

# Obituary

**Leslie Earl Robertson, 1928–2021**

P.E., C.E., S.E., D.Sc., D.Eng., NAE, Dist. M.ASCE, AIJ, JSCA, AGIR, FIStructE



Few people have had as much influence on their industry as Leslie Earl Robertson did on structural engineering and architecture. In a career that spanned over 60 years, he led the design of many renowned buildings and expanded the possibilities of both disciplines.

Les Robertson was a California-born high school dropout who lied about his age to join the US Navy near the end of World War II. After his discharge from the service, he attended the University of California at Berkeley on the GI Bill. He graduated in 1952 with a Bachelor of Science degree.

His first job was as a mathematician in the electrical engineering department of an Oakland, California firm, Kaiser Engineers. Before too long, he was helping in the firm's structural engineering department where, under the guidance of the chief engineer, he learned the basics of what would become his passion, structural engineering.

The nights and weekends he spent teaching himself concepts such as slope deflection and the Hardy Cross method led to the deep understanding of the fundamentals of structural engineering that would become his hallmark. His mentor showed him graphical methods of structural engineering that captivated his imagination.

He worked in a succession of different practices and eventually led Leslie E.

Robertson Associates. Actively working on projects into his 90s, he was recently affiliated with the Robert Bird Group.

Although Les was never in combat, the deaths in WWII of those he knew led him to become first a pacifist and then an activist-pacifist. He was active in anti-war, civil rights, climate change, women's rights and other issues. Attending protests often resulted in arrests, which he downplayed as a ride to the police station followed by paperwork and release.

His projects circle the globe. The list includes the IBM Building, Pittsburgh; the IBM Building, Seattle; the Federal Reserve Bank, Minneapolis; the AT&T Headquarters, New York; the Bank of China, Hong Kong; the Puerta de Europa, Madrid; the Miho Museum Bridge, Shigaraki; the International Finance Centre, Hong Kong; the Shanghai World Financial Center, Shanghai; the Lotte World Tower, Seoul; and the Merdeka PNB118, Kuala Lumpur, which will be the world's second-tallest building when it opens in 2022.

Les was in his 30s when he started leading the design of tall buildings. He noted that it was a time of young engineers (Bill LeMessurier was two years older and Fazlur Khan was one year younger). The Great Depression and WWII had created a hiatus in tall building design and these young engineers were looking at structural issues from a fresh point of view. With clear thinking and the aid of early computers, they created structural concepts and systems that are used to this day.

A structural designer with strong opinions but a winning personality, Les had repeated collaborations with world-class architects such as Minoru

Yamasaki, Gunnar Birkerts, Philip Johnson, I.M. Pei, and William Pedersen.

The project that dominated much of his life was the World Trade Center, New York. The twin towers were the two tallest buildings in the world when they were completed in 1972 and 1973. Les was only 35 years old when he moved from Seattle to New York to lead the project for his firm Skilling, Helle, Christiansen, Robertson, and he spent more than a decade on the design and construction.

After surviving a truck bombing in 1993, the two towers collapsed on 11 September 2001, after each had been hit by a fuel-laden Boeing 767. The buildings survived the initial impacts but collapsed in the resulting fires. Although he wrote, 'My sense of grief and my belief that I could have done better continue to haunt me,' the tall building engineering community recognised that what brought down the towers was an attack of exceptional destructiveness, not a deficiency of engineering.

Les Robertson was highly respected by the structural engineers with whom he competed for projects around the world. Most viewed him as an inspiration and mentor. With generosity, he would share his thoughts and experiences on issues that ranged from technical to ethical. Many looked forward to his annual holiday card in which he and his wife, to whom he was devoted, would recount the events of the past year along with a few comments about politics and society.

In recent years, Les recorded his thoughts and work in the book, *The Structure of Design: An Engineer's Extraordinary Life in Architecture* and the documentary film, 'Leaning Out: An Intimate Look at Twin Towers Engineer, Leslie E. Robertson'.

Les Robertson was awarded the IStructE Gold Medal in 2004. He was the first American to be so honoured since Nathan Newmark, 25 years earlier.

Les is survived by his wife and collaborator, the prominent structural engineer SawTeen See FIStructE; children Chris Robertson, Sharon Robertson and Karla Mei Robertson; and grandchildren. Another daughter, Jeanne Robertson, died in 2015.

William F. Baker

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