

THE STRAITS TIMES  
**RECRUIT Careers in Engineering**

# Setting the stage

A career at DSTA enables Mr Steve Ong Kwee Siang to pursue his love for engineering and contribute to the nation's security

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— Mr Steve Ong Kwee Siang, manager, Building and Infrastructure Programme Centre, Defence Science and Technology Agency



by hazel tan

PHYSICS lessons during his days in Chua Chu Kang Secondary School helped spark Mr Steve Ong Kwee Siang's interest in engineering.

"I was very intrigued by the physics lessons on the Newtonian laws in secondary school and developed an appreciation for the scientific principles governing the forces and motions in our daily lives," says the Nanyang Technological University graduate who holds a first class honours degree in Bachelor of Science (Civil Engineering).

He adds: "It was fascinating to consider how a skyscraper, despite its vast height and weight, could stand firm and unwavering under all weather conditions.

"The desire to understand how such structures are designed motivated me to study engineering and led me to choose it as a career eventually."

After obtaining his degree, he joined a civil engineering consultancy firm where he had a hand in designing the residential tower in the Marina Bay Financial Centre.

"That was when I felt the heavy responsibility on a civil engineer's shoulders really sinking in," recalls Mr Ong, who also has a Master of Science (Project Management) from the National University of Singapore.

"The hundreds of lives of the occupants in the building all depend on the civil engineer doing his job well.

"The seriousness and responsibility of my job was impressed upon me early on in my career, and I began to develop a deep appreciation for the contributions of engineers to society."

## Making an impact

The desire to make a difference to society and to the lives of fellow citizens prompted him to consider a career in engineering in the public sector.

He joined the Defence Science and Technology Agency (DSTA) in 2010 as a senior engineer.

Says the 34-year-old: "Although I was doing well at the consultancy firm, I desired a job that allowed me to do more for Singapore's security.

"At DSTA, I found the perfect opportunity to combine my passion for engineering with a job that allows me to fulfil my dream of contributing to the security of my fellow Singaporeans."

Currently manager of the Building and Infrastructure Programme Centre, Mr Ong designs operational buildings in air and naval bases for the Singapore Armed Forces (SAF) and manages the construction of infrastructure projects end-to-end.

"What really separates my work from that of commercial civil engineers is the element of protective structure design, where I design structures to withstand the potential effects of weapons and explosive blasts," he explains.

These structures include essential operational facilities in air bases and naval bases.

Mr Ong also assesses existing and new buildings to improve their resilience against potential threats.

This challenges him to delve beyond his field of civil and structural engineering and requires him to consider other aspects of a building, such as the mechanical and electrical components, architecture and security requirements.

As part of his development, he has attended overseas trials to observe the effects of explosive blasts on buildings, all of which have given him valuable real-life experiences that help him in designing protective structures for SAF.

He has also attended an overseas conference on the interaction of the effects of munitions with structures, which allowed him to learn from and network with some of the top minds in the field.

## Engineering the NDP stage

As co-chairman of the infrastructure and decoration committee at this year's National Day Parade (NDP) 2014, Mr Ong is in charge of the stage infrastructure of the floating platform and provides engineering advice to the committee on all infrastructure-related works.

His main task is to deliver the NDP stage, a project he describes as "most challenging but interesting".

"Engineering a stage on the floating platform is a new challenge for me as the floating platform has a more limited load capacity compared to structures on land.

"To maximise the load capacity of the floating platform, I carefully balanced the requirements of different stakeholders," he says.

For example, the NDP show committee's requirements for more towers to support the show's lights, speakers and LED panels had to be balanced against the number of performers on stage at any given time to manage the load capacity of the floating platform.

## Creativity begins with him

In today's world, engineers must be driven to excel and innovate or risk lagging behind.

Say Mr Ong: "Don't just look at it as a job. You have to 'own' the work you do.

"An engineer is just as important as a doctor, as what both do have a huge impact on the lives of people.

"Our world is always changing and there are new challenges around every corner for defence engineers. If you are not innovative in developing solutions, you run the risk of being left behind."

He thrives on coming up with innovative but cost-effective solutions to tackle projects that exceed his user's expectations.

"Not only is it very satisfying, but I am reminded of how my desire for a meaningful career is fulfilled with every project successfully delivered.

"Whenever I drive by these buildings, I feel a sense of accomplishment and my passion for my work is rekindled," he says.