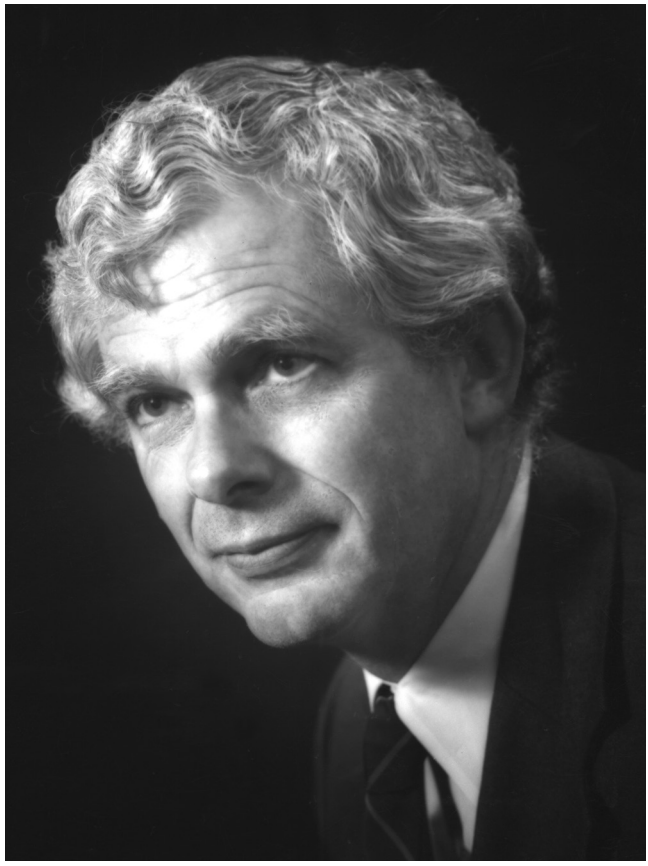

ALAN G. DAVENPORT

1932–2009

Elected in 1987

"For pioneering contributions to the design of wind-sensitive structures, description of the urban wind climate, and wind tunnel testing of structures."

BY LESLIE EARL ROBERTSON

ALAN G. DAVENPORT, founder of the Alan G. Davenport Wind Engineering Group of the Boundary Layer Wind Tunnel Laboratory, located at the University of Western Ontario, and the inspiring genius of the broad field of wind engineering, died from complications of Parkinson's disease on July 19, 2009. He was 76.

As I set out to accomplish this writing, I knew that, no matter what flowed onto the paper, it would not be possible for me to do service to this remarkable man. Both as a fellow engineer and a friend, Alan Davenport was a very special person.

Alan was elected a foreign associate to the National Academy of Engineering in 1987. Initiated by his leadership role in wind engineering for the twin towers of the World Trade Center, Alan guided the field of wind engineering into extraordinary forward strides. His interests and his contributions, being always ahead of the rest of us, varied from the dynamic response of buildings and bridges in turbulent wind to the possible wind-induced destruction of whole countries in the Caribbean and on to such fields as the movement of sand in the desert. There was no limit to his interest in and his contributions to

the effects of wind on the built and the nonbuilt environments. In short, throughout his life, Dr. Davenport was the guiding light in the field of wind engineering and its many associated disciplines.

Let us look back at the origins of this extraordinary engineer.

Alan was born in Chennai (Madras), India, to a family of tea farmers. His early education was in South Africa, where his talents in mathematics and science began to unfold. Then it was on to Cambridge University, where he completed both a B.A. and an M.A. in mechanical sciences. Following his love of aviation and a brief stint as a pilot in the Canadian Navy, Alan responded to his love of engineering by completing an M.A.Sc. in civil engineering at the University of Toronto.

Ms. Sheila Rand Smith—brilliant, witty, and a fellow student—became Alan's bride in 1957. They were to have four delightful children: Thomas, Andrew, Anna, and Clare. Before the children, Alan and Sheila had returned to the United Kingdom, where in 1961 he earned his Ph.D. in civil engineering from the University of Bristol. Both encouraged by Sheila and sensing the excitement and freedom of thought to be found in Canada, Alan accepted a position as associate professor at the University of Western Ontario, where, but for his brief stint in New York with us, he was to spend the remainder of his career.

