

## Biography of Professor Seng-Lip Lee

Professor Seng-Lip Lee was born on March 21, 1925. His father, Lee Oen Seng, passed away in Xiamen five years later and his mother Kheng Kim Loan, brought him back to Jakarta to live with his brother, Lee Seng Eck. Upon finishing his high school education, he left for Manila in 1946 to live with another brother, Lee Siau Tong, and attend Mapua Institute of Technology, where he graduated with a BSCE degree and was awarded the President's Gold Medal in 1950. Upon graduation, he worked as a site engineer with Kho Santiago Co. Ltd. until he left for Ann Arbor, Michigan, in the fall of 1950 to study at the University of Michigan, where he obtained his MSE degree in June 1951. He worked as an engineer for Jackson and Moreland in Boston until September 1951, when he enrolled at the University of California, Berkeley; he obtained his PhD degree at the end of the summer of 1953.

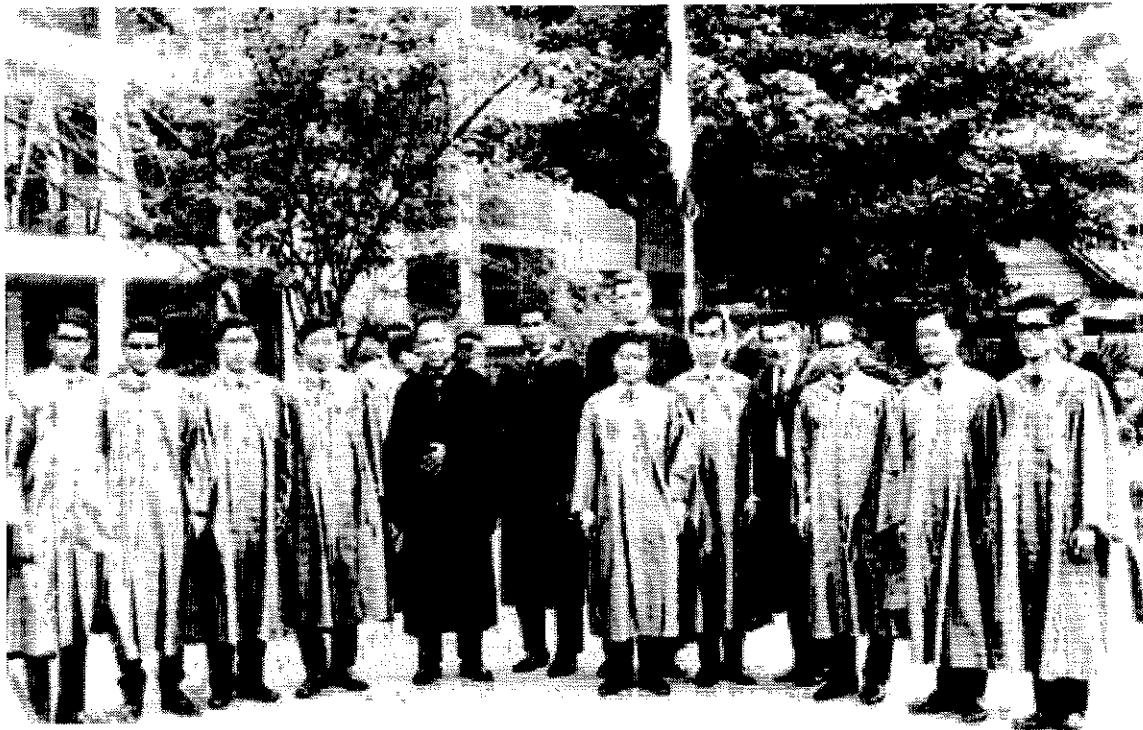
In the summer of 1952, he worked as an engineer for Kaiser Engineers Inc. in Oakland, California. From the summer of 1953 to the fall of 1955, he worked for Bechtel Corporation in San Francisco. He joined the Department of Civil Engineering at Northwestern University, Evanston, Illinois, in the Fall of 1955 as an assistant professor; he was promoted to full professor in 1960. His mother came to live with him in Evanston in 1967 and found the cold climate not conducive to her health. Before he left Northwestern University in 1968, he had supervised 26 PhD students. He then took up an appointment at the Asian Institute of Technology in Bangkok, Thailand, as professor and chairman of Division of Structural Engineering and Mechanics, and taught there for seven years, during which he supervised 13 D.Eng. students.



Academic staff and postgraduate students of the Department of Civil Engineering in front of the Technological Institute, Northwestern University, Evanston, Illinois (1958).

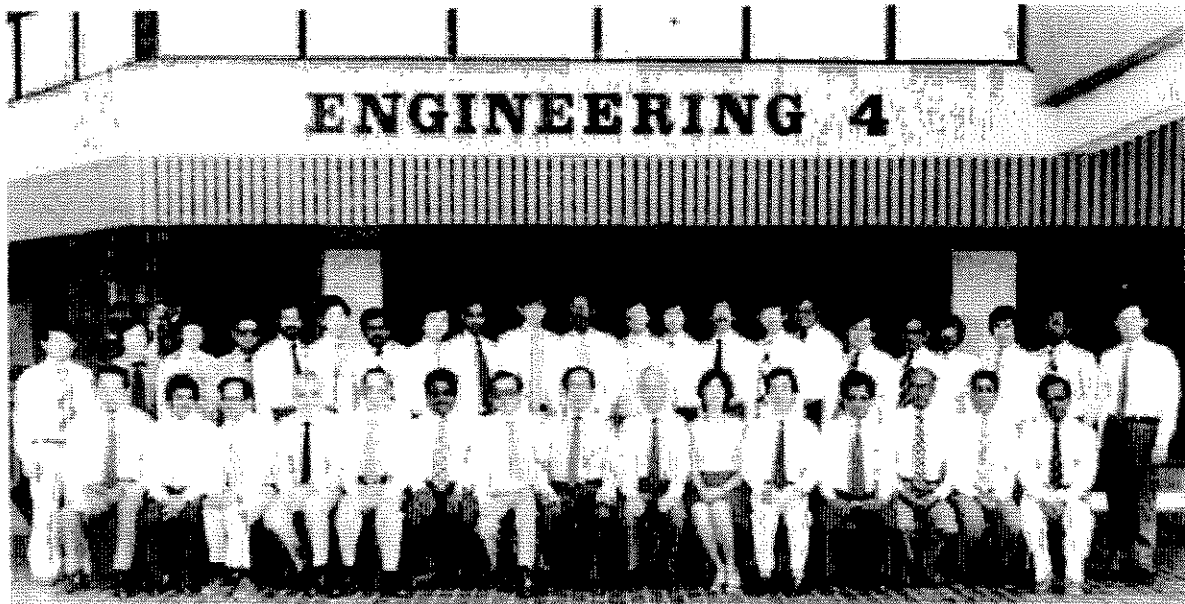


Professor Lee with his mother, Madam Kheng Kim Loan, at home in Bangkok (1968).



