Jin Mao Tower

Facts

Official Name: Jin Mao Tower
Other Names: Jin Mao Building
Structure Type: Building
Status: Completed
Country: China
City: Shanghai
Street Address & Map: No. 88, Century Avenue, Pudong New Area
Postal Code: 200121
Building Function: hotel / office
Structural Material: composite
  - Core: Reinforced Concrete
  - Columns: Concrete Filled Steel
  - Floor Spanning: Steel

Construction Start: 1994
Completion: 1999
Official Website: Jin Mao Building

Rankings

Global Ranking: #24 Tallest in the World
Regional Ranking: #17 Tallest in Asia
National Ranking: #13 Tallest in China
City Ranking: #3 Tallest in Shanghai

Original Companies Involved

Owner/Developer: China Jin Mao Group Co. Ltd
Architect:
  - Design: Skidmore, Owings & Merrill LLP
  - Architect of Record: Shanghai Institute of Architectural Design & Research
Structural Engineer:
  - Design: Skidmore, Owings & Merrill LLP
  - Engineer of Record: Shanghai Institute of Architectural Design & Research
MEP Engineer:
  - Design: Skidmore, Owings & Merrill LLP
Main Contractor: Shanghai Jin Mao Contractor
Other Consultant:
  - Façade: Permateelisa Group
  - Fire: Rolf Jensen & Associates
  - Lighting: Fisher Marantz Stone
  - Quantity Surveyor: Langdon & Seah
  - Vertical Transportation: Edgett Williams Consulting Group Inc.
  - Wind: Alan G. Davenport Wind Engineering Group
  - (not specified): AECOM
Material Supplier:
  - Ceiling: Armstrong World Industries
  - Cladding: HALFEN
  - Construction Hoists: Alimak Hek
  - Elevator: Mitsubishi Elevator and Escalator
  - Paint/Coating: AkzoNobel
  - Seals: Dow Coming Corporation
  - Steel: Nippon Steel & Sumitomo Metal
About Jin Mao Tower

The Jin Mao Tower, a mixed-use complex containing offices, convention space and a hotel and in 2013 became the tallest and the longest-operated building in China to receive a LEED-EB: OM (Existing Buildings: Operations + Management) Gold certification. Its high performance has been achieved with the assistance of a computerized energy management system, which has been in place since the building opened, and is integrated with the broader enterprise asset management (EAM) system.

Management tracks a variety of performance metrics, including electricity, water, and natural gas consumption from month to month, and maintains key performance indicators (KPIs) around non-energy metrics, such as preventative maintenance, fixed asset purchases, requests for repairs, complaints, cost analysis and equipment information records. The paperless processing associated with the system also contributes to the building's low carbon-emission footprint. Beginning in August 2013, to promote indoor air quality (IAQ) the building's managers began tracking PM 2.5 particulate values in office areas, and broadcasting the results daily on social media.

These performance measurement approaches have been augmented by consulting with the Association of German Engineers, which has helped Jin Mao develop computerized equipment management systems to help maintenance staff optimize the equipment life cycle, quality and cost. A fluid energy metering system measures the flow of water through 89 sensors distributed throughout the building. An electricity metering system remotely and automatically measures electricity consumption of large equipment through a network of 300 sensors, allowing comparison of current and historical energy consumption. Together, these systems provide an objective data foundation for energy-use analysis.

Each month, building managers hold an energy-consumption analysis meeting and clarify energy expenditure of each main equipment category, including water, electricity, and natural gas. The management team actively compares year-on-year and month-to-month consumption statistics, referencing the building automation system's daily control log, to make informed decisions about where energy-saving strategies should be implemented next. Specific action items are then drawn up for specific people, who take charge of implementing these measures.