Canton Tower

Facts

Official Name  Canton Tower
Other Names  Guangzhou TV Tower
Structure Type  Tower
Status  Completed
Country  China
City  Guangzhou
Street Address & Map  Yiyuan Road
Postal Code  510310
Building Function  telecommunications / observation
Structural Material  composite
Proposed  2004
Construction Start  2005
Completion  2010
Official Website  Canton Tower

Companies Involved

Owner/Developer  Guangzhou New TV Tower Co., Ltd.
Architect  Information Based Architecture
  • Design
  • Architect of Record  Guangzhou Design Institute
Structural Engineer  Arup
MEP Engineer  Arup
Main Contractor  Guangzhou Municipal Construction Group JV;
  Shanghai Construction Group
Other Consultant  • Landscape  Guangzhou Design Institute
  • Lighting  Arup
Material Supplier  • Elevator
  • Paint/Coating  Otis Elevator Company
  • Jotun

About Canton Tower

Located on the banks of the Pear (Zhujiang) River, Canton Tower stands across from the new main central business district of Guangzhou and creates a visual axis through the center of the city’s tallest skyscraper cluster. The axis begins in a park space to the south of the tower footprint and travels northward, crossing the river and running through the center of a large rooftop park spanning the top of a subterranean mall ringed with high-rise buildings. Continuing northward, the axis passes through additional open spaces, bisects a stadium and ends at CITIC Plaza, Guangzhou’s first supertall building, completed in 1996.

Canton Tower was constructed as a composite tube-in-tube design, featuring a reinforced concrete core containing all of the tower’s services and vertical transportation which is then set inside an outer structure made up of a steel lattice. The two structural components then frame a series of smaller structures suspended within the tower at different elevations. The smaller structures contain occupiable spaces with elliptical floor plates which rotate in orientation over the height of the tower. The rotation is then expressed to the outside of the tower through the twisting form of the steel skeletal structure, further emphasized through tapering inward to midpoint before expanding outward towards the uppermost levels. The roofs of the smaller structures within the tower have publicly accessible skygardens, allowing visitors to experience the variations of weather at different heights while serving as outdoor observation decks.
The slender form of the tower’s design makes it especially vulnerable to sway on windy days, creating the possibility for stresses on the structure and uncomfortable conditions for the occupants. As such, the design required the inclusion of a tuned mass damper system, the final compilation of which is comprised of a hybrid mass damper utilizing two 650 ton water tanks supplemented by motorized active mass dampers working in synch as the structure begins to move.

After sunset, the entire structure is illuminated in a light display of changing colors through an integrated system of LED fixtures; ensuring Canton Tower is a highly visible feature of the Guangzhou skyline during the day or night.

### Canton Tower

#### CTBUH Initiatives

**Vertical Transportation: Ascent & Acceleration**  
12 Sep 2017 – CTBUH Research

**A New Leader for Telecom Towers**  
19-19 Feb 2014 – CTBUH Research Report

#### Research Papers

**World’s Highest Observation Decks**  

**A New Leader for Telecom Towers**  

**Hybrid Mass Dampers for Canton Tower**  

#### Other Building Facts

Has world’s highest post office at 428 meters.

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