Academic staff and students of the Division of Structural Engineering and Mechanics, Asian Institute of Technology, Bangkok (1969)

He joined the University of Singapore, now National University of Singapore in 1975 as professor and Head of the Department of Civil Engineering, a position he held until 1989 when he was conferred an Emeritus Professorship. He supervised or co-supervised 15 PhD students.



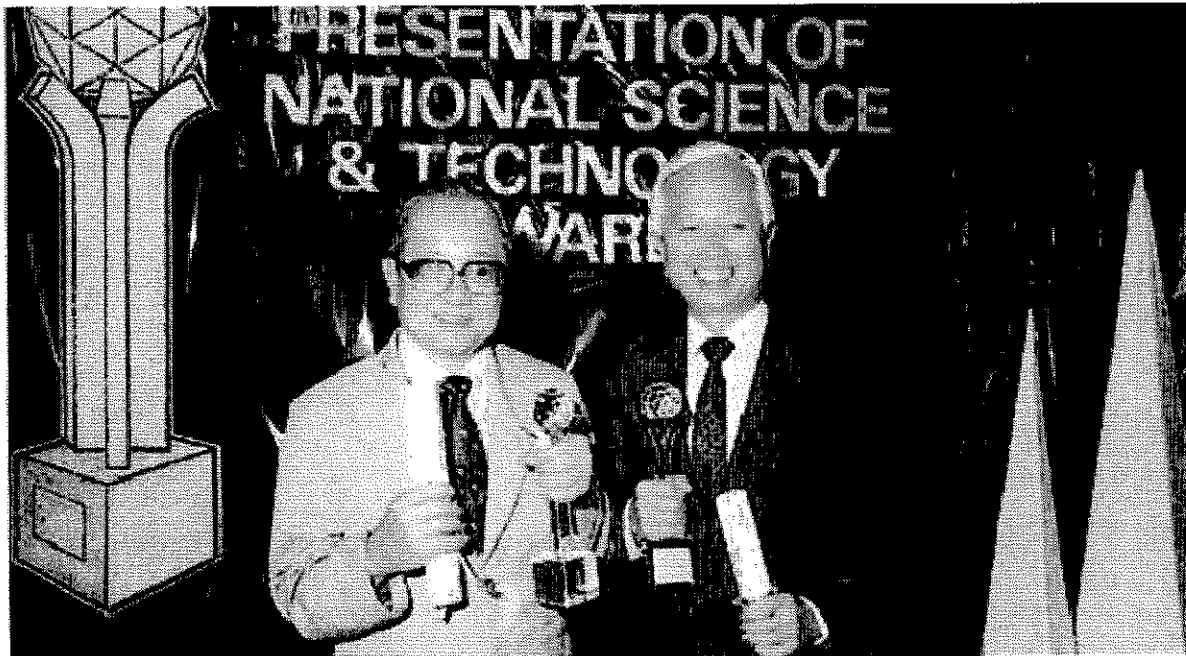
Academic staff of the Department of Civil Engineering, National University of Singapore (1983).



Professor Lee being conferred the Emeritus Professorship at the National University of Singapore by Chancellor Wee Kim Wee, President of the Republic of Singapore, with Vice-Chancellor Professor Lim Pin looking on (1989).

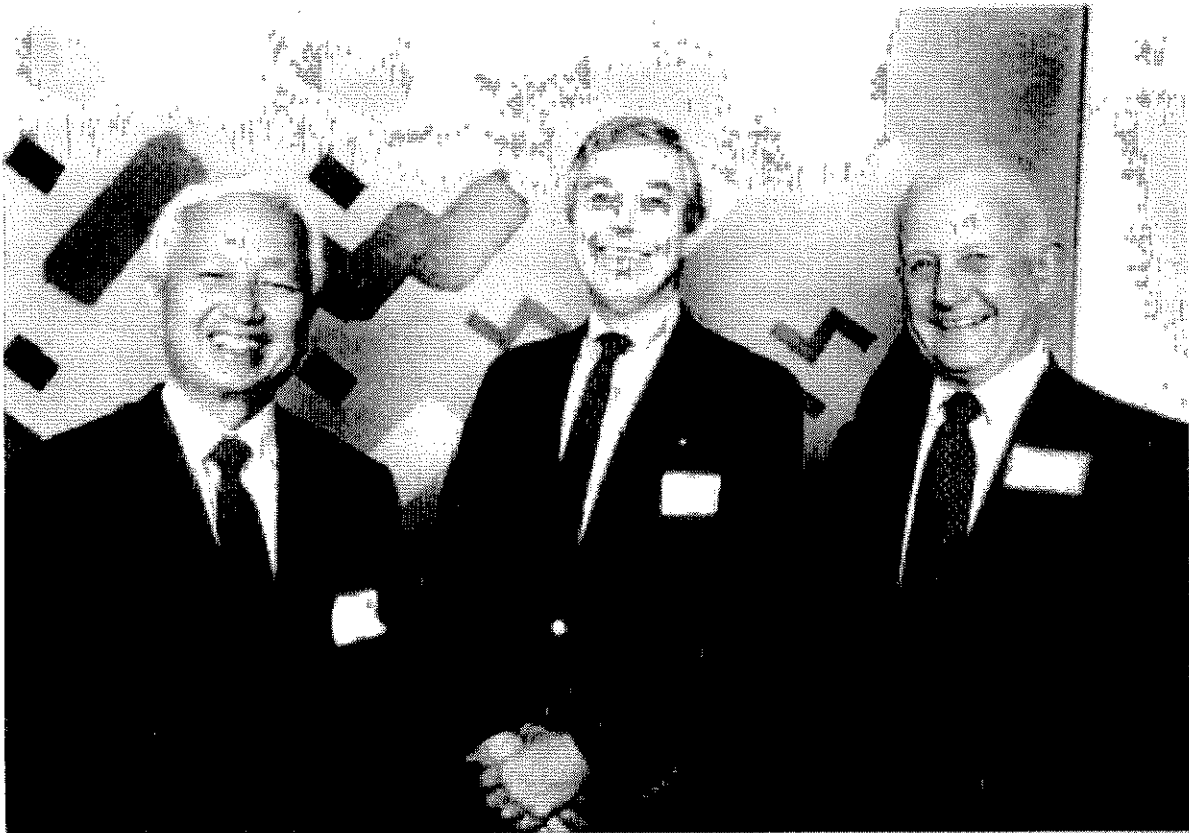
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Professor Lee has served as structural and/or geotechnical engineering consultant in numerous construction projects in several countries involving design and construction of high rise buildings with deep basements, reclamation and soil stabilisation for airport and marina construction and housing development, wind load studies on structures, repair of buildings, treatment of mining ponds for housing development, tunnel and river cofferdam construction for expressway and mass rapid transit, tower construction, space frame connectors, construction and repair of bridges, high technology buildings, wharf construction, design of ferrocement water tanks and secondary roofs, design and construction of cable-stayed roof, jet grouting for canal and river wall construction, and levee design and construction for environmental protection. He has served as a director of several companies in the industry and registered as a Professional Engineer in several countries and states. He is co-holder of a patent on Fibredrain for consolidation of clayey soils.



