BSCES Honorary Members

The Society honors four members for their professional excellence, achievements and contributions.

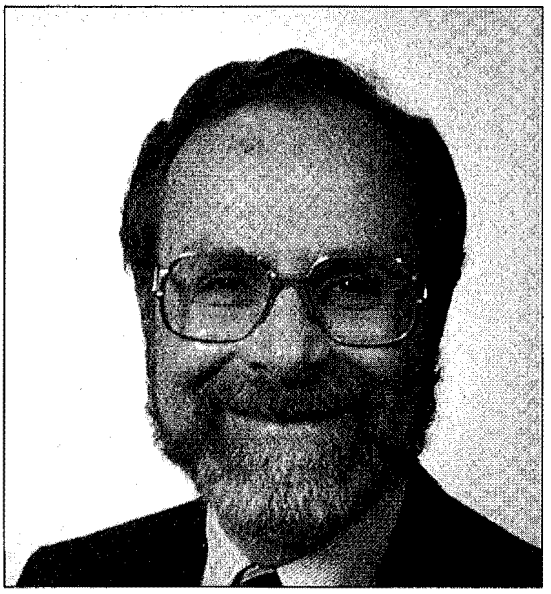
AT THE 1988 Annual Meeting of the Boston Society of Civil Engineers Section/ASCE (BSCES), the Society paid special recognition to four of its members — John T. Christian, William J. LeMessurier, Maurice A. Reidy, Jr., and Kentaro Tsutsumi — by making them Honorary Members. Honorary Membership is the Society's highest level of acknowledgement of its outstanding and distinguished members based on their contributions to BSCES, the engineering profession and society. Honorary Member status for these individuals was attained through a rigorous process of nomination by a BSCES committee, petition by its membership and election by the Board of Government. They join six other living Honorary Members — Harl P. Aldrich, Jr., John B. Babcock, Paul S. Crandall, Albert G.H. Dietz, Donald R.F. Harleman and John A. Volpe — to form a select group that comprises less than one-half of one percent of the Society's membership.

John T. Christian

A pioneer and leading authority in the use of computer methods in geotechnical engineering, John T. Christian has had extensive experience in foundation engineering, earth dam analysis and design, engineering mechanics and earthquake engineering. Dr. Christian's activities within the field of geotechnical engineering have spanned a wide spectrum of activities from preliminary design stage to the construction stage. He is a registered professional engineer in Massachusetts and Maine.

Dr. Christian received his B.S., M.S. and Ph.D. degrees in civil engineering from the Massachusetts Institute of Technology (MIT) in 1958, 1959 and 1966, respectively. After receiving his doctorate, he taught at MIT and also served as a private geotechnical consultant. His research and teaching were focused on such topics as the application of finite element methods to problems in geotechnical engineering, including consolidation, behavior of braced excavations, stability of slopes, inelastic soil deformations, earthquake problems and flow through soils. Other research topics included the field behavior of levees, development of computer-aided slope stability analysis and earthquake engineering.

After attaining the position of Associate Professor, Dr. Christian left teaching full-time at MIT in 1973 to become a consultant in the geotechnical division at Stone & Webster Engineering Co. Three years later he became Consulting Engineer and, finally, Senior Consulting Engineer in 1980. He is now the Manager of the Consulting Group at Stone & Webster. Dr.



John T. Christian

Christian has performed geotechnical and seismological work on nuclear power plants in a variety of locations. This work included probabilistic assessments of seismic hazard. He has also worked on offshore caissons, offshore mooring facilities, earth dams for storing fuel oil and water, offshore pipelines, underground rock openings, slope stability studies, highway embankments, oil field subsidence and foundation investigations for conventional buildings. Dr. Christian has performed seismological evaluations and analytical studies of earthquake effects including soil amplification, liquefaction and soil structure interaction.

