Wind Energy-Generating Skyscraper

ENVIRONMENTAL

Energy savings of approximately 50% compared to China's baseline energy code and associated conventional design guidelines.

ECONOMIC

Pearl River Tower's design offers increased revenue potential resulting from the elimination of fan rooms and the reduction of airshaft sizes.

→ The Pearl River Tower, located in the city of Guangzhou, China, is one of the world's most energy-efficient high-rise structures.

The 309-meter Pearl River Tower's sculpted body directs wind to a pair of openings at its mechanical floors, where **turbines generate energy** for the building. Integrated solar panels, a double skin curtain wall, a chilled ceiling system, under-floor ventilation, and daylight harvesting are additional technologies that contribute to the building's energy efficiency.

The tower's integrated design approach results in a substantial decrease in the amount of electrical power required to operate the building's cooling, heating, dehumidification, ventilation, and lighting systems. Full implementation of Pearl River Tower's sustainability strategies will result in overall **energy savings of approximately 50%** compared to China's baseline energy code.

Why a Sustainia100 solution?

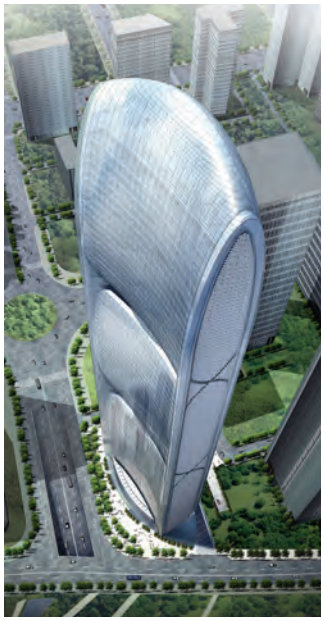
Energy efficiency coupled with onsite renewable energy generation reduces the need for electricity from fossil-fuel power plants, lowering energy-related greenhouse gas emissions. The Pearl River Tower addresses the difficult task of constructing sustainable high rises.

Developed in USA

Deployed in China

"PEARL RIVER TOWER SHOWS THE SHAPE OF THE 21ST CENTURY—A HIGH-PERFORMANCE DESIGN THAT INTEGRATES ARCHITECTURE, ENGINEERING AND TECHNOLOGY TO CREATE A HIGHLY SUSTAINABLE SUPER-TALL BUILDING."

RICHARD F. TOMLINSON, II, PARTNER, SOM



The tower's sculpted body directs wind to a pair of openings at its mechanical floors, where traveling winds push turbines, which generate energy for the building.

Solution by Skidmore, Owings & Merrill LLP