Professor Lee with co-recipient Professor Wong Hock Boon of the Inaugural National Science and Technology Award, Singapore (1987).

For his contributions in civil engineering education, research and development, and professional practice, Professor Lee has received honours and awards which include A.P. Greensfelder Construction Prize (1982) of the American Society of Civil Engineers, Maurice P. van Buren Structural Engineering Award (1989) of the American Concrete Institute, the inaugural Engr. Kenneth Y D Gin Award (1990) for Prestigious Publication (Application), Institution of Engineers, Singapore, International Federation of Asian and Pacific Contractors Association and Philippines Contractors' Association Foundation Research awards for Works on Deep Basements (1979) and Soil Stabilization (1982), Public Administration Medal (Silver) Singapore (1985), Singapore National Science and Technology Award (1987), First Institution of Engineers Singapore Innovators' Awards (1990) and University of California Berkeley Distinguished Engineering Alumnus Award (1991).



Professor Lee with co-recipients Leslie E Robertson and Howard G Wilson of the University of California Berkeley Distinguished Engineering Alumnus Award (1991).

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**Civil Engineering and Infrastructure  
– Education, Research and Practice**

*The Professor LEE SENG LIP  
Symposium Volume*





*Lee Seng Lip*





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**PROCEEDINGS OF THE SYMPOSIUM IN HONOUR OF  
PROFESSOR LEE SENG LIP**

21-22 March 2011

Singapore

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**Civil Engineering and Infrastructure  
– Education, Research and Practice**

*Edited by*

**K C G Ong, Y K Chow and S Swaddiwudhipong**  
Department of Civil & Environmental Engineering  
National University of Singapore

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## **Preface by Associate Professor ONG Khim Chye Gary**

This symposium is organized by the Department of Civil and Environmental Engineering, National University of Singapore to honour Emeritus Professor Lee Seng Lip for his contributions to civil engineering education, research and practice. This is a follow-on to the previous 1999 Symposium on Innovative Solutions in Structural and Geotechnical Engineering, held at the Asian Institute of Technology, Pathumthani, Thailand, organized by School of Civil Engineering, Asian Institute of Technology and co-sponsored by the then Department of Civil Engineering, National University of Singapore.

I am deeply honoured to be tasked to chair the Organizing Committee of this symposium. Those of us who were his students and colleagues are most fortunate to have benefitted from Professor Lee's patient guidance and deep erudition even years and decades after first interacting with him. As an educator myself I can deeply appreciate not only the amount of learning he managed to impart to those lucky enough to study with him but also the attitude with which he instructed and educated us. For me, he epitomizes what inspiring and galvanizing mean. Few have his command of scientific insight, his knowledge of its nuances, or his grip on how civil engineering education, research and practice all fit together.

This symposium forms part of a series of events to raise funds for the Lee Seng Lip Professorship. Unlike the previous conference with the twin foci of Structural and Geotechnical Engineering, this symposium focuses on topics relevant to education, research and practice, in civil engineering and infrastructure. The breadth and range covered by the papers contained in this symposium volume provides an indication of the enduring legacy of his remarkable career.

K C G Ong  
Deputy Head (Administration)  
Department of Civil and Environmental Engineering  
National University of Singapore



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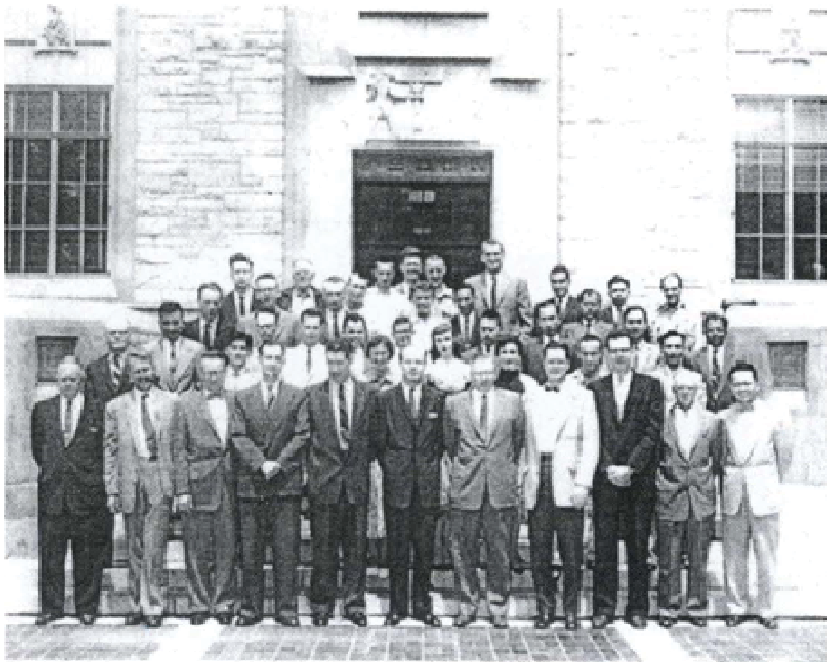
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## Biographical Note of Professor Seng-Lip Lee