In the computer field, Dr. Christian has developed finite element analysis programs for a number of applications. He has conducted studies of the flow of water through porous media, dams and other geological structures and has developed computer programs for performing the analyses and for presenting analysis results graphically. At Stone & Webster he has developed procedures for documenting computer programs and has implemented procedures for controlling the quality and accuracy of computerized calculations.

Well-versed in the interpretation of field data from soil instrumentation, he is co-editor of the book, *Numerical Methods in Geotechnical Engineering*. He authored more than 100 reports, papers and articles. A fellow of the American Society of Civil Engineers (ASCE), Dr. Christian is a member of the Technical Advisory Panel for the Seismic Research Group at the Electric Power Research Institute and of the Seismic Advisory Committee for the State Board of Building Regulations and Standards. He was also past Chairman of the Geotechnical Engineering Division of ASCE and past Chairman of the Computer Group of BSCES. He is a member of numerous professional organizations and committees. His contributions to engineering practice have been recognized by such awards as the Desmond Fitzgerald Medal from BSCES and Outstanding Correspondent Award from ASCE.

William J. LeMessurier

Trained first as an architect and then as an engineer, William J. LeMessurier has been devoted to generating professional understanding between engineers and architects throughout his career in teaching and in practice. He graduated in 1947 from Harvard with an A.B. in architecture and received his M.S. in civil engineering from MIT in 1953. A registered professional engineer in Massachusetts, the District of Columbia, New York, Tennessee and Colorado, William LeMessurier is founder and chairman of the board of LeMessurier Consultants. He has practiced structural engineering design in projects throughout the world. Major works of his were completed in Abu Dhabi, Bahrain, Egypt, France, Iran, Saudi Arabia and Singapore.

Throughout his career, William LeMessurier has been dedicated to extending engineering practice through structural innovation, constantly advancing the state of the art while paying special attention to the aesthetic aspects of structures. He is credited with several innovations in engineering. He developed the Mah-LeMessurier System, a pre-cast concrete high-rise housing system. While at MIT, Mr. LeMessurier conceived and developed the now widely used Staggered Truss System for high-rise steel structures. He also conceived, developed and applied the Tuned Mass Damper System to reduce tall building motion in the Citicorp Center, New York, and the John Hancock Building in Boston.

In recent years, he has centered on the problems posed by tall and very slender structures, tackling the effects of bending, shear and vibration. His solution to these problems is a system that possesses vertical continuity in a continuous partition at the furthest points from the horizontal center. To him, the chimney form represents the perfect super-tall structure, thinking of a skyscraper as a beam cantilevered from the earth. For LeMessurier, the chimney form is opened by transforming the wall into columns stabilized by a lattice of cross-braces or rigidly joined frames. In his design philosophy, a design is finished when there is nothing to change via adding elements or subtracting them.

William LeMessurier has been involved in the structural engineering design of such projects as the new Boston City Hall, Shawmut Bank of Boston, First National Bank of Boston, Federal Reserve Bank of Boston, Citicorp Center in New York, the National Air and Space Museum in Washington and the Ralston Purina Headquarters in St. Louis. He has taught at MIT and Harvard University Graduate School of Design where he continues as adjunct professor. He has also served as visiting lecturer at a number of institutions including Yale University, the University of Michigan, Cornell, Northeastern and the University of California at Berkeley. LeMessurier has co-authored sections of the *Structural Engineering Handbook.* A member of many professional societies including ASCE and AISC, he has received many awards throughout his career. Among them are *Engineering News-Record* awards for professional service, many Awards of Excellence and a Special Award from AISC, and the American Institute of Architects' Allied Professions Medal. He was elected to the National Academy of Engineering in 1978, and was made honorary member of the Boston Society of Architects in 1985 and honorary member of the American Institute of Architects in 1988.

