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Obituary: Peter Fraenkel 1915–2009

In a career in civil engineering spanning over 60 years Peter Fraenkel, who died in November 2009, made significant contributions to the profession in the fields of structures, ports, highways and bridges. He began his association with the Institution of Civil Engineers (ICE) in 1937 as a student member, was elected associate member (now member) in 1945 and transferred to member grade (now fellow) in 1954. Having risen to become a partner in a major firm of consulting engineers he left to set up his own partnership and achieved success and international recognition in a short space of time, with his firm undertaking many projects worldwide.

Peter Fraenkel was born in Breslau, Germany – now Wroclaw in Poland in 1915 and came to London in 1931 when aged 16. After completing his schooling and learning English in the process he studied civil engineering at Imperial College. On graduating in 1937 he joined the well-respected contracting firm of Christiani & Nielsen and worked under agreement and then as Assistant Engineer on the design and construction of a wide range of projects. During the Second World War, after a period in the army, he was garrison engineer responsible for construction of army facilities in Northumberland.

Fraenkel joined consulting engineers Rendel Palmer and Tritton (RPT) in 1945. He was resident engineer on the ore unloading terminal at Tyne Dock and then worked in the firm's head office in London, becoming a partner in 1961 and senior partner of Rendel & Partners in Australia in 1969. While with RPT he was co-author of two medal-winning papers in the *ICE Proceedings*: 'Special features of the civil engineering works at Aberthaw Power Station' (Fraenkel, 1962), for which the Telford Gold medal was awarded, and 'Port Talbot Harbour, planning and design' (Fraenkel, 1970), for which he received the James Watt Medal. Both of these papers were highly praised by his peers in the Institution and the papers and subsequent discussion on them make interesting and informative reading to this day.

In 1972 he took the bold step of leaving RPT to set up his own consultancy in the name of Peter Fraenkel & Partners (PFP). Early projects included flood barriers on the River Thames at Tilbury Docks and Royal Docks and the tanker jetties and other marine facilities at the Sullom Voe oil terminal in Shetland, which was opened by the Queen in 1980. At this time the firm also undertook a comprehensive study for the UK Department of Environment into the maintenance and operational needs of the 3100 km of rivers and canals owned by British Waterways (the Fraenkel report; Fraenkel and Partners, 1975), which set the scene for many of the improvements and new developments of the canal system that have come to fruition in recent years. The firm expanded rapidly as Fraenkel gathered together a team of partners and senior engineers with wide experience of civil engineering works. Major overseas projects in the 1970s and 1980s included the Thai Navy dockyard at Pom Prachul, near Bangkok and the Tolo highway in the New Territories of Hong Kong which was, at that time, the largest single highway scheme undertaken in the territory. New highways were also designed in Sabah, East Malaysia for World Bank-financed projects involving over 200 km of trunk roads in heavily forested areas and mountainous terrain and including major bridges on the Kinabatagan and Segama rivers.

One of the most prestigious projects undertaken was the design and construction supervision of the 450 m span Rama IX Bridge across the Chao Phya River in Bangkok, an elegant high-level, cable-stayed bridge forming part of the expressway system in the city. PFP led an international consortium of consultants for this project, the main span of the bridge being designed by Helmut Homberg of Germany, who had been responsible for the design of around half of the cable-stayed bridges built in the world up to that time.

Fraenkel's company was also heavily involved in the design and supervision of motorway and trunk road schemes throughout England, although the government's curtailment of the national roads programme in the 1990s saw a refocusing of the firm's activities back to marine civil and coastal engineering. Port work had always been one of his main engineering interests and the sphere in which his firm is probably best known. He had a long-standing connection with the International Association of Ports and Harbours (IAPH) and was involved in IAPH technical committee activity and a number of IAPH publications. He was vice-chair of the engineering sub-committee on port and ship safety, environment and construction, preparing draft guidelines in 1987 and finalising the publication of the guidelines in 1991. Perhaps his best known contributions, however, were in vessel approach channel design, chairing the joint Pianc/IAPH working group which published preliminary guidelines for approach channels in 1995 and the definitive *Approach Channels – A Guide for Design* in (Pianc and IAPH, 1997).

Peter Fraenkel continued to work as senior partner and chairman of the Fraenkel Group well into his eighties. Throughout a long and remarkable career in civil engineering he and his company were responsible for many visible and lasting works. He combined exceptional engineering ability with good judgement as a consulting engineer. He was exacting in the standards he set and he imbued the staff of the company with a

desire to emulate those standards. His achievement in developing an international engineering consultancy company from scratch was recognised with a Queens Award for Industry in 1982. He was elected a fellow of the Royal Academy of Engineering and was undoubtedly one of the outstanding civil engineers of the postwar period.

PETER MARTIN

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