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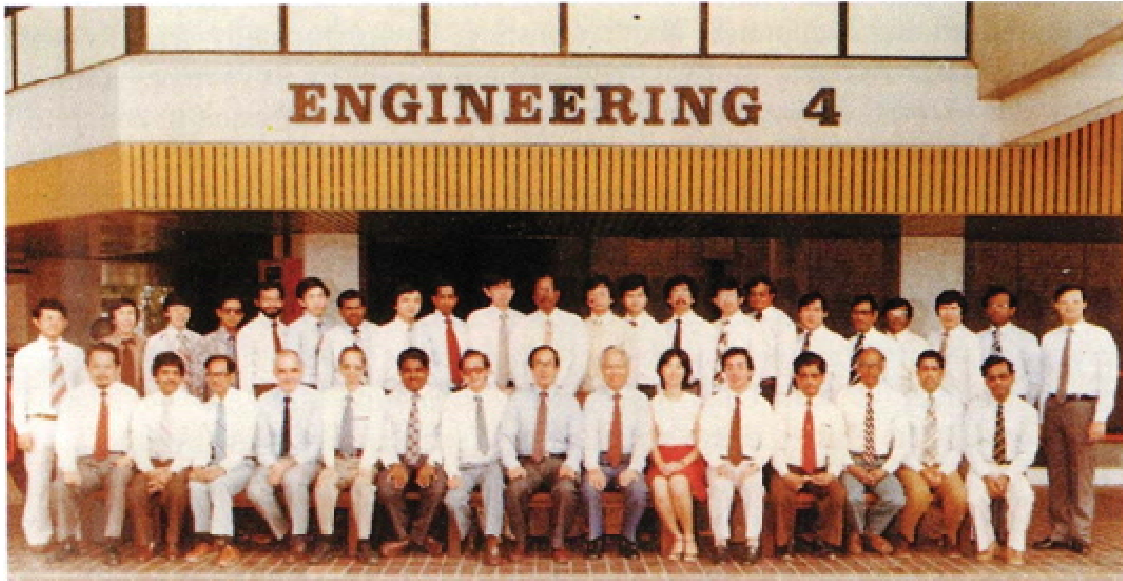


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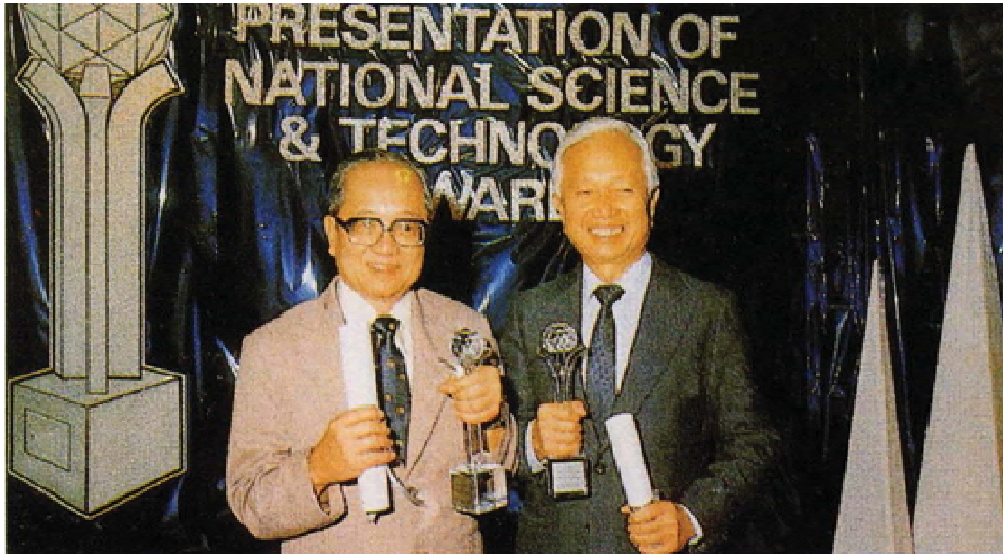


Professor Lee being conferred the Emeritus Professorship at the National University of Singapore by Chancellor Wee Kim Wee, President of the Republic of Singapore, with Vice-Chancellor Professor Lim Pin looking on (1989).

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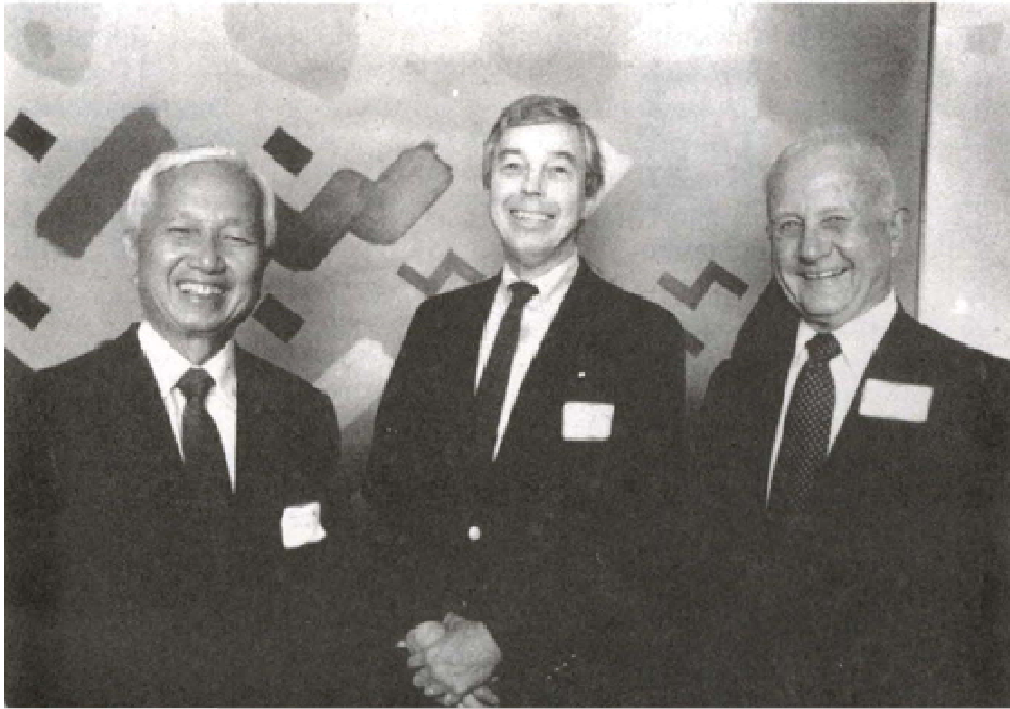
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## Doctorate Graduates Supervised by Professor Seng-Lip Lee

