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Acknowledgement

Breathing Envelope

Vertically-stacked convention center and public spaces, Bogotá, Colombia

Main authors

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Project data

Project group	Architecture, building and civil engineering
Client	Cámara de Comercio de Bogotá
Project background	Public commission
Planned start	March 2014

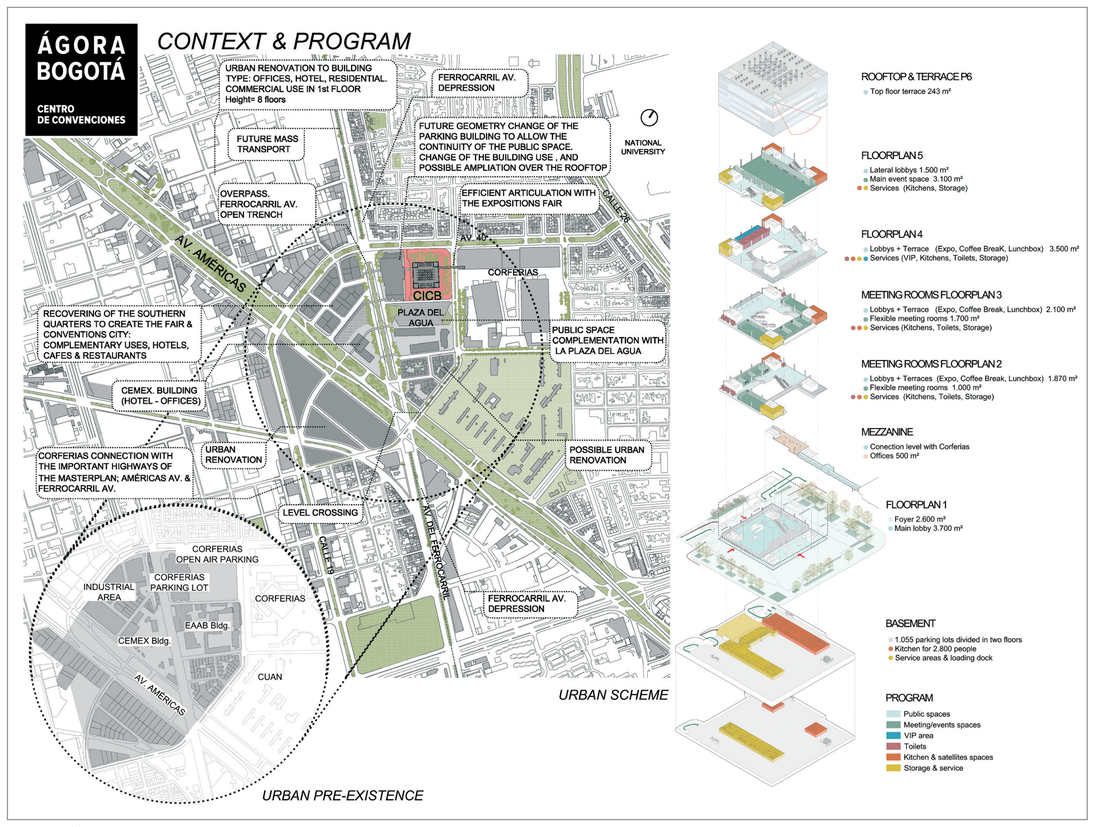

Image 1: *Ágora Bogotá* is part of the major urban regeneration strategy of Corferias, the fair and exhibition complex of Bogotá. The initiative aims to develop the fairground towards the grand avenues close by, transforming an old industrial quarter into a new urban centrality in the geographical heart of the city. In order to liberate public space in the dense surroundings, the project seeks verticality in a compact building with a stacked program in five levels of meeting rooms, lobbies and service areas.

Summary and appraisal by the jury

The new *Ágora Bogotá* (Bogotá International Convention Center) in Colombia will be unique. The program is stacked vertically to minimize the building's footprint and to correspondingly maximize the surface area of outdoor public spaces in the heart of the city. Illuminated and ventilated naturally through an actively responding and acoustically sealed enclosure, the building features high levels of flexibility without compromising its architectural quality. Daily fluctuations in temperature of up to 20°C require a specific approach to climate control. The project focuses on the optimization of natural ventilation and lighting, supported by refined control systems, to achieve optimal energy efficiency.

