

by theresa tan

ENGINEERS have always been at the heart of civilisation and progress, says Mr Aziz Merchant, 45.

From extracting scarce resources of oil and natural gas from the sea to sending the latest communication satellite into orbit, engineering is about "making things that people can use to improve the world", says the general manager for group engineering and design at Keppel Offshore & Marine, one of the largest offshore and marine groups in the world, with over 20 yards and offices worldwide.

"There is no better feeling than that of accomplishing something great. And in engineering, you do just that.

"Imagine looking at an offshore rig, a ship, buildings or bridges you have designed or picking up a new invention you have created," he says.

"As an engineer, you are able to see the tangible difference you make to the world.

"The most fulfilling aspect of my profession is seeing something that I have designed being constructed and utilised."

For example, he points out that Keppel FELS — the offshore arm of Keppel Offshore & Marine and the world's leading designer, builder and repairer of mobile offshore rigs — has revolutionised drilling operations.

Its semi-submersible drilling tender (SSDT) can be deployed next to a floating platform in depths of up to 2,000m.

Conventional drilling tenders can only be deployed next to fixed platforms, of which most are located in shallow waters of less than 152m.

Hence, the Keppel FELS SSDT has made it possible for companies to dig for natural resources in deep waters previously out of reach.

And while an engineer's work is crucial for human development, mistakes

'It's essential to the fabric of modern life'

The engineering profession will be in greater demand as the world faces unprecedented challenges, says Mr Aziz Merchant of Keppel Offshore & Marine

can be deadly.

He says: "All of us make decisions every day, but the decisions that engineers make may determine if a bridge will hold a car or if it will collapse under its own weight; or whether a drilling rig can withstand strong winds and currents while operating in the deep ocean."

Hence, analytical and problem-solving skills are essential qualities that engineers must possess, says Mr Merchant, who has almost two decades of experience in the offshore oil and gas development industry.

He graduated from University College London with a Master of Science in naval architecture. His first degree was a Bachelor of Engineering (first class honours) in naval architecture and ocean engineering from University of Glasgow.

Persistence is another crucial quality engineers must be armed with.

The ability to communicate with others is also important, given that engineers work in teams and with a wide spectrum of people.

Keppel Offshore & Marine has carried out many projects where construction was done in one country while the engi-

neering work was carried out in two different locations.

And engineers have to constantly upgrade their skills and competency to meet evolving challenges, he adds.

In this industry, the challenges include developing new technology to support exploration and production efforts, as the hunt for oil and gas moves into deeper waters.

On a global scale, climate change is perhaps the largest challenge facing mankind now and engineers have to find solutions to keep Mother Earth going, says Mr Merchant.

He explains: "Engineers can help to develop renewable energy technologies that could change the way we heat our homes, drive to work or even travel.

"Engineers will be challenged in the

coming years to design new and more efficient products or inventions that will help us meet the aim of reducing greenhouse emissions."

This means that engineers have to explore ways to make oil rigs and ships lighter, so that they are more fuel-efficient and safer.

But the perennial challenge remains — to do more with fewer resources; to do things faster and better than ever before.

And engineers do not have to worry about being out of a job, he adds.

In fact, the demand for engineers and professional engineers will increase as they are needed to find solutions to the world's unprecedented environmental and economic problems.

He says: "Engineering is essential to the fabric of modern life. It is a good time to think about becoming an engineer — you can be assured that your services will be in demand."



Mr Merchant (with yellow tie) is part of the team behind the Keppel FELS semi-submersible drilling tender design (right) that won the Institute of Engineering Singapore Engineering Award last year. PHOTOS: KEPPEL