Joseph Penzien

JOSEPH PENZIEN

1924–2011

Elected in 1977

"Pioneering research on probabilistic methods in earthquake engineering, with emphasis on linear and nonlinear structural response analysis."

BY ANIL K. CHOPRA AND KARL S. PISTER

JOSEPH PENZIEN died on September 19, 2011, as a consequence of a fall at his home in Lafayette, California. He was born on November 27, 1924, on a farm near Philip, South Dakota. The family lived in a tarpaper shack with no running water and he attended a one-room school with sixteen classmates. The Great Depression of 1932, together with the drought that produced the Dust Bowl, prompted the family to move to a farm in Nampa, Idaho, where Joe helped his father and completed high school.

Aided by a series of fortuitous circumstances, he attended the University of Washington and received a BS in civil engineering in 1945. During the next two years he worked first for the Army Corps of Engineers and then as a lecturer at the University of Washington. He received a full scholarship at the Massachusetts Institute of Technology, where he earned his ScD in civil engineering in 1950—and married Jeanne Ellen Hunson. Their children are Robert Joseph, Karen Estelle, Donna Marie, and Charlene May.

He then joined Sandia Laboratory in Albuquerque, working on blast effects on structures, followed by similar work at

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Convair in Ft. Worth, Texas. In 1953 he joined the faculty of the Division of Civil Engineering and Irrigation in the Department of Engineering at the University of California, Berkeley as an assistant professor. Moving through the ranks he was promoted to professor in 1962 and retired in 1988. He moved to Taipei, Taiwan, with the consulting firm Eastern International Engineers, which he had started with local partners in the early 1980s. After a year there he returned to his home and with Wen S. Tseng launched International Civil Engineering Consultants, a Berkeley firm that he chaired until 2007.

Together with colleagues Ray Clough and Vitelmo Bertero, Joe developed the teaching and research programs in structural dynamics and earthquake engineering that many considered the best in the world. His scholarly contributions and engineering analysis and design expertise received international acclaim.

Among his many accomplishments we note the following. He developed perhaps the earliest course in random vibrations and their relevance to earthquake engineering, offered in civil engineering departments in the United States. As founding director of the Earthquake Engineering Research Center (EERC), his leadership was responsible for the rapid recognition of EERC as one of the foremost research centers in the world in earthquake engineering. With Dixon Rea he was responsible for designing and operating the first modern servo-controlled shaking table of significant size. The center attracted a stream of visitors from all over the world, especially from Japan. Joe's special rapport with Japanese earthquake engineers led to significant collaboration in research over three decades.

In addition to his impact on research, his book *Dynamics of Structures* (McGraw-Hill, 1975), coauthored with Ray Clough, was a landmark in terms of its broad scope, comprehensive coverage, and philosophy. It was translated into six languages and influenced several generations of students and engineers as well as subsequent textbook writers.

That his career as an engineering scholar and consulting engineer had a major impact is validated by his honors

and awards: he was a member of the National Academy of Engineering; fellow of the American Academy of Mechanics; honorary member of the Peruvian Association of Earthquake Engineering, US Earthquake Engineering Research Institute, Architectural Institute of Japan, American Society of Civil Engineers (ASCE), and International Association of Earthquake Engineering; and winner of ASCE's Nathan M. Newmark Medal (1983), Alfred M. Freudenthal Medal (1986), and Ernest F. Howard Award (2000); the California Earthquake Safety Foundation's Alfred E. Alquist Medal (1996); the Earthquake Engineering Research Institute's George W. Housner Medal (1993) and Distinguished Lecture Award (2000); the Silver Medal of Paris (1980); and the Berkeley Citation (1988). In 2008 he was recognized as a Legend of Earthquake Engineering during the 14th World Conference of Earthquake Engineering, in Beijing.

From a tarpaper shack near the badlands of South Dakota to an elegant home in Lafayette; from a one-room school to a high school student who did not have the funds for college to a doctoral degree at MIT in 2½ years; from a farming family of eight children whose father did not trust educated people to an eminent professorship at the University of California, Berkeley—Joe traveled a long, hard road with incredible success. As his colleagues we stand in grateful appreciation of his friendship, and of the gracious, kind, humble, and generous person that was Joseph Penzien.