In 1963 Alan became the lead wind engineering consultant for the twin towers of the World Trade Center, in New York City. At that moment in time, the rational wind engineering design of tall buildings was yet to be born. The World Trade Center was the first tall building to be tested and analyzed in the realistic environment of turbulent wind. Further, unlike the tall buildings of the past, the World Trade Center was the first that did not incorporate the stiffening and damping associated with in-filled masonry. Accordingly, unlike with all other tall buildings of that era, our design could not rely for guidance on prior experience. Indeed, Alan's work on this project provided an extraordinary step forward in the field of wind engineering. Combining the lack of prior experience in

wind engineering with our new structural system required a unique combination of technical expertise, vision, genius, and communication skills. Alan was uniquely qualified to bring forth all four of these capabilities.

Standing on the shoulders of his incredible achievements with the wind engineering design of the World Trade Center, Alan convinced the University of Western Ontario that on-campus construction of a boundary layer wind tunnel would lead to significant developments in the rational design of buildings and structures and of the environments around them. The construction of the first wind tunnel led to the construction of a second. Driven by his genius, these facilities developed countless advancements in the broad field of wind engineering.

But wind tunnels alone do not create these advances. It was the brilliance and the personal skills of Alan Davenport that attracted the most talented men and women in the field to move to London, Ontario, to work with him.

Now, as you walk through these facilities, you will find memories of the past and of the present—models of some of the most famous buildings and bridges of our time. Beyond the World Trade Center, you will find the Willis (Sears) Tower of Chicago, Hong Kong's Bank of China Tower, Toronto's CN Tower, the Shanghai World Financial Center, and the fabric roof of Jeddah's Hajj Terminal—and the list goes on and on. I am told that nearly 100 bridges have been tested in Alan's laboratory—bridges being one of Alan's great loves.

Beyond the wind tunnel testing and the analyses of these wonderful structures, Alan's interests and contributions were nearly endless. He pioneered the development of Canada's first statistically based seismic zoning map, he served as chair of the AISC's Task Committee on Wind Forces, he was director of the Institute for Catastrophic Loss Reduction, and he served on countless committees in Canada, the United States, and elsewhere.

Alan was founding editor of the *Canadian Journal of Civil Engineering* and was on the editorial board of six other journals. He received honorary degrees from the Technical University

of Denmark, McGill University, the University of Toronto, and the University of Western Ontario—and perhaps a half-dozen others, equally as prestigious.

A partial listing of his honors and medals is given here: the Duggan Medal and Prize, the Gzowski Medal from the Engineering Institute of Canada, the Alfred Nobel Prize from the six founding engineering societies of the United States, the Gold Medal of the Institution of Structural Engineers, and many others. In 2002, Professor Davenport received Canada's most prestigious honor for lifetime achievement when he was appointed a member of the Order of Canada.

While Professor Davenport published over 200 significant papers, his trend-setting paper, "The Application of Statistical Concepts to the Wind Loading of Structures" (*ICE Proceedings*, 1961) has continued to impact the manner in which both tall and short buildings and bridges are analyzed and designed.

A soon-to-be published book on Alan's life, authored by Ms. Siobhan Roberts, and carrying his one-on-one discussions with her, has a working title of *In the Wind: Alan G. Davenport and the Art and Science of Wind Engineering.*

His widow Sheila remembers that:

> As a small boy Alan loved to create model airplanes. It was his interest in flight which was to eventually lead to his interest in wind and wind on structures. Sailing also always held an attraction for him and windsurfing was a favorite sport. He carried his interest in structures into family life. There are memories of picnics inevitably located under or near bridges so he could photograph the structures from the best vantage points.
>
> He encouraged his family to be adventurous. Always creative, with a whimsical sense of humor, he was adored by his family and his nine grandchildren.

But, in returning to the man, the father, the genius, the inventor, the theoretician, the innovator, the professor, we find a person who left a wave of inspirations that exceeds by far the ripple created by most of us. There is no room in this brief work to give proper weight to the nature of our friendship, the

depths of my admiration for him, or the realistic and enormous contributions of his life to the built environments and to those who live and work in them. Alan Davenport's warmth, his modesty, and his good humor will be sorely missed.

Mr. Davenport is survived by his wife, the former Sheila Rand Smith; his sons Thomas and Andrew; his daughters Anna and Clare Davenport; and nine grandchildren.