

Greening up in ZUMA, Bogotá

Diagonal 57C Sur with Carrera 65

Bogotá, the capital of Colombia, has approximately 8 million inhabitants and is known for its leadership in climate action. The city has long faced challenges related to air pollution generated by the use of diesel-powered public buses, cargo trucks, and particulate matter from unpaved roads.

For this reason, in the south-west of the city, where 33% of the population lives, a transformative initiative has emerged: Urban Areas for Better Air (ZUMA), where an area is selected to progressively improve air quality, health and citizen well-being through targeted cross-sectoral actions to reduce pollutant emissions.

According to the particulate matter inventory for the city of Bogotá (2023), today most emissions in the south-west do not come from passenger transport, but from **resuspended material (40% of emissions)**, mainly from **unpaved roads (85% of these emissions)**, and from **mobile sources (28% of emissions)**, which originate mainly from **fossil fuel-powered freight vehicles (33% of this category)**.

In 2023, the first ZUMA was declared in the Bosa-Apogeo neighbourhood, surrounded by residential, industrial and commercial areas, where communities with high socioeconomic and health vulnerability live.

This area is located at one of the main exits of the city, the Autopista Sur motorway, which connects to the south of the country and is

surrounded by food industries, as well as the Tunjuelito River, which is part of the Media Luna Sur ecological connector.

The ZUMA is much more than an environmental plan; it is a project that seeks to improve the quality of life of its 38,000 inhabitants: 13.2% of the population living in the ZUMA Bosa-Apogeo is vulnerable, with children under 10 and adults over 60, equivalent to 4,698 people. Similarly, 16.6% of the inhabitants are between 20 and 29 years of age, 15.8% are between 30 and 39 years of age, and 14% are between 10 and 19 years of age (DANE, 2018). In addition, 63.2% of the population is in socioeconomic stratum 2, 36.2% is in stratum 3, and 0.6% is in stratum 1.

To make this strategy a reality, the city is implementing a plan of 39 actions. Among these actions is a renaturalisation and greening strategy. One of the priority areas for intervention is located in the 500m² Villa del Río neighbourhood, near the Autopista Sur motorway, in a residential area with green space on Diagonal 57C Sur with Carrera 65, an unpaved road with considerable traffic flow and parking use, adjacent to the Patio Madelena of the ETIB SAS Transport Service.

In this way, Bogotá breathes the future: a city that is renaturalising itself, reconciling with its environment and projecting itself as a model of sustainability and environmental justice for Latin America.



Approx. site area: 500 m² on Diagonal 57C Sur with Carrera 65, in the Villa del Río neighbourhood, within the ZUMA Bosa-Apogeo.

Key Information: Residential area with a large green space without vegetation cover and an unpaved road with high levels of resuspended material and considerable

traffic flow, which provides access to the ETIB Madelena yard of the Integrated Public Transport System (SITP).

Priority areas & main expectations: Proposals should reduce resuspended material, improve air quality, strengthen ecological connectivity, and create safe, inclusive, and resilient public spaces for the local community.

Presentation of the Site



The site

The site proposed for this competition is located within the perimeter of ZUMA Bosa-Apogeo, in the southwestern part of Bogotá, Colombia. It is located in the Villa Mayor neighbourhood, on Diagonal 57C Sur with Carrera 65. It is a mixed-use area, combining residential, industrial and commercial zones, as well as green areas.

The sector faces significant road infrastructure challenges, with unpaved sections such as Diagonal 57C Sur, which generate emissions of resuspended particulate matter and affect local air quality. It also has a high concentration of schools, kindergartens, medical centres and community recreation spaces, which means that a significant number of vulnerable people – children, the elderly and low-income communities – are exposed to the impacts of air pollution.

For this reason, the site offers high potential for intervention to reduce emissions, increase vegetation cover and improve the environmental quality and quality of life of its inhabitants through nature-based solutions and improvements in public spaces.

Urban Areas for Better Air - ZUMA

Urban Areas for Better Air (ZUMA) is a territorial management strategy led by the District Environment Secretariat, designed to promote the health and well-being of citizens through targeted actions that reduce air pollution in the city.

The lowest air quality levels are recorded in the southwestern part of Bogotá, where 33% of the city's population lives and where annual PM_{2.5} concentrations in 2023 reached 16.1 µg/m³, more than three times higher than the annual level recommended by the World Health Organisation (5 µg/m³). This situation has a direct impact on human health and the quality of life of residents.

The main sources of PM2.5 pollution in Bogotá come from:

- Particulate matter resuspended on roads (85% of streets are unpaved)
- Mobile sources of fossil fuels (28% of which 33% corresponds to freight transport)
- Fixed industrial sources

These figures show that the problem is not only environmental: it requires inter-institutional solutions, involving sectors such as mobility, public works and urban planning, with the capacity to implement joint actions that directly reduce pollutants and protect public health.

The ZUMA strategy focuses its efforts on reducing emissions and improving air quality in the most vulnerable areas. Bogotá is currently moving forward with the implementation of its first ZUMA, Bosa-Apogeo, which covers approximately 2.27 km² and benefits 38,000 people.

