



*G. A. Leonards*

## GERALD A. LEONARDS

*1921–1997*

BY MILTON E. HARR

GERALD A. “JERRY” LEONARDS, or “Gal” as he signed his memos, professor emeritus of civil engineering at Purdue University, died at 12:48 p.m. on February 1, 1997, of an apparent heart attack while playing tennis.

Professor Leonards was born on April 29, 1921, in Montreal, Quebec, Canada, of immigrant parents from Russia. He became an U.S. citizen in 1960. To earn extra money while in high school, among other jobs, as he liked to tell, he worked in his uncle's soda straw factory. He obtained his B.S. degree in civil engineering in 1943 at McGill University in Montreal, where he excelled both in academics and in athletics. Upon graduation (1943 to 1944), he began his career as a structural designer at G.L. Wiggs & Company in Montreal. He then served as chief of a survey party for the Canadian Department of Mines and Resources in Ottawa (1944 to 1945) and as soil engineer (1945 to 1946) for the Canadian Department of Transportation. In the winter of 1944 he also participated as a lecturer at McGill and presented his first formal instruction in soil mechanics. It was the beginning of an illustrious career.

On May 13, 1945, he married Beryl Freed in Montreal. Realizing the importance of the burgeoning field of soil mechanics and foundation engineering, Jerry and Beryl moved in 1946 to Lafayette, Indiana, where he joined the staff at Purdue University as an instructor and began work on graduate degrees with

Professor Ralph Fadum. Their two children, David and Helen, were born in Lafayette. He received the M.S. and Ph.D. degrees in civil engineering from Purdue in 1948 and 1952, respectively. His Ph.D. thesis was a seminal work on the strength of compacted clay, demonstrating the effects of the prior history of loading. Dr. Leonards was promoted to the rank of assistant professor in 1952, associate professor in 1955, and professor in 1958. He was head of the School of Civil Engineering from 1964 to 1968.

His lectures were inspiring and at the cutting edge of the profession. His depth of knowledge was phenomenal. His “Advanced Foundation Engineering” and “Applied Soil Mechanics” courses are considered classics by former Purdue graduate students, which number in the hundreds. The student body voted him “best civil engineering teacher” in 1976. The book *Foundation Engineering* that he edited was published by McGraw-Hill in 1962 and quickly became a standard reference worldwide. He was the author or coauthor of ninety-six professional papers that not only spanned geotechnical and foundation engineering but also contributed to other areas of civil engineering. Although he retired from teaching in 1991 when he was named professor emeritus, he continued to contribute significantly to the research program and the development of graduate students at Purdue.

Professor Leonards' research interests were wide and he made pioneering contributions to knowledge on strength and compressibility of compacted clay soils, analysis and design of shallow and deep foundations, strength and consolidation of natural deposits of soft clay, cracking of earth dams, frost action, flexible and rigid pavement design, analysis of buried conduits, pile foundations, stability of slopes and embankments on soft clays, stress-deformation and liquefaction of sand, and methodologies for investigating failures. He published extensively nationally and internationally. He was much sought after as a technical speaker and gave numerous invited lectures at conferences and institutions here and abroad. The listing would do Rand McNally proud. He was a member of the first USA-USSR Scientific Exchange Delegation in Soil Mechanics and Foundation Engineering in 1959.

Throughout his career, Jerry's insight and expertise were

sought on earthwork and foundation projects all over the world, a number of which involved the investigation of failures. He would often say, "We learn more from our failures than our successes." He was appointed as the only non-European to sit on an official government commission in Italy to investigate ways to stabilize the Tower of Pisa. Jerry was an active participant in the American Society of Civil Engineers (ASCE) (life fellow) and the Transportation Research Board. In 1980 he was honored by the ASCE by presenting the Terzaghi Lecture. In 1988 he was elected a member of the National Academy of Engineering, and in 1989, Dr. Leonards was honored by McGill University in Montreal where he became a doctor of science, *honoris causa*. He was also presented with the 1989 Terzaghi Award. Over his career he received numerous other awards from professional and technical societies, including the ASCE's highest award, the Norman Medal, which was awarded in 1965. He was a member of Phi Epsilon Alpha, Chi Epsilon, Tau Beta Pi, and Sigma Xi.

From the students' perspective, "Gal" was a dedicated professor and researcher. His geotechnical philosophy is summarized in "understanding the physics of the phenomenon." Students admired his engineering knowledge and intuition, and the depth and clarity of his concepts. He never missed an opportunity to learn more about his chosen field and to share with students his views on new developments.

In the fall of 1996 he was appointed an adjunct professor at the Georgia Institute of Technology and at the University of California, Berkeley, in addition to his work at Purdue, which at that time spanned more than fifty years. A Gerald and Beryl Leonards Graduate Fellowship in Geotechnical Engineering has been established in their honor at Purdue University.

Jerry Leonards was a charter member of the Greater Lafayette Press Club, a member of the American Contract Bridge League, a Kentucky Colonel, a member of Temple Israel, affiliated with the Sons of Abraham Synagogue, and an arbitrator for the American Arbitration Association. Jerry's other nonacademic interests included archeology, bridge, golf, and tennis.

Jerry's wife, Beryl, died in 1994. Surviving family are a son, David, and daughter, H.H., and four grandchildren. David

Leonards married Rebecca Jacobs of Evansville, Indiana. They live in Indianapolis with their three sons, Gerald, Brett, and Grant. Helen Leonards resides in Washington, D.C., with her son ZZ. On a personal note, I was Jerry's first Ph.D. He was my academic father. We shared forty-three magnificent years together at Purdue, generally with two coffee breaks and lunch, almost every day. Our discussions ran the gamut, from Monday quarterbacking to philosophy and, of course, liberal doses of soil mechanics. It is said the nature abhors a vacuum. The vacuum that Jerry's death left me will never be filled.