### Northwestern University (1955-1968)

Agabein M E	Lin K H
Anand S C	Lin T J
Ball R E	Manuel F S
Ballesteros P	Mousa AM
Bryant R H	Perelman D S
Carney J F	Pulmano V A
Gould P L	Rimawi W H
Hauck G F	Saul W E
Heidebrecht A C	Shieh Y J
Hongladaromp T	Snyder J
Kao J S	Thorn B J
Karasudhi P	Wang T M
Kriz L B	Wiesinger F P

### Asian Institute of Technology (1968-1975)

Alam K M A  
Austriaco N C  
Chan K S  
Hovichitr I  
Kasemset C  
Limpisvasti S  
Malaivongs K  
Ng H K  
Nimityongskul P  
Pakotiprapha B  
Srimahachota D  
Suriyamongkol S  
Vijakkana C

### National University of Singapore (1975-May 1999)

Chiew S P  
Choa V  
Ganeshan V  
Goh T C  
Inoue T  
Kasiraju K  
Kog Y C  
Lim T Y  
Parnploy U  
Tan G  
Ting L C  
Wong K Y  
Wong S F  
Yong D M



### Swallow's nest with coconut milk

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It is my greatest pleasure to be able to see Professor Lee again and to participate in this symposium, held to celebrate “86-year-old Professor Lee”.

The first time I met widely known Professor Lee was in April of 1983, exactly 28 years ago. It was when JICA (Japan International Cooperation Agency) asked me to visit the Department of Civil Engineering at the National University of Singapore and to stay there for three weeks in order to set forward a scientific cooperative program between our two countries.

During my time at the university, I realized how beautiful the campus was and how the buildings were arranged in an orderly manner.

In such a marvelous environment, I was deeply impressed that Professor Lee had been energetically carrying out his own research works, and also encouraging many brilliant young scholars who had gathered around him.

While staying at the National University of Singapore, I delivered two lectures concerning Kansai International Airport, which was at the first stage of construction, and the topic of urban tunneling problems in Japan. In addition, I was able to visit several construction sites, for example, a vast number of land reclamation projects, and learnt the plan of MRT (Mass Rapid Transit).

I have so many pleasant memories of those first three weeks in Singapore.

First of all, a room had been prepared for me, which Professor Valliappan had happened to use during his half-year stay there, just before I arrived. It was a completely unexpected surprise from which I felt so much pleasure, since he is my best friend and like an elder brother.

Second of all, the temperature in Singapore was a big problem for me. I had to endure a large difference in temperature between outside and inside the buildings; that is, it was very hot outside, but very cool inside. To overcome this difficulty, I always opened the windows of my office as well as those of my hotel room in order to adjust the temperature.

Before leaving Japan, I had sent a box of books and other materials to Singapore. I had thought that I could get a lot of work done, since my stay was to be three weeks long. However, after my three-week stay, I sent the box back to Japan as it was, unopened. I never opened the box because I was so exhausted, due to the temperature difference, just like a specimen in a temperature fatigue test.

One day, Professor Lee invited me to go play golf. Since my golf skills were bad, my score was of course terrible. However, Professor Lee played golf splendidly even in that very hot weather. I felt that his physical structure must surely be different from mine.

On the way back from our golf game, we went to a Chinese restaurant. Some dishes of fish, meat, vegetables, and fried rice were brought to our table, and naturally, I had a lot of beer as you can imagine. The last course that came was the dessert. Professor Lee asked me what I would like to have. Looking at the dessert menu, I selected the swallow's nest with coconut milk. After having finished paying the bill, Professor Lee came to me and said, with a smile on his face, that more than half of the total bill was for the dessert! I could not say anything, but I felt so very sorry to have ordered such a very expensive item. However, because so many years have passed, I can tell you truth that it was not so delicious. After that experience, I have never ordered swallow's nest with coconut milk again!

Since my first visit 28 years ago, I have had many chances to visit Singapore and I have met Professor Lee almost every time. He always treats me warmly, like a loving father, and my gratitude to him never runs out.

A lot of scholars have grown up under his supervision, and the National University of Singapore has been nominated as one of the crown barrel universities in the world.

Moreover, students who were just young scholars 28 years ago have become worldwide leaders in their fields. Here are three photographs I would like to share with you, two taken during my first visit 28 years ago, and the other taken at a South-East Asian Conference 18 years ago. I treasure my fond memories of these times together.



April 1983 (28 years ago)



May 1993 (18 years ago)



April 1983 (28 years ago)

I hold Professor Lee in great reverence and I wish Professor Lee continued health and prosperity!

**Toshihisa ADACHI**  
Professor Emeritus at Kyoto University

## **Personal Message**

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### **Tribute to Seng-Lip Lee**

It is with great pleasure for me to honor my life-long friend and colleague, Prof. Seng-Lip Lee on his 86<sup>th</sup> birthday. My congratulations and my best wishes for many more happy returns.

I have known Send-Lip even before I met him when he topped the Licensing Board examinations for Civil Engineers in the Philippines in 1949, and read about him in the newspaper from Manila; at the time I just finished high school and beginning my freshman year of college education. He finished first in his civil engineering class and awarded the gold medal by the Mapua Institute of Technology. From then on, he was my idol to follow – I followed his footsteps and succeeded in finishing first in my graduating class in 1954 from the same school, received a gold medal, and also went on to top the Licensing Board examination of that year.