Actions underway in Bosa-Apogeo

Between 2025 and 2030, the District will implement an action plan with 39 measures distributed across eight dimensions: land use planning, climate action, control of mobile and fixed sources, reduction of resuspended particulate matter, air governance, decontamination technologies, and environmental monitoring.

The strategy is being developed in three progressive stages: first, the Emission Reduction Zone (ERZ), where the first control and mitigation measures are being implemented; second, the Low Emission Zone (LEZ), which reinforces the actions taken and promotes cleaner technologies; and finally, the Ultra-Low Emission Zone (ULEZ), geared towards long-term sustainability and definitive environmental transformation.

In 2023, the first ULEZ was declared in Bosa-Apogeo, selected for its high concentration of pollutant emissions, exposure levels and socio-economic vulnerability. In this zone, the city has implemented strategic actions such as:

- Air quality monitoring
- Improvements in urban infrastructure
- Creation of spaces for community participation to ensure local ownership of the project

Development Expectations

Bogotá seeks to improve air quality by transforming public space through renaturalisation strategies, connecting with open spaces such as Villa Mayor Park and the Media Luna Sur ecological corridor. In this context, the students' ideas will provide key input to guide the next design phases and consider real interventions in the area's renovation process.

The proposals are expected to transform the prioritised 500 m² area into a green space that positively impacts the health of the population, increases biodiversity and strengthens resilience to extreme weather events such as heat islands or heavy rainfall. This should also create spaces for leisure, recreation and community interaction, reducing stress and exposure to pollutants, and strengthening residents' sense of belonging.

To achieve these objectives, interventions may include gardens and vegetable gardens, planters and gardening activities, street furniture, green strips, surface permeabilisation, rain gardens or other types of small-scale Sustainable Urban Drainage Systems (SUDS) that increase green spaces and ecosystem connectivity.

These interventions should also seek to involve educational institutions and residents in the area through the use of roofs, facades, vegetable gardens, and planters. Given that

these actions are inter-institutional, with the participation of the District Environment Secretariat, the Mobility Secretariat, the Road Maintenance Unit, the Urban Development Institute, and the Mayor's Office of Bosa, ideas that facilitate this coordination will be valued.

Finally, proposals must reflect improvements in air quality, the recovery of public spaces, and the strengthening of the connection between people and their environment. They must also incorporate principles of sustainability, climate adaptation, environmental justice, and citizen participation, contributing to a greener, more equitable, and more resilient Bogotá.

City climate priorities and specific environmental challenges

Bogotá's Public Climate Action Policy sets ambitious goals to reduce greenhouse gas emissions by 50% by 2030 and achieve carbon neutrality by 2050, while strengthening resilience to climate risks such as floods, heat waves, and air pollution.

The main priorities to be considered in the proposed project are:

- **Design renaturalisation interventions** that improve air quality and urban resilience on Diagonal 57C Sur with Carrera 65, covering an area of 500 m², within the ZUMA Bosa-Apogeo.
- **Reduce exposure to air pollutants and urban heat islands**, especially in densely populated neighbourhoods.
- **Increase green areas and permeable surfaces** to mitigate flooding and promote biodiversity. It is advisable to take into account green spaces such as Villa del Río Park, ecosystem connectors and ZUMA water bodies such as the Media Luna Sur connector.
- **Strengthen community participation and inter-institutional coordination** to ensure long-term sustainability.
- **Encourage collaboration with the private sector and** corporate social responsibility programmes to incentivise investment in green infrastructure and the proposed design.
- **Integrate existing urban planning, mobility, and environmental projects** to build a healthier, more cohesive, and inclusive urban environment.

Students are invited to develop innovative and viable proposals that promote Bogotá's transition to a greener, more equitable and climate-resilient city.

Specific planning rules and regulations

Within the framework of Decree 492 of 2023, the Mayor's Office of Bogotá declares Urban Areas for Better Air and regulates the Bosa-Apogeo ZUMA as the city's first ZUMA, establishing guidelines to improve air quality through intersectoral actions and coordination between entities, communities and prioritised territories.

Among the objectives of this decree is to consolidate the ZUMA as an instrument of territorial environmental planning, especially in areas with high pollution and social vulnerability, as well as reducing emissions of air pollutants from mobile and fixed sources and resuspended material, with priority given to the Bosa Apogeo area, and coordinating air governance with the active participation of entities and the local community, promoting environmental education, culture and territorial appropriation processes.

Proposals must comply with the Territorial Planning Plan (Decree 555 of 2021) and take into account other instruments such as:

- [ZUMA Action Plan \(2025–2030\)](#)
- [Air Plan 2030 \(Decree 332 of 2021\)](#) and [Bogotá's Public Policy on Climate Action](#).
- [The Green Roof Guide](#), the [SUDS \(Sustainable Urban Drainage Systems\) Technical Standard](#), and the [Public Space](#) and Vegetation Cover [Manual](#), which promote the integration of green infrastructure and Nature-Based Solutions (NbS).

Interventions must be technically and normatively viable, respect land uses (residential, mixed, and public green spaces), and not interfere with protected areas or bodies of water.

Language requirements

Proposals must be submitted in English and Spanish.

City-specific awards

Visit to ZUMA with the community to share the winning proposal.