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Frank Davidson, a Member of the ISR Editorial Board, began his life as a lawyer, following his New York family's tradition, but stepped aside from the straight and narrow legal path and has devoted himself ever since to 'macro-engineering', a conceptual breakthrough which he pioneered, taught at MIT, published in books and journals, contradicting often current economic theories. In 1957 he founded the Channel Tunnel Study Group which some time later led directly to its construction. *Courtesy F. D.*

In the end paragraphs of my Editorial Contributions to ISR, I pleaded frequently for 'Interdisciplinary Wisdom' as neither scientists, engineers, nor politicians alone were able to solve the great problems facing mankind at the end of the 20th century. In his Editorial Comment on "Macro-Engineering" Professor Frank Davidson of the Massachusetts Institute of Technology, strongly supported my philosophy and wrote one of the most cogently argued presentations for the need of interdisciplinary co-operation between engineers and politicians. He sub-titled his Comment "Advice to Heads of Government: The Institutional and Intellectual Gap" and began with the words "Perhaps a few blunt remarks are in order". I published it in June 1984.

Taking as an example the continental water shortage—which the worlds seems determined to ignore—he argued that it could not be dealt with on a short-term, stop-and-go basis according to the prevailing economic theories. Before any economic transactions can begin, Davidson continued, products and services must be conceptualised, designed, produced, tested, transported and assessed: in short—engineered. Concerning water management for the Sahara, Davidson held up Roman macro-engineering as an example which no modern government had been able to repeat. "Our contemporary age has preferred macro-conferences to macro-engineering".

By the term macro-engineering Davidson understood the study of the design, impact, organisation, management and assessment of large-scale technological projects. I described the Apollo Saga [see Titles 163-167] and called it a typical example of Davidson's concept. There are few institutions anywhere that combine advanced training in engineering-management with a career path. He reminded the reader that when the famous French *Ecole polytechnique* was founded in 1794, its original title was *Ecole Centrale des Travaux Publics*. "The world's institutions are to a large extent anachronistic" Davidson continued, "when technological advances can work today so efficiently for environmental and social improvement."

If politicians' perception of what is now possible is so uninformed and at a time when engineers must broaden their culture, he quoted as an example of what can be achieved, the United Nations Model Neighbourhood in Peru, a demonstration town designed by the architect Peter Land. As engineering projects are becoming continental, intercontinental and even planetary, he paraphrased Voltaire that engineering had become "too important to be left to engineers." In the planning for the world's future, financiers and lawyers must play their vital part, as "Things alter for the worse spontaneously, unless altered for the better designedly" as George von Lengerke Meyer once said.

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