

BCA AWARDS 2018



Technology helps in the design of enduring and memorable environments that inspire and engage people, says Ms Lim.
PHOTO: CHONG JUN LIANG

A step ahead

RSP sets high standards by embracing cutting-edge technology and other advanced methodologies

MEREDITH WOO

INNOVATIVE and forward-thinking design and construction methodologies were employed by RSP Architects Planners & Engineers to complete the Singapore Changi Airport Terminal 4 (T4) project.

The five-block terminal, with a total construction floor area of 376,000 sq m, was completed in just 37 months. It opened to the public on Oct 31 last year.

At this year's Building and Construction Authority's (BCA) Awards, the project won the Design and Engineering Safety Excellence Award.

Winning factors

By using off-site precast concrete and prefabricated structural steel design and construction, RSP was able to increase productivity, quality and site safety as it could produce the materials concurrently at a separate location, in a controlled environment.

"This helped us meet the earlier handover schedule for the installation and commissioning of the airport baggage handling system," says RSP's director Jessica Lim.

Using a full precast system approach for the departure level of the terminal building, RSP reduced the construction time by 64 per cent as compared to conventional cast in-situ construction.

For the first time in Singapore, the company employed the use of an advanced precast

mechanical beam shoe connector with anchor bolts, which enabled straightforward and robust installation, she adds.

The organisation also used an advanced Hat First construction methodology that allowed all erection works for 36 bays (each measuring 15m by 70m) to be completed in just 15 months.

Design for Manufacturing and Assembly (DfMA) principles were also employed at the fixed gangway structures. Prefabricated steel volumetric modular design made assembly swift.

"This minimised impact to existing live aircraft parking stands at airside," says Ms Lim.

At the forefront

RSP prides itself on being an early adopter of initiatives such as DfMA and prefabricated prefinished volumetric construction.

It also uses Mass Engineered Timber, a sustainable technology that enhances buildability, shortens construction time and significantly reduces energy consumption. It reduces cost as well.

In addition, the company uses the sophisticated building information modelling (BIM), which is extended to sub-contractors, fabricators and all stakeholders, as a collaborative platform.

Ms Lim says: "Technology is a big game changer for the built industry, which is always evolving. It is an enabler for us to design enduring and memorable environments that inspire and engage people, because that is what good design is fundamentally about."