Dr. Charles Thiel has over 30 years experience in earthquake engineering research and practice. He has been performing PML assessment since 1985.

Education

Ph.D. Engineering Sciences, Purdue University, 1970

Building Evaluations

Evaluation of the seismic vulnerability and estimation of probable maximum losses (PML) from earthquakes for over 1,000 buildings since 1997 with aggregate size approaching 50 million square feet. Chair of the California State University Seismic Review Board that oversees all University system construction activity. Peer reviewer for all construction at San Francisco, Sonoma, Humboldt, and Maritime Academy CSU campuses.

Standards Development

Charles Thiel; was Co-chairman of the Committee that developed ASTM E2026-99, the first technical standard for performance of seismic vulnerability evaluations, including PML analysis; principal editor for the standard. Chair of the Committee that developed the seismic retrofit and repair standards for existing buildings (Division III-R) for the California Building Code (Title 24) and for the seismic retrofit of acute care hospitals (SB 1957). Leader of the ATC-35 Ground Motion Initiative to develop the next generation representation of seismic ground motion for design and regulation applications. Member, Board of Directors and Preliminary Guidelines Committee, SAC Joint Venture that developed new standards for steel moment frame structures following the Northridge earthquake. Structural Engineers Association of Northern California representative for development of Blue Book, 5th, 6th and 7th editions. Past vice-Chair of Vision 2000 SEAOC Committee developing the next generation building code.

Earthquake Investigations

Principal technical advisor and Building Official for the recovery of the California State University Northridge campus from to the 1994 Northridge earthquake. Organizer of technical briefings and/or technical reports for 1994 Northridge, 1992 Landers, 1992 Mendocino, 1992 Erzincan, Turkey, 1989 Loma Prieta, 1989 Armenia, 1987 Whittier Narrows, 1986 San Salvador, 1985 Mexico City (3 volumes), 1985 Chile, 1984 Morgan Hill, and 1984 Bora Peak earthquakes.

Earthquake mitigation research

Principal developer of the Thiel-Zsutty Markov Model widely used as a standard procedure for estimating earthquake damageability of buildings. Consulting Professor of Structural Engineering at Stanford University. He was the founding head of the Federal National Earthquake Hazards Reduction Program.

Professional History

Telesis Engineers, 1997-date; Telesis Consultants, Principal, Piedmont, California, 1983-date; Stanford University, Consulting Professor of Structural Engineering, 1983-97; Forell/ Elsesser Engineers, Principal, San Francisco, 1984-6; Woodward-Clyde Consultants, Vice President, San Francisco, 1981-3: Federal Emergency Management Agency, Executive Office of the President, National Science Foundation, 1970-81.

Affiliations

Structural Engineers Association of Northern California; Earthquake Engineering Research Institute; Seismological Society of America; Institute for Seismology and Earthquake Engineering, Fellow; California Universities for Research in Earthquake Engineering; American Society of Civil Engineers; ASTM.

Publications

Over 150 publications including:

Thiel, C.C., and D. Rosidi, "Scenario Loss Earthquake Damageability Estimation," Proceedings, Los Angeles Tall Buildings Structural Design Council Conference, Tall Buildings for the 21st Century, May, 1998, pp. 100-113.

Thiel, C.C., and S.H. Hagen, "Economic Analysis of Earthquake Retrofit Options: An Application to Welded Steel Moment Frames," *Journal of the Structural Design of Tall Buildings*, Volume 7, 1997, pp. 1-19.

Thiel, C.C., "Probable Maximum Loss Estimation in Earthquakes; An Application to Welded Steel Moment Frames," *Journal of the Structural Design of Tall Buildings*, Vol. 6, pp. 183-207, 1997. Designated as the Outstanding 1997 Journal Paper by the Los Angeles Tall Buildings Structural Design Council.

Thiel, C.C., T.C. Zsutty, J. Martin, S. Nielsen, J. Hill, G. Brandow, N. Donovan, "Division III-R Seismic Retrofit And Repair of State Owned Buildings," proposed additions and commentary to the California Building Code, Title 24, Adopted by the California Building Standards Commission, May 22, 1997.

Thiel, C.C., T.C. Zsutty, "Earthquake Characteristics and Damage Statistics," *Earthquake Spectra*, Volume 3, No. 4, November 1987.