My first personal meeting with Seng-Lip was in Chicago during an ASCE Engineering Mechanics Conference held in 1960. At the time, he was a Professor on the civil engineering faculty of the Northwestern University in Evanston, Illinois while I was a struggling assistant professor at the University of Illinois in Urbana-Champaign, Illinois. Since then, we have become very good friends. When he moved to Bangkok, Thailand to head the civil engineering school at AIT and later to the NUS (as Head of Civil engineering) in Singapore, I invariably visited him when I am in the Orient and presented lectures in his Department on his invitation.

Seng-Lip believes that knowledge of the fundamentals of engineering, such as mechanics, is most important in the intelligent practice of engineering, which I also share and embrace. I believe this and his native intelligence contributed much to his success in his academic and professional career. He is well known and respected for his technical and scientific contributions, as well as for his academic administration. Specifically, he deserve much credit with establishing the Civil engineering Department at the NUS to its current position as a world-class institution of higher education; in this regard, his wise foresight some years ago to dispatch a number of bright young graduates from the Department for doctoral studies at top universities in the world has served to enhance the current and future position of the Department.

Seng-Lip is also a delightful friend to many around the world. His personality is such that one meeting and one is forever his friend. Whenever we met he has a stream of jokes, including a few that are spicy, that are invariably entertaining. I am sure that his many friends knew of this aspect of him.

On this special occasion, it is a great pleasure for me to participate in celebrating his birthday, and extend my congratulations to Seng-Lip on his life-time contributions to the science and practice of engineering; he has made his mark particularly in many areas of civil engineering.

**A. H-S. Ang**  
Research Professor  
University of California, Irvine, USA



## **Personal Message**

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It gives me great pleasure to be part of Emeritus Professor Lee Seng Lip's 86<sup>th</sup> birthday celebration. Professor Lee joined the University (then Singapore University) more than 35 years ago as the Head of the Civil Engineering Department, a position he held till 1989. A pioneer in the Faculty, Professor Lee laid the foundation for what the Department of Civil and Environmental Engineering is today. Many of the established and internationally visible Civil Engineering professors at NUS were hand-picked and groomed by Professor Lee while he was Head of Department. Many major milestones in the history of the Civil Engineering Department can also be attributed to Professor Lee, including the introduction of graduate programmes and graduate research in Civil Engineering.

As a visionary, Professor Lee's deep insights into infrastructural development were ahead of his time. Professor Lee was highly regarded and sought after by industry, especially for his innovative and creative solutions. When Singapore was developing into a first-world city, Professor Lee contributed significantly in many major infrastructure developments in the nation, including Changi Airport's second runway, land reclamations off the East Coast, Punggol and Tuas – as well as many iconic buildings in the city. Even before 'global warming' and 'sustainability' became familiar buzz words, Professor Lee was already instrumental in solving related challenges. A co-holder of a patent on Fibredrain, his involvement in developing an environmentally friendly fibre drain for soil improvement was a landmark achievement. He and his colleagues also successfully tested a novel reclamation scheme using locally available marine clay sandwiched between thin sand layers. Indeed, Professor Lee's contributions to the engineering profession in Singapore and the neighbouring countries have been outstanding.

Graduates from the Civil Engineering Department at NUS remember Professor Lee most for his teaching, especially in turning complex issues into something easily understood. As a teacher, he has always emphasised excellence and rigour. I was one of his students in the 1970s. Most of us will also remember how his lectures were often coloured with a witty sense of humour. As an academic advisor, Professor Lee is known for his high standards and intellectual prowess. Many of Professor Lee's research students are very proud to have had him as their supervisor.

Over the years, Professor Lee has remained passionate as an educator and engineer. Even after retirement, he continues to be actively engaged in matters relating to education and research. His heart is still very much with the Department and he is vibrant at the age of 86! On behalf of the Faculty of Engineering, I wish him all the best on his 86<sup>th</sup> birthday.

Cheers!

**Professor Chan Eng Soon**  
Dean, Faculty of Engineering  
National University of Singapore





## **Personal Message**

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### **Emeritus Professor Lee Seng Lip - a mentor, colleague and friend.**

Emeritus Professor Lee Seng Lip has always been a mentor, a colleague and a friend ever since he joined the NUS in 1975. I was a young junior faculty then. He is a firm believer that research and consultancy should go together. My first consultancy study with him was to examine why many stretches of revetment shore protection had failed in a storm event and it involved the statistical analysis of the gradation characteristics of the armour stone units. The study also resulted in an article "Gravimetric statistics of riprap quarry stone" published in the Journal of Waterway, Port, Coastal and Ocean Engineering of the ASCE. Another consultancy study which was undertaken together with Prof Lee and other colleagues was on the aero elastic modeling of a tall slender building in Bangkok which also resulted in a paper "An experimental technique for the distribution of dynamic wind loads on tall buildings" published in the Journal of Wind Engineering and Industrial Aerodynamics. Numerous other studies were to follow covering areas such as coastal, hydrological and wind engineering along with joint publications in conferences. His guidance has helped me grow and develop professionally.

He has made very significant contributions when he was head of the Department of Civil Engineering - elevating it from an insignificant unit to a world class entity. He laid the foundation for a strong and respectable department by the time I took over from him as department head in 1989. Seng Lip is a thinker as well as a doer and we have all benefitted from his wisdom and his guidance.

Seng Lip, as he has been fondly called, has claimed that he never wrote memos and that he would work along corridors and various awkward places whenever he met up with his staff. His mind is sharp and never seemed to run out of memory space. In my many years as an administrator in NUS, I found it rather difficult to keep up with a no memo work place. He is indeed a personality extraordinaire! Perhaps a consoling point is that the situation is now different in an age of wireless and paperless communication when all of us are inundated with emails. Today, Seng Lip doesn't even access the email and we cannot function without it. This is simply amazing!

When I was assigned to be the dean in the School of Design & Environment in 2000, Prof Lee advised me that "a leader should communicate well and heed advice even if it goes against conventional thinking and most important of all, be fair in all that you do". I remembered his words. These were words which appear seemingly simple to follow but are extremely difficult to execute. But the advice had served me well.

