

IN MEMORIAM

PHIL MOSS FERGUSON

Phil M. Ferguson, a leading pioneer in developing basic theory and design procedures for reinforced concrete structures and an outstanding civil engineering educator, died August 28, 1986, at age 86. Professor Ferguson was the Dean T. U. Taylor Professor Emeritus in Engineering at The University of Texas at Austin and had been actively teaching until his retirement in 1976. His distinguished scholarship and his leadership in development of an internationally recognized structural engineering program at The University of Texas at Austin were fittingly recognized when The University of Texas System Board of Regents named the large structural engineering research facility at the University's Balcones Research Center the "Phil M. Ferguson Structural Engineering Laboratory" in 1979.

Phil Moss Ferguson was born in Bartlett, Texas, on November 10, 1899. When he was about seven his father, a dentist, moved to Waco; he completed his elementary and secondary education in the Waco Public Schools, graduating in 1917. During the summer of 1917 he took a secretarial business course, and worked a year with the Gulf Refining Co. at their warehouse. In the fall of 1918 Phil rode the train from Waco to Austin and entered the College of Engineering. He received his Bachelor of Science in Civil Engineering in 1922 and a fifth year Civil Engineering degree in 1923. He enrolled for graduate studies at the University of Wisconsin, which was then one of the best known American centers of reinforced concrete higher studies. He received a Master of Science degree from Wisconsin in 1924. He joined the Dwight P. Robinson Co.

of New York as a structural engineer, where he was involved in design and construction of power plants, industrial buildings and high rise structures.

In the spring of 1928, Dean T. U. Taylor offered him a job as Associate Professor to replace a structural engineering professor who had resigned. Since his father had passed away several months earlier, Phil felt a family responsibility, so he accepted the offer and reported for duty in the fall of 1928. For over two decades after he joined The University of Texas faculty, Professor Ferguson devoted his energies largely to the teaching programs at what was then a predominantly undergraduate institution. He was promoted to Professor in 1939. He served as Chairman of the Civil Engineering Department from 1943 to 1957, and played a leading role in the establishment of the department's graduate engineering programs, supervising the first doctoral student in Civil Engineering at Texas. As Chairman, he recruited the faculty who were to become the leaders in developing a world-class civil engineering program at Texas. While Chairman, he still carried a heavy teaching load and personally supervised more than his share of the growing number of graduate students.

In contrast to many academic researchers, Phil Ferguson's personal research and writing career did not bloom until he was past his fiftieth birthday. In the late 1940's Professor Ferguson was introduced to the world of destructive testing of reinforced concrete structural elements such as beams, slabs and columns. He approached a testing machine with considerable hesitancy but with the aid of colleagues, he soon lost this temerity. He soon became one the nation's leading structural researchers with his ability to meld the behavior of structural elements with theory. He contributed much to

the technology of reinforced concrete design because he was a patient researcher looking for the truth in analyzing why members and systems failed.

Because of his tenacity, he was always conscious of the need to load enough test specimens to failure to enable his students, himself, and his colleagues to be certain of their conclusions. He was a strong advocate for clarity in the writing of reports and papers. His coauthors of many papers appreciated his writing skills and enjoyed his willingness to polish and complete the tasks they had undertaken. His first serious, original paper at the national level was published on three-dimensional structural analysis in 1950. This was followed by a number of papers exploring shear and diagonal tension in reinforced concrete which were recognized by the American Concrete Institute's prestigious Wason Medals in 1954 and 1958. Once unfettered, his research career rapidly developed and his writings became internationally acclaimed. Throughout this period he attracted a number of fine students to Austin and encouraged many of the junior faculty to seek doctoral degrees. Many of these students have gone on into leadership roles in structural engineering. His international stature as a leader in structural engineering research and his development of design procedures led to election to the National Academy of Engineering in 1973. His teaching ability was recognized by a General Dynamics Award for Teaching Excellence in 1962.

In developing a research program in structural engineering which won wide acceptance and backing from government, industry, foundation, and trade associations, he provided leadership in promptly translating research data into design practice. His keen sense of engineering design and construction practice developed as a practicing designer and nurtured by years of

consulting and technical committee work provided him a breadth of view which led to many of the significant breakthroughs in modern concrete research, especially in areas such as diagonal tension, torsion, slender columns, and reinforcement development.

