

## **Speech by Surbana Jurong & Changi Airport Group's Chairman, Mr Liew Mun Leong at Professional Engineers Board Day of Dedication held at Sands Expo and Convention Centre, Marina Bay on 5 November**

Mr Desmond Lee

Senior Minister of State for Home Affairs and National Development

Er Ho Siong Hin

President Professional Engineers Board

Fellow Engineers

Ladies & Gentlemen,

Good morning,

Let me first thank the Professional Engineers Board for bestowing on me the Distinguished Professional Engineer Award. It is a great honour for me to accept this award.

This morning I would like to speak on three topics, namely, why I wanted to become an engineer, a snapshot of my engineering career, and finally, share some ideas of how we could possibly improve and uplift the engineering profession.

I wanted earnestly to be an engineer when young, inspired indirectly by my late father. He was a humble lathe turner in a shipyard who held his British engineer boss in awe and admiration, and with the highest esteem. He was “God” to him. To make him proud, I decided to study hard to be an engineer. That was the best inspiration my father gave me. And indeed, that was the best thing I have committed to, and done for myself.

In the first part of my career, I was practicing as a government professional engineer for 22 years. As a government engineer, I have had the great fortune to be involved in many pioneer national development projects. Recruited as the first civil engineer in MINDEF, I built camps and other military facilities in SAF camps during the early days of building up of our national defence.

I was also very fortunate to be one of the pioneer engineers in the team to develop Changi Airport. I built the first runway from day one in 1975 and was involved in the construction of

the first terminal building. Subsequently, I was responsible for the construction of the second terminal in Changi Airport. I then went on to lead a statutory board called the Singapore Institute of Standards and Industrial Research (SISIR) to help upgrade the technical competencies of our manufacturing companies in the early days of Singapore's drive for industrialisation.

After 22 years in the public service, I left and then spent the next 24 years in the private sector in businesses which capitalised on my engineering background and experience. I first started off my commercial stint managing a specialist engineering company for a few years and then progressed to found and lead CapitaLand, where my engineering training greatly helped me to value add, drive and lead a large real estate group. At the very least, I think no consultant engineers or contractors were able to "pull wool over my eyes".

In my current role as Chairman of Changi Airport, we are building the largest development project in Singapore. Surbana Jurong, which I also chair, is one of the largest Urbanisation and Infrastructure development consulting firms in Asia with 13,000 engineers, project managers and other development professionals. We have engineering, urbanisation and infrastructure projects in 40 countries, 113 cities. In both companies, my engineering experience was again put into best use and put me in good stead. I have gone one big career circle and reverted back to engineering again.

Engineering has been a very consummate and rewarding profession for me. Engineering has taught me to be numeric, logical and systematic in thinking about solutions to problems. It taught me to be a very pragmatic person and at the same time, never forgetting to be cautious and build in margins of safety in any plan. It has brought me career satisfaction and, modestly I would say, some personal success, which has gone beyond my own expectations. It made me what I am today. Engineering training has served me well in my past 46 years' career. I am truly grateful that I studied to become an engineer.

Enough of myself but what about the engineering profession in general? Frankly, as most of the professional engineers here will acknowledge, it is not a rosy picture. Twenty years ago, our top students were selected and awarded with government engineering scholarships above other study subjects. Many later became permanent secretaries, some even cabinet ministers. Minister Desmond Lee's father, Mr Lee Yock Suan, who topped the 1963-year cohort, was my Queenstown Secondary School classmate. He graduated as a chemical engineer, served in EDB and eventually became a cabinet minister. Some, like Er Tan Ee Ping started his own engineering consultancy firm, and others went off to excel in other vocations or businesses.

Now sadly, engineering seems to be a last resort for the relatively weaker students to secure an opportunity for university education. And unfortunately, when they graduate, they are not as comparatively well paid, some earning as much as 50% lower than lawyers, bankers and doctors. Somehow, they carry less status than these other professions and many switched careers to join them without trying even one single day in the engineering profession they laboriously studied for. They don't want to be underpaid and be an unsung hero in society.

This is happening all over the world, and in America too. Recently President Obama wrote in the Economist that "Too many potential physicists and engineers spend their careers shifting money around in the financial sectors, instead of applying their talents to innovating in the real economy".

I think the government is aware of this decline and deterioration in the engineering profession. They are concerned with the dearth of talent entering the engineering profession. The salary of government engineers has recently been upgraded. We have also adjusted our engineers' remuneration at Changi Airport and Surbana Jurong. But more has to be done. How serious is the problem, and how does that impact us as a society?

