

Mapletree Business City Shanghai and VivoCity Shanghai

LOCATION

Junction of Qixin Road and Gudai Road, Minhang District, Shanghai, China

SUMMARY

The combined Mapletree Business City Shanghai (MBC Shanghai) and VivoCity Shanghai is an integrated office and retail development located in the Xinzhuang CBD of Shanghai's Minhang district.

TYPE AND SCALE

MBC Shanghai offers 200,000 sqm of Grade-A office space in seven blocks, and is directly connected to the 120,000 sqm five-storey (with two basement levels) VivoCity Shanghai shopping mall.

TIMEFRAME

Groundbreaking for the combined development was held in March 2013. Constructed in phases, VivoCity Shanghai is expected to be completed in the first half of 2016 and MBC Shanghai in the second half of 2016.

COST

Ongoing

MAIN STAKEHOLDERS

The development is jointly owned by Mapletree India China Fund (MIC Fund) and Mapletree China Opportunity Fund II (MCOF II).

INFORMATION

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CONTEXT AND DRIVERS

Mapletree is committed to developing environmentally friendly properties. This is driven by the view that sustainable developments not only minimise environmental impact, but enables its users to enjoy cost savings as energy and water consumption lowers.

DESCRIPTION

Spanning 11.9 hectares and comprising two Mapletree signature developments – Mapletree Business City and VivoCity, the Minhang development will cater to the growing demand for decentralised, cost-effective quality office space, and provide retail and lifestyle options to the business and residential communities nearby. For their environmentally sustainable design, both developments were awarded the LEED Gold and Silver level (precertification) respectively.

STRATEGY

Vision

With MBC Shanghai and VivoCity Shanghai, Mapletree aims to set a new environmentally sustainable benchmark for large-scale integrated developments in China.

Goals and Targets

- To address the growing demand by companies for cost-effective and quality office space solutions outside Shanghai's traditional CBD areas.
- To offer a comprehensive range of lifestyle and recreational amenities to meet the requirements of the working community and over 300,000 residents living within a three-kilometre radius.
- To create a unique work and play environment that is grounded in an environmentally sustainable infrastructure.
- To generate sufficient energy and water savings within three to four years to offset the additional construction cost of installing green features.

KEY FEATURES

- **Façade Optimisation** – MBC Shanghai and VivoCity Shanghai are installed with high performance windows that will reduce unwanted heat gain for the indoor environment, thus enhancing the indoor condition for end-users and reducing air-conditioning requirements. The façade of the MBC Shanghai office towers is also shaded and orientated at an angle that reduces solar heat transfer into the buildings.
- **Indoor environmental quality and greenery** – VivoCity Shanghai will feature Shanghai's largest open-air rooftop garden, accounting for over 20% of the mall's total site area. Apart from providing shoppers a moment of respite, the lush landscaping of the rooftop garden also absorbs heat and helps to reduce the mall's cooling needs. The mall's skylight design further generates energy savings by allowing natural light to flow in, thereby reducing lighting requirements during the day.

In addition, MBC Shanghai and VivoCity Shanghai are installed with advanced air filtration and versatile air conditioning systems, allowing both properties to maintain a good indoor air quality of PM2.5 reading at all times as well as offer a comfortable indoor environment all year round.

- **Energy Savings** – MBC Shanghai and VivoCity Shanghai are equipped with a range of energy efficient features including boiler systems with combustion efficiencies of over 90%. Recognising that chiller plants are energy intensive, both developments have a well-designed system that allows for a lower than average circulating chilled water flow rate. Installation of other efficient systems is underway, such as primary variable flow chilled water pumps, centrifugal chillers and cooling towers with variable speed drives (VSD) to ensure chiller plant efficiency. Collectively, it is estimated that these features will reduce electricity consumption from 0.7-0.8kW/RT to 0.56kW/RT. Against the ASHRAE 90.1 baseline, both developments enjoy energy savings of 10.97 million kWh annually.
- **Water Savings** – With the adoption of a comprehensive water recycling system, consumption of potable water is reduced at both developments. In particular, recycled water from the office towers at MBC Shanghai are channelled to VivoCity Shanghai, where it is used to meet half of the mall's irrigation needs. Annually, the developments generate water savings of 49,800,000 litres of water, enough to fill almost 20 Olympic-sized pools (assuming each pool has a capacity of 2,500,000 litres).

IMPLEMENTATION

Approach

MBC Shanghai and VivoCity Shanghai are jointly developed by MIC Fund and MCOF II, and Mapletree Investments Pte Ltd is responsible for the overall project management. Aedas and Aurecon Consulting Engineering are the design architect, and the mechanical and electrical systems engineer respectively. Constructed in phases, Shanghai Construction Group is the main contractor for MBC Shanghai for Phase 1 and Shun Jie Construction is the main contractor for the subsequent phases.

Critical Success Factors

- By incorporating sustainable design from the start of the project, Mapletree incurred less than 6% increase in construction costs from the subsequent installation of green features.

PROGRESS AND OUTCOMES

- For their environmentally sustainable design, MBC Shanghai and VivoCity Shanghai have been awarded the LEED Gold and Silver level (precertification) respectively.
- Energy savings generated are expected to offset the additional cost incurred from the installation of green features within three to four years.
- Upon completion, MBC Shanghai and VivoCity Shanghai seek to achieve LEED Gold and Silver certification respectively.