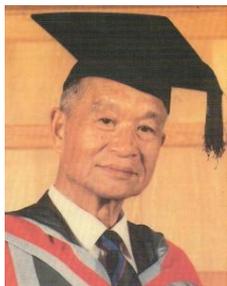


Citation on Tan Sri Datuk Ir. Professor Dr. Chin Fung Kee 陈宏基



Tan Sri Datuk Ir. Professor Dr. Chin Fung Kee JMN, PSM, DMPN, DSc (Belfast), FICE, FISTructE, FIE (Malaysia, S'pore, Ireland), MCIWEM, Hon. FICE, Hon. DSc (Belfast, S'pore and Glasgow), FWA is Malaysia's most respected and outstanding civil engineer not only in engineering practice but also in engineering research and education. He is known for his excellence in geotechnical, structural and hydraulic engineering. He was a local pioneer engineer who played a key role in the development of engineering education, research and practice in the country. His knowledge and contributions benefited the engineering fraternity both nationally and internationally and his achievements were recognized worldwide.

Tan Sri Prof. Chin was born into a goldsmith family of Mr. Chin Siew Woon and Madam Chang Nyuk Khim in 1920 in Nibong Tebal, Penang. Like many overseas Chinese from Taisan District of the Guangdong Province in China, the forefathers of Tan Sri Prof. Chin left China in the 1800s to seek their fortune in Malaya. He was the third generation to be born in Malaya.

Tan Sri Prof. Chin completed his secondary education at the High School, Bukit Mertajam and was awarded a Straits Settlements Scholarship to study at Raffles College, Singapore where he obtained a First Class Diploma in Arts. He then taught in his old school until he won a Queen's Scholarship in 1949 to study Civil Engineering at the Queen's University of Belfast, UK. In Belfast he won the Foundation Scholarship in Civil Engineering and the Belfast Association of Engineers Prize. In 1952, Tan Sri Prof. Chin graduated with First Class Honours in Engineering and proceeded to complete his Master's degree at the same University while working as an assistant lecturer.

Tan Sri Prof. Chin returned to Malaya in 1954 and served as an engineer with the Drainage and Irrigation Department before joining the University of Malaya in 1956 as lecturer and went on to be senior lecturer and finally professor. He was acting Vice Chancellor for seven years and for a period he was simultaneously the professor and Dean of engineering, deputy and acting Vice Chancellor.

He retired as Professor Emeritus in 1973 and joined Jurutera Konsultant (SEA) Sdn. Bhd. He was responsible for the design and construction supervision of many highways, bridges, high-rise buildings, reclamations and structures on soft ground.

Tan Sri Prof. Chin played a major role in the formation and development of the Faculty of Engineering, University of Malaya. In 1957 after independence, the Government decided to set up the University of Malaya in Kuala Lumpur. Together with other teaching staff he volunteered to approach the then Prime Minister, Tunku Abdul Rahman, to get his support to set up a Faculty of Engineering in Pantai Valley.

With the approval of the Tunku and an allocation of RM1.5 million only for the project, the team led Tan Sri Prof. Chin went full swing to build the Faculty of Engineering at Pantai Valley. Within a period of only four months the engineering buildings were completed and equipment were moved from Singapore to Pantai Valley in Kuala Lumpur to enable the first session in engineering to continue in May 1958 without a break. For many nights, he had to sleep in his car to supervise the 24-hour work program.

When he was the acting Vice Chancellor, Tan Sri Prof. Chin was the de facto project director in the planning, design and construction of many buildings in University of Malaya, including the international award winning Faculty of Medicine building.

During the early years of his tenure with the Faculty of Engineering Tan Sri Prof. Chin worked closely under the founding professor and Dean, C.A.M. Gray. Their great achievement, attained through the collective efforts of both staff and students, was to produce the first batch of five graduates in 1958 and to build up in a short period of a few years, a degree which achieved international recognition. A pass degree in engineering from the University of Malaya then was readily accepted by British universities for postgraduate studies which normally required a good honours degree.