He has always advocated that the best way to unwind is to laugh your woes away with jokes. The temporary reprieve works wonders. He is never short of anecdotes to illustrate his point in any discussion. The anecdote may be totally non-technical, but the analogy drives home the point he wants to convey. Today, Seng Lip is more than a mentor, a colleague and a friend. He is my lunch and golfing partner! Seng Lip, I wish you "many more good years".

**Professor Cheong Hin Fatt**

Department of Civil & Environmental Engineering  
National University of Singapore



## **Personal Message**

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### **Prof. Lee Symposium-Singapore 21/3/2011**

I first met Prof. Lee at the OWICS Conference in 1990. Until that moment, I had only had a knowledge of Prof. Lee's deep scientific culture through his numerous publications, but I hadn't had a chance to meet him in person yet. It was in that year, during what was my first trip to Singapore, that we established our first contact, the basis of a future friendship, which is for me one of the best and unforgettable memories of my time in Singapore. Through him and our Ci-Premier friends I could meet so many important people in the Singaporean scientific and professional community, and since then, every year I have been more and more enthusiast to go back to the city to attend the OWICS Conference.

My friendship with Prof. Lee, which grew deeper and deeper over the course of the past 20 years, allowed me to appreciate his unique personality, beaming with a very rare gracefulness and sensitivity. Under the scientific point of view, one of the most fascinating aspects of his personality is his ability to explain complex concepts in a very simple, straightforward way. He is always able to clearly point out how our scientific research and analytical efforts need to have a strong practical impact on our profession of engineers. He is the living proof of how powerful and fruitful the practical impact of refined scientific research can be on the technological progress of state-of-the-art engineering solutions, because he is in fact not only a worldwide renown researcher, but also and primarily a worldwide appreciated structural designer and consultant. His sensitivity as a designer I could appreciate so much during many of our peer-to-peer discussions regarding design concepts and structural issues. I was delighted to discover that Prof. Lee and I have a common view and shared feelings on our profession, the same passion and dedication to it, which he always conveys to me with impressive lucidity and deep analytical skills.

As a result of our discussions on structural engineering, the idea of a new Conference, dedicated to "The Conceptual Approach to Structural Design", came to me as a forum to share such vision and make it flourish over the years; so, while I unveiled my idea to the CI Premier friends, in 2003, I wanted Prof. Lee to be the first Invited Lecturer of the newborn Conference. He gladly accepted my heartfelt invitation and his talk became the birth mark of a conference that was later successfully brought to Italy, in Milan and Venice in the years 2005-2007, and that will be held once again in Milan in the next month of July.

While my personal friendship with Prof Lee was growing stronger over the years, it was natural to a person of his kindness to be willing to get closer to my family too: this allowed my wife Annamaria and my daughter Elena to be introduced to him and to appreciate his good natured and warm hospitality.

Every time we meet, we all share our common love for culture, discuss classical music, or even enjoy concerts all together, in the beautiful setting of the Singapore Auditorium. We have beautiful dinners during which we love hearing about the many stories and adventures of his life, mostly about his travels around the US to go and listen to the most important classical interpreters wherever they were playing.

That's why I am so glad and honoured to be here today, as a friend, as a family man and as a representative of the Italian scientific community, to pay my respect and express my appreciation of Prof. Lee's lifetime achievements, thanking him in particular for being the living example of a designer, a scientist and an engineer of excellence, a powerful source of inspiration to that same excellence for so many young engineers, particularly his former students, that are now important scholars themselves and will perpetuate his teachings with pride and humility.

My warmest congratulations, Prof. Lee, from a fellow engineer that feels honoured and proud to call himself your friend.

**Professor Franco Mola**  
Politecnica di Milano, Italy

## Personal Message

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February 9, 2011

Professor Emeritus Seng-Lip Lee  
Department of Civil Engineering  
National University of Singapore, Singapore

Dear Professor Lee,

It is my great honor and personal pleasure in writing this message on the occasion of the special symposium organized by your former and current students and colleagues to honor you for your immense contributions to engineering education, research and practice, and excellent services to public communities.

Allow me to start from my own collection of written records and end with recalling various real anecdotes which have touched me greatly.

At the *Pisidhi Karasudhi Symposium*, August 3-5, 2006, I said / quoted: Please allow me to speak from a prepared note; because on this occasion (Dinner Reception on August 3) I cannot afford failing to impress the magnificent persons, who were my Ph.D. Advisors at Northwestern University 40 years ago!

- **Dear Professor Seng-Lip Lee** and Professor Leon M. Keer; among many things, you are to me arithmetical (+ – × ÷) signs:
- You are a + sign; for being an addition to the number of my good friends, and for having made possible lots of my professionalism addition.
- You are a - sign; for having made possible lots of my shortcoming subtraction.
- You are a × sign; for having made possible lots of my blessing multiplication.
- You are a ÷ sign; for having distinguished yourselves, and virtually differentiated teachers into divisions.
- **My Dear Professors:** The ultimate goal of any sensible persons in teaching profession is to join you in the ‘Division of the Most Excellent Teachers.’
- When I was young, my first hero (my own father) warned, “*Study or poverty!*”
- When I was working, my professional idol (Seng-Lip Lee) warned, “*Publish or perish!*”

On January 23, 2011, Shue Tuck Wong, Professor Emeritus, Department of Geography, Simon Fraser University, British Columbia, Canada, commented, “Pisidhi,.....I wonder how much of your education was due to your father's influence or that of Seng-Lip Lee and Leon M. Keer. How much of your education would you attribute to Northwestern University?” I replied, “Shue Tuck, .....To say to whom / which I would attribute most for my. ‘Being as I am:’ allow me to adopt the ‘antithesis’ style of Charles Dickens, i.e. ‘Love & Hate of Expectations.’ Love to meet the expectation of the ones I love / respect – that I would excel. Hate to meet the expectation of the ones I detest / deplore – that I would fail.”

### **Professor Lee, to follow are anecdotes selected by myself as being the mildest:**

When I was just a young (about 34 years old) colleague of you and listening to an inaugural speech, which I thought rather poor, I whispered to you standing next to me, “Professor Lee, am I stupid or is the speaker bull...(excreting)?” You whispered back, “Pisidhi, you are not stupid!”

