan, Mexico, New Zealand, Pakistan, Thailand, and Turkey to speak at conferences and workshops or to consult with local officials relating to seismic design and retrofit.

He is currently Chair of the Project Steering Committee on the FEMA-funded project, *Development of Next Generation Performance Based Design*, ATC 58, and serves on the Project Management Committee on several other ATC and BSSC research-to-practice projects.