CCTV Headquarters

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
  - Core: Steel
  - Columns: Concrete Encased Steel
  - Floor Spanning: Steel
- Proposed: 2002
- Construction Start: 2004
- Completion: 2012
- Rankings: Click arrows to view the next taller/shorter buildings
- Regional Ranking: #386 Tallest in Asia
- City Ranking: #11 Tallest in Beijing

Companies Involved

- Owner: China Central Television
- Developer: General Office of CCTV New Site Construction & Development Program
- Architect: Office for Metropolitan Architecture
  - Design
  - Architect of Record: East China Architectural Design & Research Institute
- Structural Engineer: Arup
  - Design
  - Engineer of Record: East China Architectural Design & Research Institute
- MEP Engineer: Arup
  - Design
- Main Contractor: China State Construction Engineering Corporation
- Other Consultant: 2x4
  - Access: DHV Building and Industry; dUCKS scène
  - Acoustics: Front Inc.
  - Façade: Romano Gatland
  - Food Service: Inside Outside
  - Landscape: Lighting Planners Associates
  - Lighting: Fast Flow Systems Pte Ltd
  - Stormwater Management: Lerch Bates Europe
  - Vertical Transportation: Jangho Group Co., Ltd.

- Height: Occupied: 213.9 m / 702 ft
- Height: To Tip: 237.5 m / 779 ft
- Height: Architectural: 234 m / 768 ft
- Floors Above Ground: 54
- Floors Below Ground: 3
- # of Elevators: 75
- Top Elevator Speed: 7 m/s
- Tower GFA: 336,000 m² / 3,401,396 ft²
- Development GFA: 473,000 m² / 5,091,330 ft²
- # of Parking Spaces: 2,702
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 façade: 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 façade 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.
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