After the retirement of Professor Gray, Tan Sri Prof. Chin took over the leadership of the Faculty. As Dean and acting Vice Chancellor he expanded and further developed the Faculty of Engineering into a reputable engineering school recognized internationally. Since the early days in the 1950s, many thousands of well educated and highly trained engineers have graduated from the University of Malaya to serve mainly in Malaysia and Singapore. Many of them have been, and some still are, holding key positions in the Government and private sectors in both countries. Many have also done well in postgraduate studies in leading universities overseas.

Tan Sri Prof. Chin was an outstanding engineer in geotechnical, structural and hydraulic engineering and is remembered for his leading role in the design and construction of the first Penang Bridge, the Komtar building foundation rectification work in Penang and many other important projects such as the North-South Expressway.

Tan Sri Prof. Chin was very deeply involved in the planning, design and construction supervision of the Penang Bridge. This project has won a prestigious international award, see below. He introduced some innovative design features thus achieving considerable savings in cost and time. In particular, special natural rubber bridge bearings were designed for the project to take care of seismic loading. This has given rise to a new industry and market for the use of Malaysian natural rubber. The bridge bearings were later further developed into special foundation bearings (base isolators) and used in seismic design of earthquake resisting buildings and bridges worldwide.

In the field of foundations, in 1970 he developed the concept of inverse slope method for the prediction of pile ultimate bearing capacity, without having to test the pile to failure. This method, which can save both cost and time during construction, is now internationally known and acknowledged as the 'Chin Method' in the piling industry. Arising out of his involvement as an independent consultant in the Komtar building foundation problem in 1977, Tan Sri Prof. Chin developed a method of diagnosing pile condition in the ground. This method has been widely used by practising engineers.

Tan Sri Prof. Chin devoted much of his time and efforts to carrying out research in respect of the needs and the problems faced by the country. He published more than 70 technical and research papers and a book entitled: "The Penang Bridge – Planning, Design and Construction". The book which gives a first hand account of all the important aspects of the bridge is a treasure to our national engineering heritage. The Institution of Engineers, Malaysia published a book entitled "Selected Papers of Professor Chin Fung Kee" for ease of reference and the benefit of the practising engineers. His many findings have found extensive application not only in development projects in Malaysia but also overseas.

In 1984 he was conferred the Doctor of Science degree by his Alma Mater, Queen's University of Belfast, based on his independent research over the years during his working life. He was also awarded Honorary Doctor of Science degrees by his Alma Mater, the University of Singapore, and the University of Glasgow.

Throughout his professional career Tan Sri Prof. Chin was dedicated to public service. He served as an honorary consultant to the Malaysian Government on numerous engineering problems and projects. He was a member of several commissions and committees set up by the Malaysian Government to administer study and investigate various matters pertaining to engineering.

He was Chairman of the governing Council of the National Institute for Scientific and Industrial Research of Malaysia; Member of three Royal Commissions; Member of the National UNESCO Commission, Malaysia and Member of the Coordinating Advisory Committee, Malaysia Rubber Research and Development Board. In 1988, The National Council of Scientific Research and Development Malaysia awarded him the National Science Award.

In recognition of his contributions he was conferred the Johan Mangku Negara in 1967, the Panglima Setia Mahkota (which carries the title of Tan Sri) in 1980, and the Darjah Yang Mulia Pangkuan Negeri Pulau Pinang (which carries the title of Datuk) in 1985.

His successes earned him widespread reputation and recognition. He was an Honorary Fellow of both the Institution of Civil Engineers, U K and The Institution of Engineers, Malaysia of which he was a founder Council Member in 1959 and the President from 1966 to 1968. He was also President of the Southeast Asian Geotechnical Society from 1973-1975. He was elected the Vice President for Asia of the prestigious worldwide organization known as the International Society for Soil Mechanics and Foundation Engineering in 1981-1985. He was also elected Chairman of the Commonwealth Engineer's Council in 1973-1977.