Professor Ferguson's famous text Reinforced Concrete Fundamentals was published initially as the American Concrete Institute took the first step forward to allow ultimate strength design. It has been revised three times with the Fourth Edition being published in 1979. The Ferguson text is a digest of available research, design aids, and philosophy. Careful inclusion of a balanced and unbiased evaluation of current design procedures, comprehensive and forceful emphasis on fundamentals, and incessant urging that tradition give way to truth and logic justified his emphasis on ultimate strength procedures. The unusually wide acceptance of this work by the designer as well as the teacher stands as a lasting testimonial. His research writings were recognized three times by the American Concrete Institute's Wason Medal, a distinction accorded to only one other author in the Institute's history, and by the Raymond C. Reese Structural Award.

No professional service gave Professor Ferguson more satisfaction than his over 40 years of service as a member of the American Concrete Institute Building Code Committee. He was an extremely influential member of that committee which formulates the basic standards for design and construction of reinforced concrete structures in the United States as well as many foreign countries.

His energies devoted to professional and technical organizations culminated in his service as president at the national or state levels in

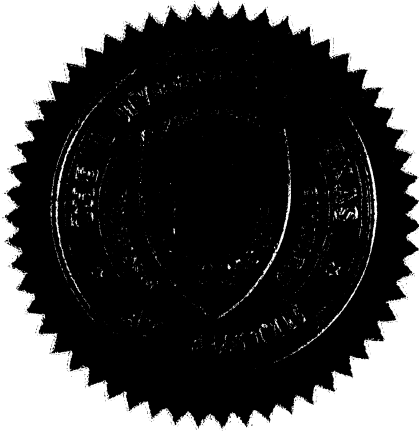
several important societies such as the American Concrete Institute, the American Society of Civil Engineers, and the Texas Society of Professional Engineers. He was named an Honorary Member of both the American Concrete Institute and the American Society of Civil Engineers in recognition of his long and distinguished service to those societies. Both The University of Texas and the University of Wisconsin recognized him as a distinguished graduate.

In 1976, Phil M. Ferguson was appointed Professor Emeritus at The University of Texas, signaling the end of 48 years on the active faculty. Even though no longer involved in the active teaching and research program, his involvement and service to the University continued through his counsel to the faculty and students and his involvement in professional and technical affairs until declining health forced him to move from Austin to be closer to his son, Yale H. Ferguson, a Rutgers faculty member. These last years immediately before his death were spent in close contact with his son Yale, a professor of political science at Rutgers, his daughter-in-law Kitty, and his three grandchildren--Colin, Duff, and Caitlin. Their loving support brought much comfort in his declining years.

Far beyond his many technical contributions, Phil Ferguson will be remembered for his spirit of uncompromising integrity, his dedication to the application of fundamental engineering principles, and his stimulation of young minds. A dedicated church member and a highly respected political conservative, Professor Ferguson was a faculty leader in questioning the right of the State of Texas to require affirmation of belief in a Supreme Being as a condition for University employment in the 50's. He championed the right of

individuals to differ in a pluralistic, constitutional society. A seemingly stern and demanding teacher, he inspired his students to strive for excellence but to never compromise their personal integrity or neglect their family and civic responsibilities. Professor Ferguson always devoted the last half hour of the last meeting of the semester in his class in reinforced concrete (composed almost entirely of senior students) to presenting a personal challenge to the new engineers, asking them to be "truly professional" as Civil Engineers in the community following graduation. He made it clear that this professional responsibility to the public was more important for them to understand than reinforced concrete theory, which the students already knew was supremely important after a rigorous semester's work. The emphasis to "giving something back" and "being involved with the community" as engineers left a lifelong impression, strongly reinforced by Professor Ferguson's example and the students deep respect for him.

Phil Moss Ferguson was a small, quiet, and gentle giant, who left behind him a totally changed approach to teaching, research, and graduate education in the two corners of his world which were dearest to him--his native Texas and the special world of reinforced concrete.



*William H. Cunningham*

William H. Cunningham, President of  
The University of Texas at Austin

*H. Paul Kelley*

H. Paul Kelley, Secretary  
The General Faculty

This Memorial Resolution was prepared by a special committee consisting of Professors John E. Breen (Chairman) Ned H. Burns, and J. Neils Thompson.