

# Ultra-fast lifts in race to the top

The race to build ever taller skyscrapers has sparked a battle among lift manufacturers to develop new-age elevators. High-speed lifts in China's 632-metre-tall Shanghai Tower will travel at 18 metres per second

## Shanghai Tower

Designed by Gensler (U.S.)  
121 floors

### Elevators:

106 – built by Mitsubishi Electric.  
Distance of 578.5m between basement and top floor

**310-kilowatt motor:** Drives pulley

**Aerodynamic capsule:** Reduces air resistance

**Ceramic brakes:**  
Can stop lift within 15 metres if car moves too fast

**13-tonne counterweight**

**2016: 20.0m/sec**  
CTF Finance Centre, China

**2015: 18.0m/sec**  
Shanghai Tower, China

**2004: 16.8m/sec**  
Taipei 101, Taiwan

**Twin rails:**  
Guide elevator

**2014: 10.2m/sec**  
One World Trade Center, U.S.

**2010: 10.0m/sec**  
Burj Khalifa, UAE

**1974: 8.1m/sec**  
Willis Tower, U.S.

**1931: 7.1m/sec**  
Empire State Building, U.S.

**1930: 4.5m/sec**  
Chrysler Building, U.S.

**Rollers:** Accelerometers and electromagnetic actuators inside rollers counteract vibration and swaying.

**Air pressure control system:**  
Stops pressure imbalance in passengers' ears