Tan Sri Prof Chin passed away on 29 August 1990 after a short illness. He is survived by his daughter, Madam Kathleen Chin Kie Fong and three sons, Dr. Alan Chin Kie Loong, Dr. Ian Chin Kie Cheng and Peter Chin Kie Siew.

Tan Sri Prof. Chin is remembered, among his many outstanding qualities, as a man of high integrity and strong principles which he practised consistently throughout his long career. These two qualities form the moral backbone of our profession and are vital in discharging our responsibilities of public trust and safety.

In memory of Tan Sri Prof Chin's achievements and contributions, several Lectures and Awards were named after him. The Southeast Asian Geotechnical Society established a Professor Chin Fung Kee Lecture to be delivered at every Society Conference held once every three years in Southeast Asia. In Malaysia the annual Professor Chin Fung Kee Memorial Lecture was set up and funded by the Engineering Alumni Association of the University of Malaya in 1991. Each year this prestigious Lecture is organized jointly by this Association and the Institution of Engineers, Malaysia. Over the years this Lecture series has become an established tradition and each year the Lecture forms an important event in the annual calendar of the engineering profession.

His former students also provided funds for the annual 'Tan Sri Professor Chin Fung Kee Prize' awarded to the top student in the master's degree program in Geotechnical and Geo-environmental Engineering at the Asian Institute of Technology in Bangkok. The Tunku Abdul Rahman College established the annual 'Professor Chin Fung Kee Memorial Prize' for the best student in the Final Year Advanced Diploma in Technology (Building) Examination. The University of Malaya set up the Professor Chin Fung Kee Gold Medal Award which is given each year to the best engineering student in the final year examination.

Tan Sri Prof. Chin was a humble man, a role model, a teacher and a friend to many who have been fortunate to know him and worked with him. He was a man who has dedicated his life to excellence and service to the engineering profession and to society at large. Very few people in the engineering fraternity can match the width and depth of his achievements. He is remembered as one of the great engineers who have excelled in engineering practice, research and education.

It is well-known that Tan Sri Prof. Chin played a leading role in the Penang Bridge Project. His humility is exemplified by the following passage in his book entitled: "The Penang Bridge – Planning, Design and Construction".

"Engineers who actually engineer are not soloists at heart. A coveted product of engineering, be it a spacecraft or a major bridge, is the tangible result of a colossal amount of teamwork extending over many years". The Penang Bridge Project which was bestowed the Grand Award by the Council of Consulting Engineers of Washington in the 1986 US Engineering Excellence Competition is certainly the product of the dedicated effort of a large number of engineers from the Malaysian Highway Authority and many other government departments, from the consulting engineers Howard Needles Tammen & Bergendoff Int Inc, Jurutera Konsultant (SEA) Sdn Bhd and their Associates and from the Contractors Hyundai Engineering and Construction Co Ltd and their local joint venture construction companies. Consequently the writer of this book is but only the scribe who has documented, hopefully with accuracy the results of the labour of the many engineers concerned."

In summary, Tan Sri Prof. Chin was a man of truly outstanding qualities, who distinguished himself in terms of his achievements and contributions to society. He was a man of high integrity and strong principles. In a long career lasting over 40 years he was well known as a brilliant research worker, university lecturer and practising engineer who distinguished himself not only in Malaysia but also in the international arena. He contributed immensely and selflessly to the engineering profession and to society at large. Above all, his lasting legacy which continues to this day is that he inspired a whole generation of engineers to engineering excellence which is crucial for the progress and advancement of the profession.