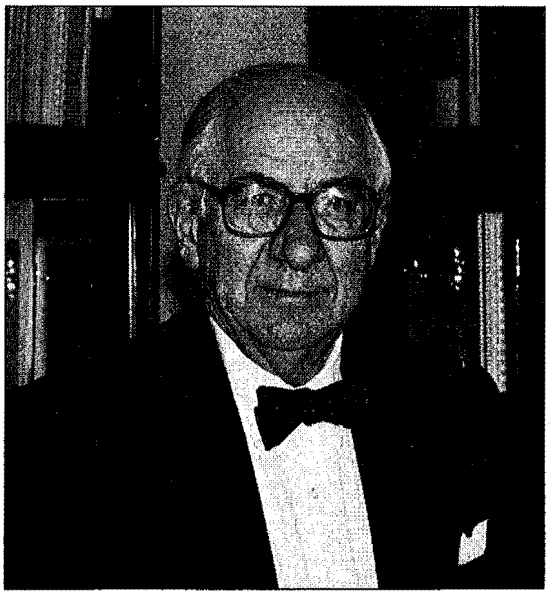
William J. LeMessurier

Maurice A. Reidy, Jr.

Over the course of his 47-year professional career, Maurice A. Reidy, Jr., has applied soil and structural engineering principles to the field of structural and foundation design and, in later years, to problems of structural damage and failures. After earning a B.S. and M.S. in civil engineering from Harvard in 1940 and 1941, respectively, where he studied under Drs. Arthur Casagrande and Karl Terzaghi, he began his career as a soils and foundation engineer with Frederick R. Harris, Inc., in New York, working on the design and construction of Navy drydocks. From 1943 to 1946 he was an aerodynamicist for the Republic Aircraft Corporation, becoming responsible for design air loads on all components of aircraft.

In 1946, he joined the structural and foundation consulting firm of Maurice A. Reidy Engineers, founded by his father in 1924. He was involved in design of a number of well-known buildings in Boston including the Jordan Marsh Main Store, major additions to Filene's, St. Anthony Shrine, the Harvard Graduate Commons and Aldrich Hall at the Harvard Business School. An unpublished report written by Reidy on the snowdrift loads on the Jordan Marsh Squantum Facility roof in the 1978 blizzard is cited frequently in the literature on drift loads.

In the early 1950s, he received attention for demonstrating that design error was responsible for the collapse of the Sullivan Square overpass. As an expert witness, Reidy has earned a reputation for fairness and resourcefulness in a wide range of litigations relating to



Maurice A. Reidy, Jr.

structural failures. In the most noted of these cases, Reidy represented Trinity Church in its successful suit against the John Hancock Insurance Co. for damage to the church caused by construction of the neighboring Hancock Tower. For this case he developed, in 1984, the "takedown theory," a new method for assessing the value of partial damage caused by some disturbance to a masonry building, where reconstruction is not warranted or not feasible. The theory compares the curvature or angular distortion existing in the building before and after the disturbance, each expressed as a percentage of some larger, hypothetical degree of angular distortion, the "takedown" condition, at which the building is so pervasively damaged that, by consensus, it must be taken down. The dollar value of the damage increment is the increase in that percentage times the cost of takedown and reconstruction. This theory withstood appeal to the Massachusetts State Supreme Judicial Court.

Reidy has been involved in structural rehabilitation of several important historical buildings. Among these are the Old Corner Bookstore, the Old South Meeting House and the Old North Church in Boston.

He has been in charge of Maurice A. Reidy Engineers since 1961. A registered professional engineer in Massachusetts, New York, Connecticut, the District of Columbia, New Hampshire, New Jersey and Oregon, he is a Fellow in ASCE and has served as chairman of BSCE/ASCE Sections Structural Group. He has also served on the BSCES Seismic Advisory Committee, Massachusetts State Board of Building Regulations and Standards, and as president of the Boston Association of Structural Engineers.

Kentaro Tsutsumi

A professional engineer, teacher and inventor for more than 50 years, Kentaro Tsutsumi is a nationally recognized authority on isolating and stabilizing vibration. With his teaching deeply rooted in professional experience, Prof. Tsutsumi has taught students from all over the world and even the children of his students over his long career, instilling in them his clear sense of design and precision about the art of engineering.

