

Press release

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Designs for green super-high tower in Moscow unveiled

Foster and Partners Moscow City Tower - taller than any other building in Europe - is a striking new addition to the dynamic high-rise skyline of Moscow City. With its unique form, this new landmark will be visible from the heart of Moscow. The building continues the practices investigation into the nature of the tower, taking structural, functional, environmental and urban logic to a new dimension. The mixed-use project - incorporating apartments, hotel, office and leisure space - will have an energy cycle that will pioneer sustainable architecture and reinforce the economic and social vitality of Moscow City.

Based on a highly efficient geometry derived from the triangular plan, the vertical city is a powerful triumvirate of three arms that meet at a central green spine running the full height of the tower. Wider at the base and tapering towards the top, the pyramidal form is elegant and slender in profile, and benefits from a highly efficient composition to achieve the maximum stability with the minimum structure, as well as the most effective distribution of space. The tower is aided in resisting wind loads by a series of sloped fan columns extending diagonally upwards to the spine from the broad, triangular base. Overlaid by columns set at a reverse angle, this unusual oblique lattice carries the buildings load while also giving it its distinctive geometric façade.

At ground level, the dramatic and vibrant gateway into the site slopes downward into an inverted pyramid that houses an extensive retail space and a public ice-rink. The site is well-connected to Moscows world renowned underground transport system, and there is also underground parking provided. With retail and offices generating higher density use towards the base - residential, hotel and serviced apartments are located in the higher smaller floorplates. Mixed-use presents a strong case for energy balance, dependent on the residential components using energy at different times to office and retail.

By harnessing the heat created by the offices in winter and the cooling properties of the ground in summer, the energy cycle is a hot water circuit that runs through the building, distributing the energy to regulate the temperature and heat water throughout the day and the year.

The triangular volume of the tower is carved out on three sides to create independent arms with thin floorplates. This distinct diagram maximises daylight penetration and views, providing large, double-aspect, flexible, column-free offices. At ground level, there are three separate addresses, for office, hotel and residential, and rising up the centre of the building, there are a series of green skygardens that draw in natural ventilation and provide key circulation and social space.

The higher floors containing residential and hotel accommodation are designed as a series of modular units that can be individually configured. Apartments benefit from fresh air, natural light, double or triple height volumes and access to skygardens, creating a unique lifestyle in the heart of Moscow - an

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opportunity to escape the city within minutes, while benefiting from a diverse choice of amenities and access to a vibrant community. At the summit, a publicly accessible viewing deck with cafes and bars creates a magnetic new attraction for both visitors and residents of Moscow.

Facts and Figures

Client: STT Group

Location: Located in Moscow City, 5.5km from the Red Square

Building Type: Mixed-use, super-dense, vertical city for 25,000 people

Uses: Offices, hotel, shopping, leisure and residences with private gardens
Public spaces and observation deck

Site Area: 21,935m²

Total Gross Area: 520,800m²

General Building Data

Height to top of building: 600m

Height to top occupied floor: 500m

Width of floor plates: 21m

Typical floor to floor height: 4.25m

Number of lifts: 101

Number of car parking spaces: 3680

Number of floors above ground: 118 floors

Structural System

Composite steel and concrete fan column superstructure

Reinforced concrete core

21m clear span steel trusses with concrete on steel deck for office floors

Steel beams with intermediate columns with concrete on steel deck for the hotel, serviced apartments and residential floors

Sustainability

Tallest naturally ventilated tower in the world

Shallow 21m floor plates to maximise daylight and natural ventilation potential

Triple glazed high performance low energy façade

High-end comfort levels throughout

Photovoltaic cells feed electricity back into city grid, equivalent to lighting office space all year

Energy recycling within the vertical city reduces heating demand by 20%

Potential for thermopiles and river water cooling

Rain water and snow harvesting reduces fresh water demand for toilets by 30%

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Waste recycling

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