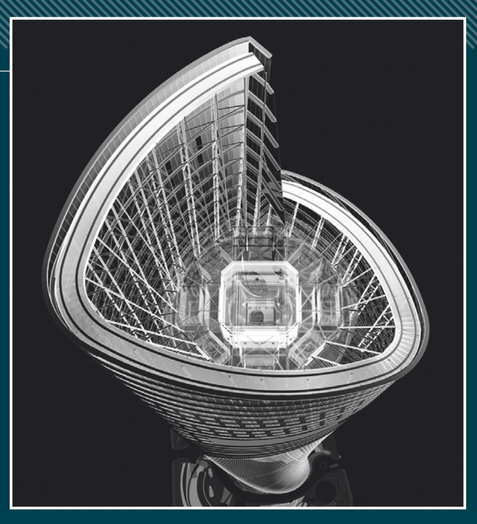
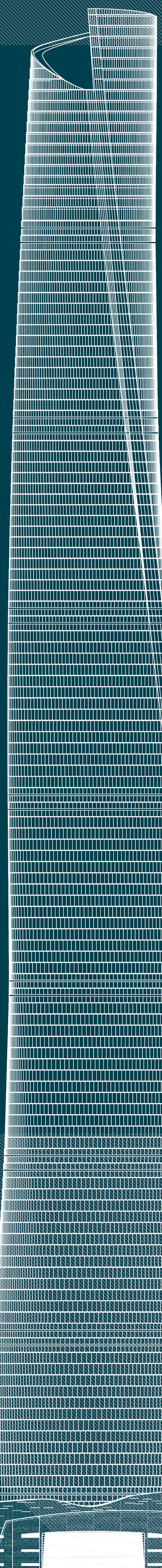
SUPERSIZED SUSTAINABILITY

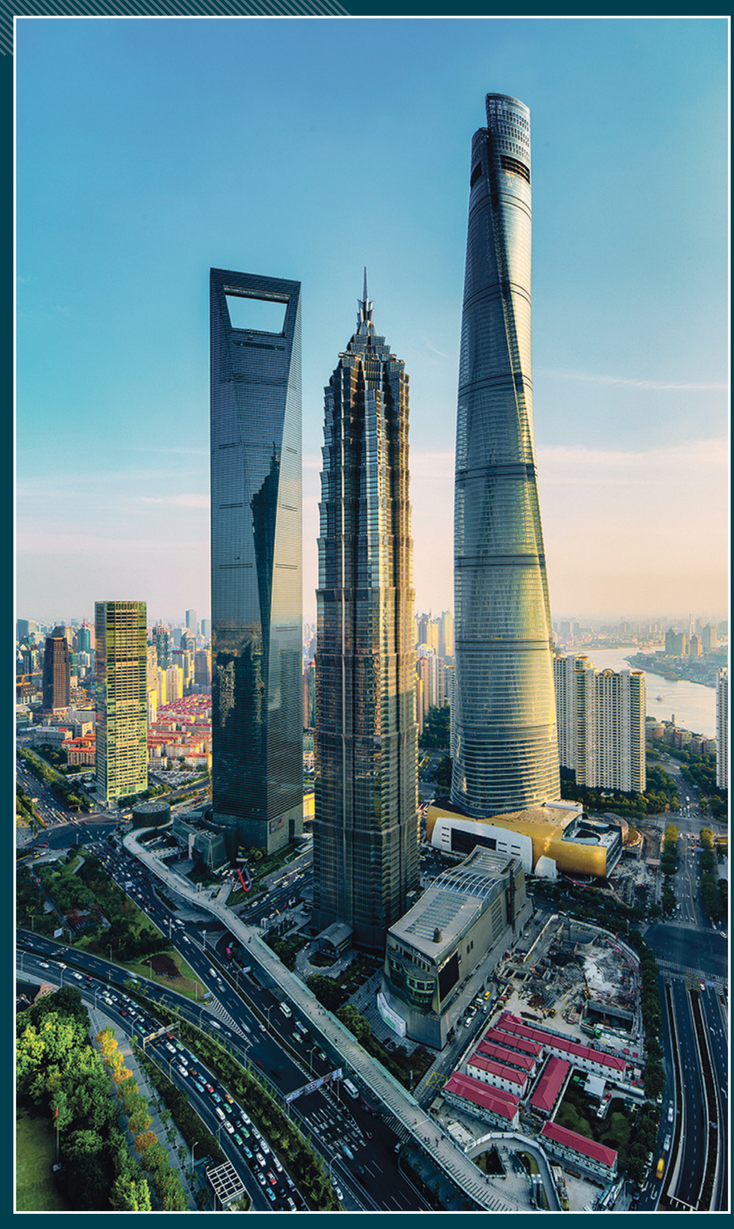
The $2.4-billion, Gensler-designed, mixed-use Shanghai Tower is not only China's tallest building but the second-tallest in the world, standing at 632 metres high (2,073 feet). The 127-storey spiraling highrise combines cutting-edge sustainable strategies with both private and public spaces. Here are some of the features that make it the epitome of urban resilience and innovative green design

01 WATER EFFICIENCY

The building's state-of-the-art water conservation practices include water harvesting in the crown and on the podium terraces, which is then used for landscape irrigation and other uses. The greywater recycling systems also located lower down the tower reduce potable water demand by around 40 per cent.







