

CCTV Headquarters

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Height: To Tip
237.5 m / 779 ft

Height:
Architectural
234 m / 768 ft
Height: Occupied
213.9 m / 702 ft

Height: Observatory
162.9 m / 534 ft

Height: Helipad
234 m / 768 ft

Floors Above Ground
54

Floors Below Ground
3

of Elevators
75

Top Elevator Speed
7 m/s

Tower GFA
316,000 m² / 3,401,396 ft²

Development GFA
473,000 m² / 5,091,330 ft²

of Parking Spaces
2,702

Facts

Official Name	CCTV Headquarters
Other Names	China Central TV Headquarters
Structure Type	Building
Status	Completed
Country	China
City	Beijing
Street Address & Map	32 Dongsanhuan Zhonglu, Chaoyang District
Postal Code	100020
Building Function	office
Structural Material	composite <ul style="list-style-type: none"> Core: Steel Columns: Concrete Encased Steel Floor Spanning: Steel

Proposed	2002
Construction Start	2004
Completion	2012

Rankings

Regional Ranking	#393 Tallest in Asia
City Ranking	#11 Tallest in Beijing

Click arrows to view the next taller/shorter buildings



Companies Involved

Owner	China Central Television
Developer	General Office of CCTV New Site Construction & Development Program
Architect	Office for Metropolitan Architecture <ul style="list-style-type: none"> Design Architect of Record
Structural Engineer	East China Architectural Design & Research Institute
MEP Engineer	Arup
Main Contractor	China State Construction Engineering Corporation
Other Consultant	2x4 <ul style="list-style-type: none"> Access Acoustics Façade Food Service Landscape Lighting Stormwater Management Vertical Transportation
Material Supplier	Armstrong World Industries <ul style="list-style-type: none"> Ceiling Cladding Paint/Coating Steel

About CCTV Headquarters

The CCTV headquarters is an unusual take on the skyscraper typology. Instead of competing in the race for ultimate height and style through a traditional two-dimensional tower soaring skyward, CCTV's loop poses a truly three-dimensional experience, culminating in a 75-meter

cantilever.

CCTV's form facilitates the combination of the entire process of TV-making in a loop of interconnected activities. Two towers rise from a common production studio platform, the Plinth. Each tower has a different character: Tower 1 serves as editing area and offices, and the lower Tower 2 is dedicated to news broadcasting. They are joined by a cantilevering bridge for administration, the Overhang.

The main lobby, in Tower 1, is an atrium stretching three floors underground, and three floors up. It has a direct connection with Beijing's subway network, and is the arrival and departure hub for the 10,000 workers inside CCTV headquarters. Connected to the lobby, 13 production studios (the largest is 2,000 square meters) perform the main function of the building: TV making.

The CCTV headquarters also facilitates an unprecedented degree of public access to the production of China's media: a Public Loop takes visitors on a dedicated path through the building, revealing everyday studio work as well as the history of CCTV, and culminating at the edge of the cantilever, with spectacular views towards the CBD, the Forbidden City, and the rest of Beijing.

A Media Park forms a landscape of public entertainment, outdoor filming areas and production studios as an extension of the central green axis of the CBD.

The innovative structure of the CCTV Headquarters is the result of long-term collaboration between European and Chinese architects and engineers to achieve new possibilities for the high-rise. Early on, the team determined that the only way to deliver the desired architectural form was to engage the entire facade structure, creating in essence an external continuous tube system. The tube, which resists all of the lateral forces on the building and also carries much of the gravity force, is ideally suited to deal with the nature and intensity of permanent and temporary loading on the building.

The engineering forces at work are thus rendered visible on the facade: a web of triangulated steel tubes "diagrids" which, instead of forming a regular pattern of diamonds, become dense in areas of greater stress and looser and more open in areas requiring less support. The facade itself becomes a visual manifestation of the building's structure.

A versatile, efficient structure that bridges in bending and torsion between the Towers to create the continuous form of the Overhang section, the diagrid provides enough strength and stiffness in the Towers to carry loads to the ground. The structural system stiffens the podium and tower bases to favorably distribute loads to the foundation. It enables performance to be optimized, through adjustment of the bracing pattern, to satisfy contrasting demands of stiffness and flexibility.

The diagrid provides maximum flexibility for the bespoke planning of the interiors, since bracing is not needed within the floorplates. This allows large studio spaces to be laid out within the towers. It has enabled the Overhang section to be constructed without the need for temporary propping, since the braced skin provided stability as the steelwork was cantilevered out from the towers. This type of structure has a high degree of inherent robustness and redundancy, due to the potential for adopting alternative load paths in the unlikely event a key element's removal.

The self-supporting hybrid facade structure features high performance glass panels with a sun shading of 70 percent open ceramic frit, creating the soft silver-grey color that gives the building a surprisingly subtle presence in the Beijing skyline.

CCTV Headquarters

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Nov 2013 – Tour Report

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An Overview of Structural & Aesthetic Developments in Tall Buildings Using Exterior Bracing & Diagrid Systems

1 Dec 2016 – International Journal of High-Rise Buildings Volume 5 Number 4

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