Your most favorite term to commend anything (speaking, writing, thinking, or otherwise) is ‘rigorous.’

When you say, “Don’t bluff your way out with students!” you mean, “Don’t say that is a stupid question!” to whichever student who asks a difficult question that you do not know the correct answer. Instead, admit your ignorance and promise to secure for him the answer soon.

When you say, “Don’t be half-...(roostered)!” I interpret that, “Don’t be ill-prepared for or halfhearted in any mission.”

An old friend made a remark about me that I used to be a quiet young man but lately I have become rather philosophical and talkative like my Professor, Seng-Lip Lee. I replied that Professor Lee had made the same remark, and I had told him, “Getting old makes me less able to be physical, so I have to compensate by being more philosophical. And I have been listening to you guys long enough, it’s now your turn to listen to me bull...!”

On one occasion, you said, “Thank God for creating mediocre persons. Without them, our life would be harder.” But on another occasion, you said, “Recruit only the most competent candidate. An incompetent colleague will not only contribute nothing but also negatively.”

I would like to attribute my fair success in dealing with a perfectionist like you to being a son of my father. From early age, I have learned integrity, responsibility, to obey laws and orders, to respect the rights of other people, perseverance, non-procrastination, and punctuality. In short, “Fail to satisfy these principles, prepare to be scolded / punished.” Working with you has obliged me to sense the importance of proactiveness, high motivation towards excellence and extreme awareness of saving and investment. Moreover, both (you and my father) never accept flimsy excuses, unconvincing explanations and intangible evidences for credits, and both never forget what I have been assigned / commanded / demanded / ordered.

You know our family so well, because you were present at almost all of our important functions, such as our own and our both daughters’ weddings, my fifth cycled birthday celebration, my retirement-from-AIT parties, and the Pisidhi Karasudhi Symposium. One day, I asked you what is the nonmedical difference between ‘guts’ and ‘balls.’ When you shook your head, I said, “A guy with guts comes home very late in the night; smelling badly of booze, belt unbuckled, shirttails dangling outside his pants, lipsticks all over his face and shirt, shoeless and sockless. Upon meeting his wife at their front door, he says ‘I’m your boss. Don’t you ever ask me anything!’ A guy with balls, with the same conditions and under the same circumstance, would smack his wife’s butt and says, ‘You’re next!’” You chuckled but asked, “What is the punch line?” I replied, “If any guy in the story were me and his wife were mine, what should be the punch line.” Immediately you responded, “Murder!”

One day when you were 51 years old, I teased that you were old. You argued that you were just middle-aged. I retorted, “Middle-aged? You mean you are going to be around till the age of 102?” Both of us laughed, thinking it was a piece of good jokes. But more and more, you tend to show it’s not! Honestly, I’m now earnestly praying and wishing (for both of us) that I could fulfill my promise that I would call you on your every birthday – 102<sup>nd</sup> and whichever further beyond that.

Sincerely,



Pisidhi Karasudhi  
Emeritus Professor  
Asian Institute of Technology, Bangkok, Thailand

### **Prof Lee Seng Lip – a witty, brilliant and remarkable man**

The first time I met Professor Lee Seng Lip was in 1981 just before I left for my PhD study in Caltech. While I was not a student in NUS or a Senior Tutor of NUS, he was gracious in meeting me and offering a number of advices on my PhD study. At that time, he was already a world class professor before that term becomes fashionable in Singapore. He was part of a small group of incredibly productive and brilliant professors that was working in Northwestern University in the late 1950s and early 1960s that made Northwestern's Civil Engineering Programme one of the best in the world. After my PhD study in 1985, I decided to join NUS in early 1986 and my formal interactions with Prof Lee begin.

Right from the start, I was struck by his brilliance and his wit. He has an innate ability to quickly grasp the key issues of a problem that he is working on and has this uncanny feel of the physics that allows him to understand the mechanics without even doing the calculation. If my calculation did not agree with his intuition, I would check my calculations first before questioning him! This combination allows him to be able to propose many innovative ideas to solve difficult engineering problems. It was a delight to watch the Master at work! I am privileged to have this rare opportunity to work closely with him on a number of important projects and also in a number of major research projects.

The most significant project that I had worked with him was the re-use of clay slurry as a reclamation fill, and this was in the late 1980s when sand was available in abundance and also cheaply. Nevertheless, he had the prescience to appreciate the need to develop alternate fill to sand. Much of my later works on the development of alternate fills follow from that start. In tackling that problem, he was able to understand that the central requirement was to have as much solids as possible. This clarity of thought was the key to the success of that project. Many years later, when I saw the technique being repeated in a reclamation project in Korea, I was struck by the realization of how far he was ahead of the curve!

In talking about Lee Seng Lip, one must talk about his legendary wit, often showcased in colourful ways. While these pages may not be the best depository of his many witty remarks and jokes, those of us who have worked with him over the years have on many occasions been able to laugh heartily over these witty remarks.

In recent years, I am struck by the fact that as I become older, he seems to get younger! I would be thrilled if by his age, I would still be physically as strong and mentally as alert as he is today! I am delighted that we are holding this symposium to celebrate his many achievements, and indeed there are too numerous to list. I am certain we will hold another one when he turns 100, and as he has said before, "I am not sure about you but I will be there to celebrate at my party!"

**Tan Thiam Soon**

Vice-Provost (Education)

Professor of Civil Engineering

National University of Singapore



**A tribute to Emeritus Professor S L Lee**

I consider myself privileged to have attended Professor Lee's lectures on Theory of Plate and Shell, Theory of Elasticity and Stability in the graduate study. Both courses were heavy in mathematics but Prof Lee had made it easy by simple derivation of equations from first principle and with true to scale figures on the whiteboard. His extraordinary power of correlating theory with physical nature makes it easy for us. Besides, his art of spiking lectures with jokes which turned the class into outbursts of laughter had helped to keep us awake throughout his lectures. He is just such a humorous Professor, and such A Great Educator. We all admire him.

I am lucky to have worked closely with Prof Lee on complex projects in Singapore and the Region since graduation. His advice has kept me abreast of fundamentals of engineering, state-of-the-art construction technology, and the general development of economy and politics in this Region. I am glad to write this tribute for this symposium in his honour.

Regards,



Teh Hee Seang