

NCREE Tainan Laboratory Grand Opening Forum

*Seismic Retrofit and Repair of
Building Structures*

Chia-Ming Uang

University of California, San Diego

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Seismic Resilience

- New Construction
- Existing Building Structures

Taiwan

- Existing School Buildings
- Apartment Buildings



(1989 Chi-Chi Earthquake)

USA: New Construction

➤ 1994 Northridge Earthquake

SAC Joint Venture

➤ AISC Seismic Provisions for New Construction (Since 2005)

- Existing Systems (SMF, SCBF, EBF)
- Buckling-restrained Braced Frames
- Special Plate Shear Walls

} New
Systems

USA: Existing Buildings

- ASCE 41, “Seismic Evaluation and Retrofit of Existing Buildings” (2006, 2013)
 - Performance-Based
 - Based on Limited Test Data

Research on Existing Braced Frames

➤ Concentrically Braced Frames

UC Berkeley (Mahin)

Univ. of Washington (Roeder)

Univ. of Illinois (Fahnestock)

➤ EBF



Research on Existing SMF

- SMF (1988–1993)
 - SAC Study (FEMA 351)
 - Weak Panel Zone



Research on Existing SMF

➤ SMF (1960s)



SMF with Deep Columns