The tower's 43 different sustainable strategies reduce its carbon footprint by 25,000 metric tonnes a year, gaining it both LEED Gold certification and a China Green Building Three-Star rating.

02 POWER GENERATION

Wind turbines at the top of the building, 270 in total, provide power for exterior lighting while a 2,130 kilowatt natural gas-fired cogeneration system provides electricity and heat energy to the lower areas.

03 DOUBLE FAÇADE

The so-called transparent second "skin" that wraps the building not only creates large community atria at each of the tower's nine zones but also acts as an insulating blanket to reduce energy use for heating and cooling. The circular inner-glass façade required 14 per cent less glass than a square building of the same total floor area.

04 INTELLIGENT ENERGY

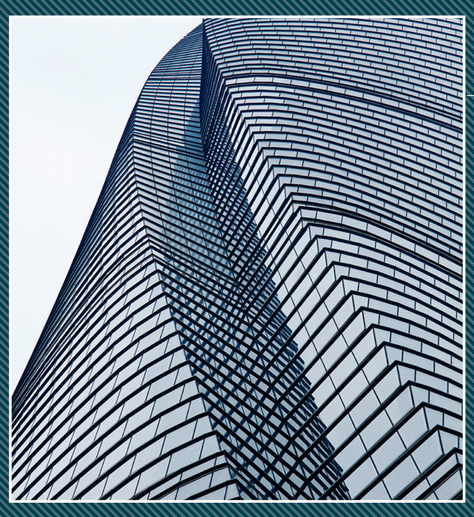
The building systems lower energy costs by monitoring and adjusting systems such as lighting, heating, cooling, ventilation and self-generated power. Lighting controls alone are estimated to save more than $556,000 each year in energy costs.

05 GREEN LIVING

The tower's nine vertical zones of hotels, office space, and retail and cultural facilities are able to accommodate a population of 30,000 people. The innovative structure of the building – a central circular core with a second outer "skin" that twists and tapers – creates light-filled atria to house the tower's 21 sky gardens with plants and trees.

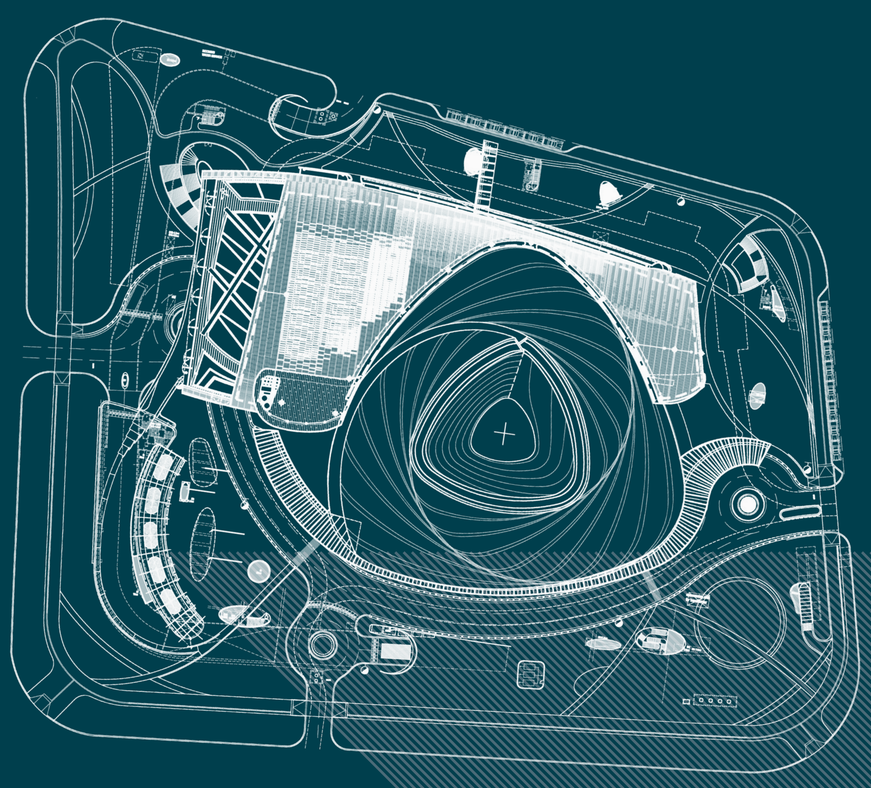
06 TOWER STRUCTURE

The tower's asymmetrical form, tapering profile and rounded corners enable the building to withstand typhoon-force winds that are common in Shanghai. Through its 120-degree rotation from its base to the top, the design reduces building wind loads by 24 per cent, saving $58 million in structural costs.



Images and blueprints provided by Gensler

AERIAL VIEW OF SITE



BUILDING FACTS

OWNER AND DEVELOPER	Shanghai Tower Construction & Development Company
CONTRACTOR	Shanghai Construction Group
DESIGN ARCHITECT	Gensler
LOCAL DESIGN INSTITUTE	Tongji Architectural Design Group
STRUCTURAL ENGINEER	Thornton Tomasetti
ENGINEER	Cosentini Associates
LANDSCAPE ARCHITECT	SWA

Images and blueprints provided by Gensler

RACONTEUR