The jury values the dialog that the project establishes between the fields of architecture and engineering, with both disciplines mutually informing one another, ultimately combining state-of-the-art technologies with formal expression. The deployment of high-tech mechanical systems – for ventilation, lighting, heating, cooling, water management and power generation, including the use of surface geothermal energy storage – is done with restraint, leading to an architecture that appears noble, quiet and discreet – technology not for technology's sake, but at the service of users, architecture and the environment.

Sustainability concept

Progress: The equatorial mountain climate of Bogotá, with stable average temperatures (13.5°C) but high daily fluctuation (0 to 23°C), calls for a specific approach to climate control. Pursuing "free cooling", a breathing glass façade captures fresh air, treats it acoustically, and by natural draft, circulates it through the building. The façade perspires, as its fairly high U-value (4.5 W/m²K) allows heat exchange. Ranges of screen prints provide low solar factors to critical areas and expose other areas to heat the building naturally. Temperature and CO_2 sensors in the meeting rooms activate the motorized gills (Sp. branquias) which regulate air inlet and reveal the ventilation strategy. A weather station relates interior and exterior data, allowing the building to learn and improve its performance.

People: Initiated by a public-private partnership, *Ágora Bogotá* (Bogotá International Convention Center) aims to contribute to the economic, political and cultural development of the community, on local, regional and global scales. Its specific events, as well as the economic activity generated by its visitors, positions the complex as a powerful catalyst of urban and social change. The project draws on compactness and verticality to free-up missing public space for congregational and recreational use.

Planet: The project focuses on the optimization of natural ventilation and lighting, supported by refined control systems, to achieve optimal energy efficiency. The active façade offers low maintenance and a long life span. Native vegetation on the site enhances ecological corridors.
Prosperity: A convention center demands flexibility. The project favors vertical circulation, combines specialized and generic spaces and fits a varied event plan. A thorough cost and performance analysis resulted in minimum use of resources, without compromising the ambitious technical, architectural and environmental aspirations of the client.

Place: *Ágora Bogotá* settles in the midpoint of the city, halfway between the historic center and the airport. Expanding towards the main roads, the fairground district transforms an industrial area into a new centrality. Transparency is the primary aspect of the project, highlighting the structural over the decorative. Scarce materials, a continuous pavement, translucent ceilings and glass walls reveal its operation to the visitor. The concatenation of lobbies, halls, terraces and balconies mediate inside and outside and reveal the city's view with its stunning mountain backdrop.

