



Quito Metro

BRINGING THE WORLD'S HIGHEST CAPITAL UNDERGROUND





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The city's government created a masterplan for a metro to overcome the geographical and geological nature of the city

RESEARCH BY *Eurides Lopes*

Archaeologists have shown that Ecuador's capital Quito has a history which extends back over 5,000 years, making it one of the oldest cities in the world. This is at least in part due to the city's famous geography: at an altitude of 2,850 metres above sea level, defenders of the city were able to see enemies coming a few hours in advance. These days, it just means the views are spectacular.

The city has also maintained its stunning old town, complete with its architectural treasures of colonial and republican times, even as it grew to the north and south. This growth, the result of the city's population reaching an estimated 1.35 million people, was one of the reasons that the city's government created a masterplan for a metro to overcome the geographical and geological nature of the city.

The responsibility for delivering the project fell to the Metro Alliance Consortium, which is composed of two separate construction firms: Ayesa (Spain) and ILF (Saudi Arabia). Its General Manager, Edison Yáñez Romero was kind enough to take time out to speak with Business Excellence about the complexities of the project, its importance and the extent of its progress.

Background Information

Mr. Yáñez Romero began by informing us that the decision for a metro, rather than an over ground transportation system, was one borne out of practical considerations for the city: "Metro Quito was born from this need of

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the city to solve one of its deepest problems, that of mobility in the city. More than 400 thousand passengers per day and more than 1 million will be transported in the integrated public transport system."

Unlike many other metro systems, Metro Quito will be exclusively underground. Mr Yáñez Romero says: "The layout of the first line of the metro includes a route of 22 km, completely underground, with stations located between 1000 and 1800 meters, one from the other, while the tunnel will have a depth of 15 and 26 meters. It consists of 15 stations on a single line, plus the workshops and carports area, served by an initial fleet of 18 trains."

Socioeconomic Impact

At a cost of around US\$2 billion, Metro Quito may prove to be one of the most astute investments from a socioeconomic perspective that Business Excellence has ever covered. Mr Yáñez Romero estimates that around 20,000 people, composed of 5,000 direct jobs and about 15,000 indirect jobs, were employed during the construction phase alone (over 1% of the city effectively working on a single project).

Elsewhere, he also cites the high-level impacts that the project will have on Quito

once delivered: “The metro will enhance the socioeconomic inclusion of peripheral areas, develop a new culture for the city’s residents and a positive attitude towards quality public services and generate a remarkable improvement in the quality of life of Quito.” This includes the new business dynamics around the 15 “metro zones,” energizing their microeconomies.

Mr Yáñez Romero is also keen to underline that, over the course of the project, more than 1,000 social initiatives have been carried out,

including the community (schoolchildren, neighbours, underprivileged communities, etc.) benefitting more than 80,000 people in total. In addition, Consortium engineers have transmitted technical knowledge of the Metro Quito to more than 500 assistants in universities and educational centres.

Respect for its Environment

Metro Quito will run entirely on electrical energy, providing a significant boost to the on-street environment in the process. Of

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this, Mr Yáñez Romero says: “Yes, Metro Quito has amply demonstrated its commitment to care for the environment, ensuring compliance with current environmental regulations, and the optimal management of resources through its Consortium Line 1 contractor.”

Additionally, it will ensure compliance with international environmental standards of Multilateral Financing Banks of the project (World Bank, Inter-American Development Bank, CAF- Development Bank of Latin America and the European Investment Bank) through internal management and inter-institutional coordination with the other municipal and state entities.

Mr. Yáñez Romero states some of the environmental KPIs set by the Metro Quito

Did you know?

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Project, which have included: “managing more than 6 million kilograms of recyclable waste and reusing more than 100 thousand cubic meters of water, protection measures for more than 236 specimen of heritage trees, and continuous monitoring of environmental indicators such as air, water and soil.”

Strategic Partners, Suppliers and Contributors

The major strategic partner for the project has been Spanish firm, Acciona, which has worked with the consortium to deliver Line 1 of Metro Quito. Of them, Mr. Yáñez

Romero says: “they hired more than 5,800 workers, 95% of Ecuadorian origin. Currently, work continues on the implementation of social initiatives for employees in favour of their training and awareness of construction,



equity, occupational safety, sustainability and gender focus.” Other suppliers cited by Mr. Yáñez Romero are well-known industry players such as CAF Siemens, Bombardier and Thyssenkrupp.

Local suppliers have also played a pivotal role. He says: “I would even say local suppliers have exceeded expectations in many areas. For example, HOLCIM, the local cement supplier, who provided mass dispatches, with demands on time, design and safety, with more than 5,000m³ in a single office achieving efficiencies of 120m³ / hour and all previous planning, as well as personal trained and involved in the whole process.”

Strategic Partners, Suppliers and Contributors

When asked for what will make Metro Quito so special, Mr. Yáñez Romero is effusive: “the significant saving of personal time and improvement in the productivity of the

city, national savings thanks to reduced fuel imports, less environmental pollution, safer streets because of less transport, urban development around the project, empowerment of the historic centre, and more.”

The great news for Quito and its residents is that the metro is nearing completion. Mr. Yáñez Romero says: “At the moment it reaches an 86% progress in the construction phase, where architectural finishes are completed and the electromechanical, electronic, lighting and railway signalling facilities are developed.” Upon completion, Metro Quito will not only be the world’s highest metro, it will also be one of the highest in terms of standards. **BE**

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