I did a cursory study of how engineering can affect our economy. I found that currently some 42% of various sectors of our economy would require engineers in their respective industries. Guess what would happen to 42% of our GDP if these sectors do not have enough qualified engineers, or if they are second graders or are incompetent? Can we compete with others globally then? What has gone wrong with the profession within a short period of 20 or 30 years? What can the profession, the related institutions and the Professional Engineers Board do to help reverse such a damaging down trend and deterioration?

In the mid-80s, I was an engineer in the then Public Works Department and I double-hatted as the Registrar of the PE Board. I think I have some insights of the profession and working of the Board. Let me give you my take on this.

The first principal role of the PE Board is to register Professional Engineers who have the accredited qualifications, and have acquired adequate practical experience to practise in Singapore. The second role is to regulate their professional practices to perform and conduct themselves in full compliance with the Professional Engineers Act. We were very stringent with registration and as the registrar then, my favourite statement against lowering of standards was that if the board was relaxed and negligent, we may have inadvertently given a PE the "licence to kill". And we were equally serious in enforcing the

PE Act to ensure their strict compliance. Our then-legal counsel Goh Joon Seng, who later was made a High Court Judge, and I, took tough stance on errant PEs. We diligently took several PEs to task.

I then realised that many PEs lacked a basic understanding of legal and other commercial aspects in the management of their practice. They were also not familiar with relatively simple financial matters, and these deficits may inadvertently trip them into contravening the PE Act. It is useful for their business practice if they receive some basic education in legal and financial matters. I therefore started to organise both legal and financial training courses so that they did not fall foul in their corporate practices.

I would like to congratulate the PE Board for eminently discharging its role in the registration of engineers and enforcement of the PE Act. But I would encourage the Board to do more to promote and develop the engineering profession to prevent further decline as engineering competencies are so vital to our economy.

This morning, I am happy to hear that the Board has embraced the registration of other engineering disciplines beyond the three main traditional branches of Civil, Mechanical and Electrical engineering. Recently, I read the PE Act again and the Board indeed may prescribe “other branches of engineering” for registration. If the engineering profession crucially affects more than 42% of our GDP, I would strongly encourage the Board to put other non-traditional engineering disciplines (e.g. those involving say robotics, system engineering, biotechnology etc.) affecting our economy under its purview. In addition to national development, engineers are important players in economic development, and hence the wider profession has to be developed and promoted to attract talents to them.

How could the Board assist in the promotion and development of professional engineers in Singapore? Yes, they are the regulator but it will be very helpful if the Board also considers expanding its mission to help promote and develop the profession in a more holistic way. For example, it could organise formal development courses like finance, accounting, legal, project management and other management courses to upgrade the overall managerial and leadership quality of the PEs. It could possibly be done in collaboration with the Institution of Engineers Singapore but I think it would be more assertive and effective if the Board takes the lead in this initiative. The Singapore Medical Council and Law Society are apparently more successful in helping and championing their respective professions in such ways.

If the Board is to expand its role to cover other multi-disciplinary engineering fields and to also help promote and develop the professional in a more comprehensive way, then more

resources would have to be invested in. For example, the Registrar could be a full time job like the full-fledged CEO of a statutory board with appropriate support administrative staff. I did this Registrar's job on a part-time basis 30 years ago, and I know it is not proficient and tough having to report to two bosses.

Singapore's main strength is our human resource and converting our talents into more productive human capital like professional engineers will make Singapore a more technologically competitive economy. This could be a strategic goal for the PE Board and perhaps IES to play its part here. I imagine many PEs will welcome such an expanded mission to not only regulate them, but also to help promote and develop the profession with more meaningful roles. If not, who else can they turn to? The above is my personal view, and as a PE for more than 40 years I would welcome these changes and I hope that the PE Board can play a strategic role in championing the engineering profession.

Once again, thank you for this great honour. I will continue to be active and contribute to nurture the profession in my own ways. For example, I have been doing forums and lectures to engineering students as a pro-bono Provost's Chair Professor (Practice) in the Engineering Faculty of NUS. With this award, I sincerely hope that I can inspire our young talents to take up engineering training and to build a fulfilling and rewarding engineering career. That was what I did when I was young. Indeed, the best thing I have done for myself is to study to become an engineer.

Thank you.

Liew Mun Leong,

Chairman

Changi Airport Group,

Surbana Jurong Group