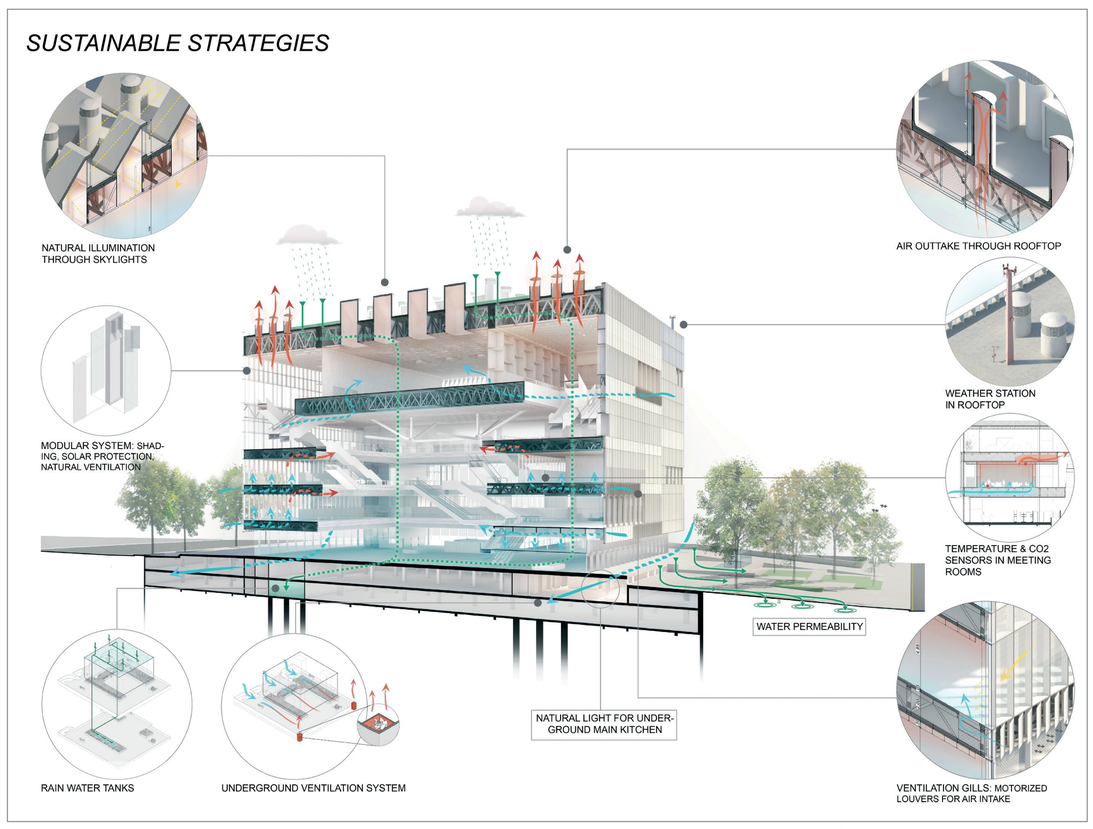

Image 2: The project employs an active breathing envelope in response to the city's particular equatorial mountain climate. Different strategies have been developed with a diverse team of architects, engineers and consultants. Natural lighting and ventilation provide a level of comfort unparalleled in the convention center building type, with minimal energy consumption. Rainwater collection, landscaping and a permeable covering of the surrounding public space complement the set of sustainable strategies.

Further authors

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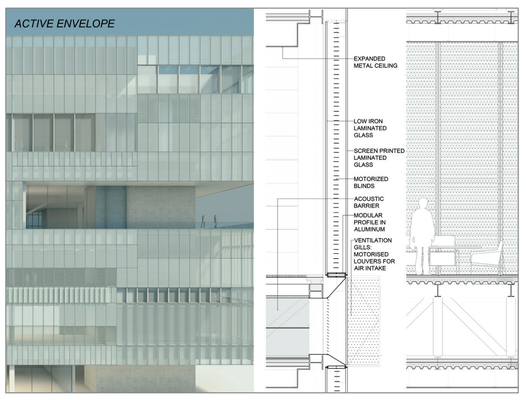

Image 3: Façade details: Motorized blinds and ventilation gills, acoustic barrier, screen-printed glass.

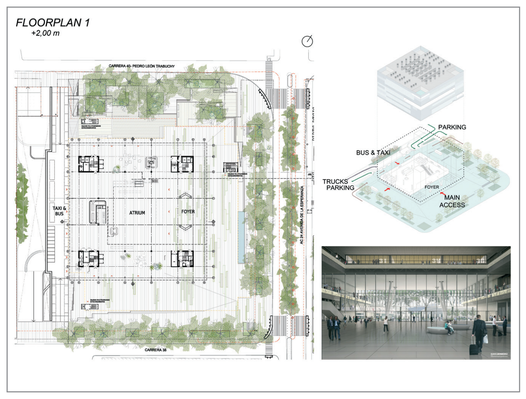

Image 4: Street level: Pedestrian entrances, lobbies and plazas, native flora enhancing ecology.