Born in Hawaii, Prof. Tsutsumi received his B.S. in civil engineering from the University of Hawaii in 1936 and an M.S. in civil engineering from MIT in 1938. His contributions to engineering education started in 1939 when he taught structural analysis and design courses for the Massachusetts Dept. of Education, Division of University Extension. Prof. Tsutsumi also had teaching appointments at Northeastern University and for the Tufts University Engineering Science Management War Training Course during World War II. He returned to Tufts in 1963 as Associate Professor of Civil Engineering and was promoted to Professor in 1966.

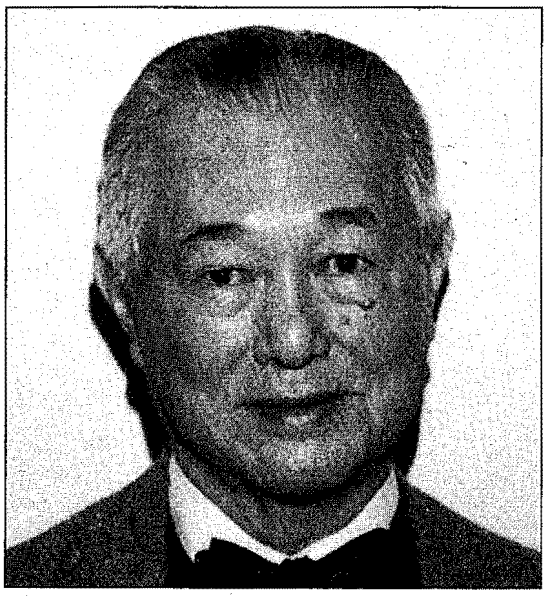
Demonstrating the breadth of Prof. Tsutsumi's vision as a teacher, he taught an analog computer course for engineers and scientists at Tufts in 1965. This course was the first of its kind in New England. Later on, in 1981, he introduced personal computers in the undergraduate engineering laboratory. Prof. Tsutsumi also incorporates the writings of the 12th century Persian poet and scientist, Omar Khayyam, into his classes. Another topic he has introduced is the analysis of a Picasso painting in structural engineering terms.

His professional career ranges from the design of buildings and bridges, foundation design and hydraulic design to the design of a

stable test platform for the calibration of inertial guidance systems. Holder of two patents, Prof. Tsutsumi worked on the design of several Boston Edison buildings in the 1940s and along with LeRoy Hersum, a consultant he knew from MIT, he helped rebuild Massachusetts bridges, and other structures, damaged or destroyed by the hurricane of 1938.

His longstanding consultant career includes work for MIT's Draper Laboratory, Jackson & Moreland, NASA, Raytheon and Itek. His expertise in vibration isolation and instrumentation has been evidenced in his work for Draper Labs. He has designed such test equipment as gyro test foundations, optical equipment test foundations, elastic limit testers, radial force testers, axial force testers, centrifuges, gimbal systems and vibrator for centrifuges, and shock and vibration isolation analyses for components. His "Type T" (named after him) isolation pier that utilizes ordinary building materials isolates movements to a millionth of an inch. In 1964, he invented an instrument testing platform that is not affected by the random tilting of the earth. And in 1944 he designed a 634-foot wind tunnel that generated winds up to 600 mph and which he recently refined to generate supersonic wind speeds.

Prof. Tsutsumi retired from Tufts in 1986. He is currently the chairman of the Massachusetts State Board of Building Regulations and Standards and serves on the Mayor's Advisory Board of Public Buildings for the City of Newton. He is involved with a number of professional organizations including ASCE, the American Institute of Steel Construction (AISC), the Society for Experimental Stress Analysis, the American Institute of Aeronautics and Astronautics, American Geophysical Union and the Seismological Institute of America. Author of many papers and articles, Prof. Tsutsumi has been awarded the Tufts Service Citation and AISC's Special Citation Award for Exceptional Professional Achievement.



Kentaro Tsutsumi