

# Top award for engineer behind The Scotts Tower

He is among 6 engineers to win BCA prizes for solutions that overcame challenges in projects

Prisca Ang

Unlike many buildings here, The Scotts Tower has its entire structure held up by four inward-slanting columns and its residential units start only from the third floor up.

These features are part of the open-concept aesthetic at the condominium in Scotts Road.

Its load of 30 storeys is carried by a single, elevated floor plate, instead of extending down to the ground level, said the project's lead structural engineer Aaron Foong on Monday.

He is one of six professional engineers to win the Building and Construction Authority (BCA) Design and Engineering Safety Excellence Awards this year. The awards recognise engineering solutions that overcame project challenges and ensured safe design and construction.

The design of The Scotts Tower with the elevated floor plate frees up space on the lower storeys for an "open view" and room for residents to move around, said Mr Foong, who is also the lead engineer for NUS AS8, the new building of the National University of Singapore's Faculty of Arts and Social Sciences.

"Space is important because we are living in an environment that's very dense. Every single footprint area is valuable. If we can free it up

in a cost-effective manner, that is something we should strive for," said Mr Foong, who is from engineering company KTP Consultants.

There are very few buildings in Singapore that have such an "open view" concept in its lower storeys, he added.

During the construction process, his team faced challenges such as unfavourable soil conditions and close proximity to an MRT protection zone. The team also had to build a "second-generation foundation" on a limited space, due to the leftover foundation from the previous Cairnhill Towers on the same land area.

They overcame these challenges by using a dual-ring earth retaining wall, which allowed them to construct the tower and excavate the podium basement at the same time. The ring also enabled them to remove the soft clayish soil while protecting the MRT tunnels in Scotts Road.

The building also has an "outrigger transfer system" that stabilises its structure, among other innovative features. It is made entirely of concrete as it is cost-effective and durable, said Mr Foong.

Moreover, the material does not require regular maintenance, which is important for the building's critical structures.

The Scotts Tower has an estimated construction cost of \$105 mil-

## Scaling new heights

Concrete transfer system shoulders weight of 30 storeys

- 1 Twin mega concrete outriggers**  
Act as cantilever "arms" that transfer the load of all 30 storeys to the building's central core (blue).
- 2 Concrete belt ties**  
Connect with both the "arms" and slanted mega columns (brown) for integrated and enhanced lateral stability.
- 3 Overall transfer structure**  
The structure, built entirely of reinforced concrete, functions as a 1,200 sq m "transfer floor" that supports the weight of all the 30 residential floors above it.

SOURCE & PHOTOS: KTP CONSULTANTS, FAR EAST ORGANIZATION STRAITS TIMES GRAPHICS

lion. It was developed by Far East Organization.

For this year's BCA awards, the six engineers who won were behind eight projects recognised under the awards.

BCA group director (building engineering) engineer Chew Keat Chuan said: "By building taller and deeper in Singapore's densely built-up environment, engineers will have to continually change the way they build by using innovative, practical and safe solutions to overcome challenges, such as site constraints and unique design features."

Besides The Scotts Tower, the top award was handed out to engineers of the following developments: SBF Center, NUS AS8 and the Singapore Management University School of Law building.

The engineers for these developments received merit awards: H2O Residences, Galaxis, Grace Assembly of God church, and the Intra-Island Cableway on Sentosa island.

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Mr Aaron Foong at The Scotts Tower. The design of the condominium with an elevated floor plate frees up space on the lower storeys for an "open view" and room for residents to move around, he says. ST PHOTO: ALPHONSUS CHERN