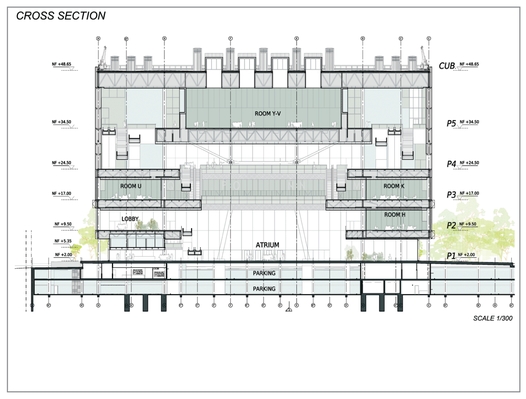

Image 5: Cross section: Main ballroom on top with exceptional city views, stacked lobbies enhancing air flow.

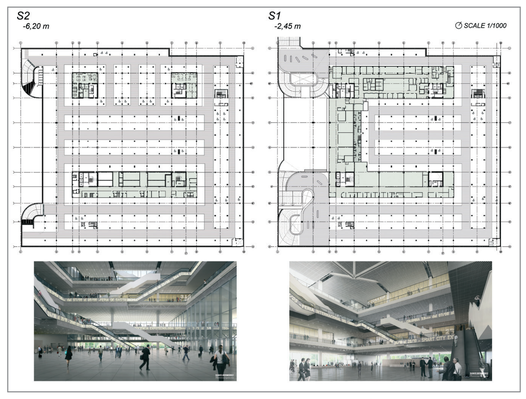

Image 6: Basement: 1055 car spaces and service areas (kitchen, storage, MEP) with independent vertical circulation.

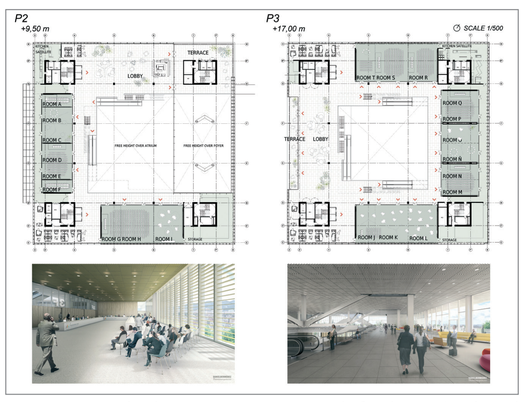

Image 7: Meeting levels: 4 main cores (structure, shafts, elevators) and spiral circulation around atrium.

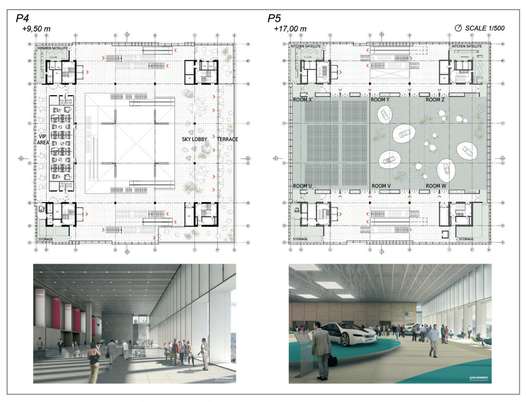

Image 8: Upper levels: Sky lobby with restrooms, terraces and VIPs on level 4 (P4), 4000 pax divisible ballroom on level 5 (P5).

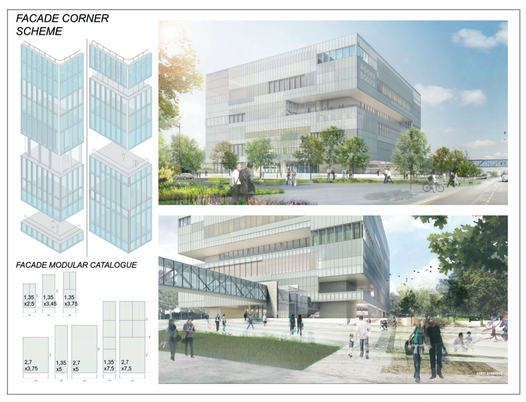

Image 9: Pedestrian views of building and public spaces: Glass façade dimensions and corner solutions.

Image 10: Night view: Notoriety through rationality, a new public icon for Bogotá.