

Emeritus Professor Grant Steven

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Grant Steven was born in Clydebank, Scotland in 1945 with a family background in shipbuilding and tool-making. His engineering career started at 14 when he commenced as an apprentice fitter and turner in John Brown's shipyard, Clydebank. The trade certificate was finally gained in 1964 in conjunction with the beginning of an undergraduate course in engineering at the University of Glasgow. During this time the ship QE II was being designed and built and new methods of large marine diesel engine construction were being developed in the shipyard, some of this Grant worked on.

The four year Mechanical Engineering degree with Honours and the University Mackenzie prize for the top graduate was completed in 1966. During this time he was elected the engineering representative on the university council. This was followed by a four year scholarship to undertake research at Oxford University on an awkward type of stress analysis involving multiple elastic bodies in contact. The thesis arising from the research was defended in the middle of 1970 and a Doctorate of Philosophy (DPhil) awarded. In conjunction with the research an appointment of Junior Lecturer in the Department of Engineering Science at Oxford University was held from 1968 to 1970. Also Grant was elected President of the St Catherine's College middle common room (MCR) for the years 1967 -1969.

In 1970 Grant took up a position as Lecturer at the University of Sydney, Department of Aeronautical Engineering. In this Department he has been promoted through the various grades to Associate Professor in 1985 and in 1991 successfully applied to be appointed the Lawrence Hargrave Professor of Aeronautical Engineering at the University of Sydney. From 1984 to 2000 he was also the Head of the Department of Aeronautical Engineering.

Over this long period of academic appointment at the University of Sydney there have been several sabbatical breaks when visiting professorships have been held at Glasgow, Bristol, Harvard, Oxford, Durham, Swansea and Dalian Universities.

Over 350 research papers have been published and several research books put out by international publishing houses. Much of the research undertaken has been in the fields of numerical methods, especially the Finite Element Analysis (FEA) method for structural analysis, structural design and laboratory testing. Recently the research has focussed on new methods for achieving the optimum design of a structure for its many, varied environments. This work has borrowed computational techniques from observations of evolutionary processes in nature. There have been over 30 doctorates bestowed upon students supervised by Grant and he has acted as examiner to over 50 PhD's from all around the world.

It would be extremely difficult, if not impossible, to teach engineering if one were not a practitioner. In the last 35 years Grant Steven has acted in a consultancy capacity to over 100 private and public organizations, large and small. Over 50% of this work has involved new designs and the other 50%, unfortunately, relates to failure or non performance from a structural point of view of items used. These

consultancies were in all aspects of industry from mining, to aerospace to consumer products. Such non/poor performance of structures has fed back into research activity directed towards making designs more fitted to their environments (more perfect). At the more creative end another significant theme in much of the consulting work has been to assess new designs for compliance against some form of standard or to conduct tests/analysis to assist in the compliance process. Also through the consulting department of Strand7 there is ongoing daily involvement in practical FEA analysis for many of their clients.

Senior status is not complete without professional participation, Grant Steven is a Fellow, Academy of Technological Sciences and Engineering, a Fellow of the Institution of Engineers, Australia. He was Deputy-Chair of the Academic Board and chair of Graduate Studies Ctte. of the University of Sydney, board member of the Warren Centre for Advanced Engineering, . He has organized two major international conferences on FEA and other computational methods, he has served and is serving on the organizing committee for over thirty conferences and has presented keynote lectures at forty major meetings in the last thirty years.

For 2000-2004 he was appointed to the Council of NAFEMS a world agency for FEA technology. Also in December 2000 Grant took up the post as Professor in Engineering at the University of Durham where he taught continuum and structural mechanics, computational mechanics, dynamics and vibrations. He also continued his research on Product and Process Optimisation. He was coordinator of the Product and System Optimisation Thematic strand of the EU Funded FENET network which has several hundred top European manufacturing members across the whole spectrum.

In 2004 Grant returned to Sydney where he joined the Research and Development team at Strand7 (www.strand7.com) to help further enhance the functionality and performance of the Strand7 FEA software. Strand7 has about 5000 users worldwide and the user base is growing significantly every year, the company opened their UK office in 2005 with further internationalisation forthcoming. Grant founded Strand7 in the 1980's and has been the company secretary and a director since then.

Grant was recently successful nominated for the Australian Research Council College of Experts. In this role he assists in assessing all research grants in the engineering discipline area. Grant also presents occasional casual lectures in structural mechanics and FEA analysis and various local universities.