

CITATION

Michael Elfick was in the first intake of surveying students to the Bachelor of Surveying degree at the University of New South Wales in 1957. Unfortunately work commitments meant he could not continue with his university studies, so he served articles with Messrs Gilham & Aitken of Sydney and then with Mr J Linton of the Tasmanian Hydroelectric Commission before qualifying as a Licensed Surveyor in 1961. From 1962 to 1966 he was engaged in engineering projects, firstly with Rankine and Hill and then with Ove Arup and Partners at the Sydney Opera House. During his period at the Sydney Opera House, Michael became well-known to most surveyors in the profession with the role he took during construction. It was due to his innovative use of three-dimensional geometry that much of the complex construction of the Opera House was built on time, and to such fine tolerances.

He then worked in the setting up of the innovative company, Engineering Computer Services, which specialised in computer techniques for geophysical and surveying applications. After a subsequent period as partner in a private practice at Cooma, he joined the New South Wales Department of Lands in 1970. Michael attained the position of Senior Surveyor and was responsible for much of the innovation in the Technical Services Branch including the transition to digital mapping.

Michael found time to return to university and obtained a postgraduate diploma in Surveying Science at the University of Sydney in 1969, under the tutorship of the late Professor Phil Berthon-Jones. Ten years later in 1979 he also completed a postgraduate diploma in Town and Country Planning at that University. In 1977 Michael moved to Newcastle to take up a lecturing position in the Department of Civil Engineering and Surveying. In 1981 he was promoted to Senior Lecturer.

Early in the 1970's Michael Elfick had an idea that computers could be used to aid photogrammetric measurement and that an analytical solution could be developed to replace current analogue solutions at a reasonable cost. So commenced a series of investigations which led to the development of the QASCO SD-4 analytical stereoplotter. This device was revolutionary. Weighing less than 1/10th of the equipment developed overseas and costing less than ¼ of their price, the SD-4 proved that it was possible in Australia to design advanced surveying and photogrammetric equipment.

He embarked on yet another path of innovation and invention in 1985. The result was the Adam Technology MPS-2 (Micro Photogrammetric System-2) analytical stereoplotter which was designed specifically for small format photogrammetry. By mid 1989, after just two years of full production, over 75 of these units has been sold and distributed throughout the world, considerably enhancing Australia's reputation as a surveying and photogrammetric nation. A larger format version of the MPS-2, known as the ASP-2000, was developed and used in various countries of the world including the USA, Malaysia, Japan, Finland and Switzerland.

Michael's research efforts, along with those of his colleagues at the University of Newcastle, were recognised by the Australian Research Grants Committee (now known as the Australian Research Council) and consequently continuous support was received for 9 years.

Throughout this period of involvement with analytical stereoplotters, Michael managed to maintain a close liaison with University undergraduate students through his teaching of 3rd and 4th Year level subjects; and a highly visible profile in the profession of surveying.

Apart from his lecturing duties, Michael served the University in several other ways, being a member of the Faculty Boards of Engineering and Science and the Computer and Safety Committees. Michael worked especially long and hard on the Safety and Health Committee of the University and held a very respected position on that Committee.

During his period at the University, he has acted as a consultant to many government authorities and private organisations. Whilst most of these consultations have related to photogrammetry and the application for small cameras and small format photography to uses with his analytical stereoplotters, he has also consulted with several government authorities on the use of land information systems, and with local engineering companies. His expertise in surveying for industrial applications, especially with optical tooling, helped the Newcastle firm of Goninan successfully tender for the refurbishment of crankshafts for the submarines and other vessels in the Australian Navy. These contracts had previously been won by overseas companies.

In 15 years to 1990, Michael published over 30 papers in refereed international and Australian journals dealing with photogrammetry and surveying. He has represented Australia at photogrammetric conferences in Germany, Brazil, Japan, USA and Switzerland. Michael was the Australian delegate to the International Society of Photogrammetry for the Commission dealing with instrumentation for nearly two decades.

Michael is a past recipient of the Halloran Prize from the New South Wales Division of the Institution for his work on the application of computers to surveying technology. He was also awarded the Planning prize in 1979 for his work in developing the Mark Management system for Integrated Surveys in NSW. He has been a corporate member of the Institution of Surveyors, Australia since 1962, and served on many sub-committees such as the INSURE committee which dealt with the information needs of surveyors into the 1980's and 1990's. In 1991 the Institution of Surveyors awarded Michael the prestigious Medal of the Institution. The citation read "in recognition of his outstanding achievements of service to, and reflecting credit on, the profession of surveying in Australia and the Institution".

Michael was the inaugural President of the Australian Urban and Regional Information Systems Association (AURISA) in 1979. He was an active member of the Australian Photogrammetric Society and his presence at international conferences and on Working Parties of the International Society helped establish Australia's reputation in this field.

In his last few years at University, and now virtually full-time in his retirement, Michael has been developing a computer based technique to produce a cost-effective way of obtaining accurate coordinates from cadastral plans. The production of digital data bases from plans showing the title boundaries of land parcels is the fundamental corner-stone of geographical information systems. Michael's efforts

have resulted in a patent and serious interest from a major American international software company. The potential for using this latest innovative approach to building digital databases is global with considerable international interest already being shown in pilot studies which have been completed in Newcastle, Queensland and New Zealand.

Married with three children, his favourite recreation is bush-walking. Michael's love of the bush led him into another area of research – the modelling of bushfires. He has been a member of the Coal and Candle Bushfire Brigade for many years and has attained the rank of Captain. His efforts in making an interactive computer model for bushfire prediction and control have been internationally recognised and he has, on several occasions, been consulted by the CSIRO for his work on bushfire modelling.

Michael's involvement with the community has always been an active one – such as his role with the Bushfire Brigade. In recent years Michael has served as a guest-examiner for the Board of Surveyors of NSW.