

Engineering Heritage Australia

National Engineering Oral History Program

Biographical Notes

Charles Thomas James BUBB (1928 -) Structural Engineer

- Birth & Family:** Born 16 March 1928, Perth, Western Australia.
His father's family migrated to Australia from England and established a family bakery business, the 'Bubb Brothers British Bakery'. His mother's family migrated from Ireland. Both sides of his family had strong public service values which influenced Charles throughout his career.
- Education:** Attended Primary School at Sisters of Mercy Convent and High School with the Christian Brothers. Charles completed his leaving certificate at the young age of 15 and at the same time qualified for the public service. He worked for a time within the public service as a clerk in social services in Perth. Charles completed his university studies (Bachelor of Engineering) at the University of Western Australia in 1950 (a five year course, including work experience). Throughout his career, he undertook several advanced courses of study, including Critical Path part-time at UCLA, California, USA and a Diploma in Engineering Seismology of the Imperial College of Science and Technology, London via a Commonwealth Public Service Board Scholarship.
- Qualifications:** B.E., D. I.C. (Eng. Seis), M. I. E. Aust.
- Memberships:** Fellow of the Institution of Engineers, Australia and Emeritus Member of the Civil College
Life Member of Australian Earthquake Engineer Society
- Awards:** Commonwealth Public Service Board Scholarship

Work History:

Work experience while studying at university included training at BHP, Port Kembla, New South Wales and other engineering work experience for the Public Works Department of Western Australia. Upon completion of university studies in 1950, Charles applied to the Tasmanian Hydro Electric Commission and the Snowy Mountains Hydro Scheme. As Tasmania was the first to reply, Charles took up a position with them as Assistant Engineer, first on the construction site, later in the design office. From June 1954 until July 1955 Charles worked for the Commonwealth Department of Works, New Guinea Regional Office, as an Engineer Grade 3. He was repatriated to Australia following an illness and in September 1955 was assigned as a Temporary Engineer in the Department of Works (Comm. Works) Victoria/Tasmania region.

In January 1956 he resigned from the Commonwealth Government to work at the Melbourne City Council within their Building Surveyors Department and gained valuable experience outside the federal sphere. Charles was approached to return to the Department (Comm. Works) in August 1957 as Temporary Senior Engineer (Structural). Soon afterwards he became a permanent staff member and held various positions in the early 1960s within the Department: Engineer Grade 3, Design Section, Engineer, Class 3, Engineering Design Section.

In 1962/1963, while designated as Engineer Class 4, Structural Design Section, Charles was seconded to the US Navy as Departmental Senior Officer to work on the North West Cape Project, WA (Very Low Frequency) in Los Angeles, California. During his time in the United States Charles undertook a university course in Critical Path Scheduling, also known as PERT (Program Evaluation and Review Technique) at UCLA (University of California, Los Angeles) and upon his return to Australia adapted this technique for the Commonwealth Department of Works, in particular, for engineering projects such as Tullamarine and Mascot Airports.

Prior to his appointment as Principal Engineer (Buildings), Engineer Class 5 within the Structural Section of Comm. Works in 1971, Charles was awarded a Commonwealth Public Service Board Scholarship to study Engineering Seismology (Earthquake Engineering) at the Imperial College, London. He chose earthquake engineering based on his experience so far within the Department and the necessity for these skills to be developed within Australia. Charles chose the Imperial College course based on the expertise of Professor N. N. Ambraseys, as well as his own assessment of the need to investigate a more European point of view in relation to earthquake engineering, soil mechanics and plate tectonics, all of which was a specialty of this College and its senior lecturers.

From December 1971 until July 1976, Charles held various positions within the Department and at times acted in more senior departmental roles. These included Acting Chief Structural Engineering - Acting Assistant Secretary (Structural) until his

appointment as Chief Structural Engineer - Assistant Secretary (Structural) in March 1978. One year later he was appointed First Assistant Secretary – Director of Engineering in 1979. By this point in time, the Head Office had moved from Melbourne to Canberra.

Not long after his move to Canberra in 1978, Charles was sent on a special assignment to Sri Lanka to assess the damage done by a major cyclone. The Department's help was sought by the Sri Lankan Government due to the work conducted in the aftermath of Cyclone Tracy in 1974. He provided the Sri Lankan Government with a comprehensive report and a series of recommendations which included training programs and a building manual.

After this assignment Charles was appointed as the Director of Engineering - First Assistant Secretary, the post he held until his retirement from the Department in 1987 providing an invaluable thirty years of service.

Throughout the course of his career Charles was closely involved with Australian standards and codes. He was instrumental in the establishment of the first Australian Earthquake Code AS2121 (published in 1979) and wrote the commentary for it. By 1979 he was Chairman of the Code Committee. He attended numerous world conferences focusing on earthquake engineering and has published papers on the topic, including an excellent summary of Australia's earthquake engineering history presented as a keynote address to the Australian Earthquake Engineering Society in Perth in November 1998 (published in the Bulletin of the New Zealand Society for Earthquake Engineering, Volume 32, No 1 March 1999). Post retirement Charles remained active in the setting of Australian standards and codes and was the Chairman of the Committee which produced the Australian Wind Loading Standard, AS1170.2 from 1989 to 1991. Charles was also the inaugural president of the Australian Earthquake Engineering Society from 1990 to 1995 and was recently appointed as the Society's first Honorary Life Member.

Major Projects and responsibilities not outlined above:

- Reserve Bank Buildings around Australia
- Major telephone and communication exchanges around Australia
- New Parliament House Competition Engineering Analysis (Canberra)
- Black Mountain Tower wind loading analysis (Canberra)
- National Animal Health Laboratory (Geelong)
- Omega Navigation Facility (East Sale)
- Reconstruction - Darwin following Cyclone Tracy (Darwin)
- Second Hobart Bridge

In retirement, since 1987, Charles has been actively involved in committee work for Standards Australia, the Australian Engineering Earthquake Society and the Institution of Engineers, in particular, their Legal Liability and Professional Indemnity Standing Committee.

In his chosen field of engineering, Charles is a thinker and a visionary. As a public servant within the Commonwealth Department of Works (also known as Department of Housing and Construction plus several other name changes over the life of this Department) Charles was keenly interested in the management aspect of engineering, developing talented multi-disciplinary teamwork and at all times using one's ability to 'form professional judgements'.