Contributed by:

Ir. Chiam Teong Tee
Ir. Lee Yow Ching
Ir. Dr. Ooi Teik Aun
Ir. Dr. Ting Wen Hui
Ir. Dr. Chan Sin Fatt

THE TWENTIETH PROFESSOR CHIN FUNG KEE MEMORIAL LECTURE

Presented at the Auditorium Tan Sri Prof. Chin Fung Kee,
Wisma IEM, Jalan Selangor, 46200 Petaling Jaya, Selangor, Malaysia
on 23 October 2010



Prof. Dr. In. Pedro Seco e Pinto

Professor of Geotechnical Engineering, University of Coimbra, Portugal
Principal Research Engineer, National Laboratory of Civil Engineering (LNEC)
President of International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) 2005-2009

Education

1965 - 1971 - Licenciated in Civil Engineer (with honours).
1975 - 1977 - Master of Engineering (with honours)
1979 - 1983 - Specialist in Geotechnique (Ph.D Degree)
1992 - Principal Research Engineer (Full Professor degree)

Positions

- ISSMGE President (2005-2009)
- ISSMGE Vice President for Europe (2001-2005)
- Full Professor of Geotechnical Engineering of University of Coimbra.
- Invited Professor of Master Courses "Soil Mechanics" and "Engineer. Geology" of New University of Lisbon (since 1983).
- United Nations Consulting for Design and Instrumentation for Dams (1988-1994).
- Invited Lecture of University of California, (1992-1994.)
- Chairman of TC4 " Earthquake Geotechnical Engineering " Committee of ISSMFE (1994-1999).
- President of Portuguese Society for Geotechnique (1996- 2000).

Professional Experience

Consulting Engineer of major projects in Dams, Power plants, Bridges, Tunnels and Quay Walls, in Portugal, Argelie, Morocco, Angola, Mozambique, Senegal, Guinea, Brazil, Venezuela, Dominican Republic, Ecuador, India, China and Syria, covering field and laboratory testing, dynamic analyses, earthquake

engineering, numerical analyses, ground improvement, slopes, special foundations, instrumentation and safety evaluation.

Conferences

He has presented state-of the art lectures and special lectures in 76 countries of the 5 Continents.

Awards and Honors

He has received more than 50 international Awards including American Biographical Institute USA, "Special Volume for the Contributors of Earthquake Engineering"; Nagadi Lecture by Indian Geotechnical Society, Széchy Lecture by Hungarian S M Society, Nonveiller Lecture by Croatia Geotechnical Society, Sukle Lecture by Slovenia Soil Mechanics Society and Chin Lecture by Huanzhou University.

Editorial Boards and Reviewer

- Co-editor of Geotechnical and Geological Engineering Journal, Springer Publisher
- Member of Editorial Board of several Journals, namely "Geotecnia", "Bulletin of Earthquake Engineering", Case Histories Journal, Acta de Geotecnia, International Journal of Geotechnical Engineering.
- Editor of Proceedings of 4 International Conferences.

Publications

He is author or co-author of 350 technical and scientific reports, more than 150 papers for national and international conferences and journals and has contributed for 4 books.

DAM ENGINEERING: STATE OF THE ART AND PRACTICE, OBSERVED BEHAVIOR AND FUTURE CHALLENGES

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ABSTRACT

It is important to analyze embankment dams behavior from the past lessons learned. It is noticed that modern embankment dams withstand the design earthquake without significant damages. In spite of this situation it is important to prevent the occurrence of incidents and accidents of embankment dams for static and seismic scenarios and so a deep understanding of the triggering factors is needed.

Well documented case histories from many parts of the world related with embankment dams behaviour, under static and seismic actions, were carefully selected and are discussed. The background of embankment dam engineering history is presented.

Based in the governed factors attention is given to the requirements for materials characterization.

The design and the analysis of dam stability under static and seismic conditions are addressed. The reservoir triggered earthquakes and the causative factors are discussed. Dam monitoring and inspections of dams are presented. Ageing effects and rehabilitation of dams are analysed.

The risks associated with dam projects are discussed. The benefits and concerns of dams are presented. It is important to develop new ways of thinking