Engineering greatness

Almost a generation apart, two engineers talk about the profession, their experiences and the future of the industry in Malaysia.

By **RICHARD LIM**
educate@thestar.com.my

LOOK around Kuala Lumpur today and you'll see the many marvels of engineering.

Heritage lairs like Istana Budaya and skyscrapers like the Petronas Twin Towers speak for themselves and Malaysia's many power grids and water pipelines point to another sphere of engineering.

Going further, academia will show that engineers have reshaped the world. Frederick Winslow Taylor not only stuck to his trade but influenced 20th century business with Scientific Management.

With so much to boast of, one is inclined to think that there is never a dull day in the life of an engineer.

The beauty of small things

The general perception of engineering is that it deals with giant structures but this is not always the case.

Chartered engineer and former Institute of Engineers Malaysia president Dr Ting Wen Hui, 73, is one who shares this view.

"A lot of people may associate engineering with big things but this isn't always the case," he says.

"For example, civil engineering is all about creating, improving and protecting the environment in which we live.

"We do design and construct grand structures like tall buildings and bridges but first and foremost, we make sure things work right."

Universiti Tunku Abdul Rahman Institute of Postgraduate Studies and Research director Prof Dr Lee Sze Wei, 43, agrees.

Specialising in electrical and electronic (E&E) engineering, Prof Lee talks about the daily grind of E&E engineers when it comes to churning out product designs and ensuring that a plant's output is on track.

In his view, the availability of engineers in the right fields has led to Malaysia's steady growth for decades but times are changing.

Changing lanes

Although thousands of engineering students receive their scrolls every year, Prof

DR TING: Standards should not be lowered for the sake of passing.

PROF LEE: Malaysia now needs a new army of research and design engineers.

Lee opines that this does not meet Malaysia's immediate needs.

"There are many graduates but few engineers actually go into research and development," he says.

"There aren't enough qualified research and design engineers to meet the demand of multinational companies (MNCs). The job opportunities are there but only a few can grab them."

Agreeing, Dr Ting points out that many things have changed.

Looking back at the "good old days" he points out that local engineers served Malaysia well at a time when MNCs were outsourcing.

"Big companies really liked us in the 70s and 80s," he recollects.

"We had lots of technical engineers who would do good work and unlike cases in other countries, they would never rip off any ideas or product designs to start their own offshoot.

"It was good as it brought in foreign direct investment but it was also a warning sign that we had problems when it came to innovating."

And with innovation at the forefront of business today, both Prof Lee and Dr Ting feel that the inadequacies of engineering – and engineers – in Malaysia are being exposed.

Back to school

Part of the problem, they feel, lies with the expectations of students and the way engineering programmes are run in universities.

A Universiti Malaya student from 1954 to 1958 and subsequently a lecturer, Dr Ting proceeds to point out the differences.

"Classes were more engaging then and passing a subject came with a real sense of achievement as marking was strict and there were many who failed," he says.

"Although it was hard, the system brought out the best in students as they had to outdo themselves.

"I'm not saying allowing more people to pass is a bad thing but certain standards must always be upheld."

Dr Ting continues by bemoaning the day when peer reviews were stopped in UM as they provided checks and ballances and this ensured that nothing was taken lightly.

However, the buck does not stop with lecturers and programme coordinators for Prof Lee, who cites student preference as another barrier.

"Quite a number of students can't seem to wait start working," says Prof Lee with a laugh.

"They don't even consider postgraduate qualifications and you can't be a research engineer without a Masters degree."

Show me the money

Prof Lee believes that this could be down to the cash nexus.

Postgraduate courses do not come cheap and unless a student is fortunate enough to get a scholarship, finance could be a barrier to entry.

"I see this as a problem and this is the reason why institutions like UTAR charge lower fees for their Masters programmes," he says.

The cost-benefit analysis may also complicate matters.

"Many MNCs offer good students jobs even before they graduate," continues Prof Lee.

"While this is great for students but it also means starting a career early and sometimes they'll never go back to university.

"And MNCs complain that we don't have enough research and design engineers!"

To counter this and keep the best minds in university -- for a while longer – Prof Lee believes that more incentives should be given to postgraduate students.

He lauds the government's MyBrain15 programme that aims to produce 100,000 researchers and PhD holders in the next 15 years.

He hopes that more follow-up efforts will be made.

The way of the future

Perceptions on engineering must also change, according to Dr Ting.

"Engineering is very broad based and people must see this.

"Engineering students in the United States and Europe cross over to economics and management easily.

"Many end up working in banks and consulting firms. And the best part is that they move back to engineering or even academia.

"We need to have that mobility here. It'll enrich not only engineering but every other sector and that will truly contribute to nation building."