

Medellín, Columbia

An environmental urban “in the process of success” story





Medillín lies in a long valley between two Andean mountain ridges and serves as the capital of Antioquia province, a fertile region famous for its coffee plantations and its orchid flower farms.

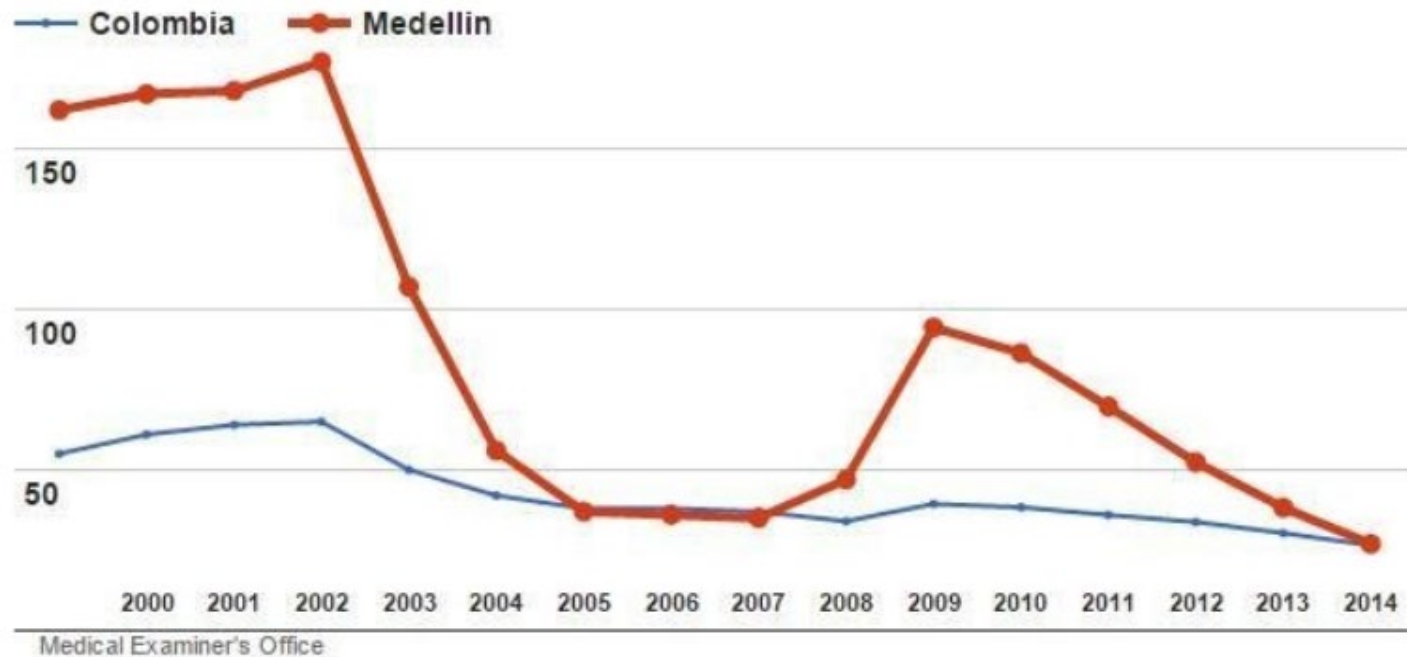
Its population is approximately 2.6 million people, significantly larger than the city of Phoenix.

In the early 1990s Medellín, the second largest city in Colombia, was the most violent city in the world. The homicide rate reached an unprecedented and chilling scale of 381 murders per 100,000 people in 1991. This was close to 40 times greater than the UN's definition of endemic violence, at 10 per 100,000 people.

Much of the violence can be attributed to the notorious drug-lord, Pablo Escobar, who used Medellín as a base for his cartel and controlled 60% of the world's cocaine, much of which ended up in the U.S.

The thriving illicit trade and turf wars between the cartel and the state led to high levels of violence that hit the poorest and most deprived parts of the city worst.

Medellin homicide rate



Source: [Colombia Reports](#)

Since the early 2000s Medellín has seen a remarkable transformation, with rates of violence plummeting. The rate of murders in 2015 was 20.17 per 100,000 people – still relatively high, but comparable to other large Latin American cities. In the last two decades Medellín has become a world-renowned center of innovation with a thriving civil society, and is beloved by city planners around the world for its innovative architecture and public infrastructure. In 2013 the city beat competition from New York and Tel Aviv to be granted the World’s Most Innovative City award, just one of 40 international prizes the city has been granted in recent years. [Click here](#) here for a look at how sustainability and urban environmental and social issues can be addressed with infrastructure





The Medellín River runs through the heart of the city

For much of the 20th century, the Medellín River was an open sewer, collecting the untreated human and industrial waste of the Aburrá Valley.

Stretching through the valley's center, Medellín — a fast-growing city with a reputation for entrepreneurship— turned its collective back and closed its collective nose. Warehouses and rail tracks buffered the city from the rank waters, fed by the hundreds of creeks that started out crystalline high above the city but collected raw sewage as they slalomed their way through the often informal neighborhoods that gradually expanded up into the hills.

“The river had very strong odors,” recalled Lucia Restrepo, 82, who has lived in the Conquistadores neighborhood near the river for the last three decades. “The water would be colored: one day red, and the next day blue. Now it looks normal.”

Medillín’s environmental success story centers on its 2018 opening of a large waste water treatment center. The water treatment plant can process 6.5 cubic meters of water per second, 24 hours a day. Logs of sludge that results from the process go through a dehydration centrifuge and end up as biosolids, distributed to local farmers to use as fertilizer. The resulting output of biogas — largely methane and carbon dioxide — provides for a portion of the plant’s energy needs. All told, it and another plant now treat 84% percent of the valley’s wastewater, compared to less than 40% in Latin America and the Caribbean as a whole and an astonishing figure in a country where some cities treat next to none.



Wellmer Env 101
Medellin's new treatment plant helps reuse wastewater and produces biogas.

Tackling transportation problems: air pollution, traffic congestion, and how to move people when a large segment of the population cannot afford cars or motorcycles



An above ground new rail system moves people within the city and transit stations are clean and offer something to look at (the New York City subway system it isn't!)



An art installation within the Suramericana station in Medellín



When the metro was constructed in 1994, it was the first positive thing that had happened in Medellín for decades. City planners unknowingly gave the citizens confidence. With the metro, it was realized that things could be different; that progress and change were possible.

Suddenly it was easier to get around the city. People got out of their barrios, their neighborhoods. They went to work in different places from where they lived. The metro became a vast bridge, joining disparate parts of the city. People mixed. They looked outward. It may be just a metro – but it changed the psychology of the city. Much different than Phoenix's long fight for metro in a high car-culture area.

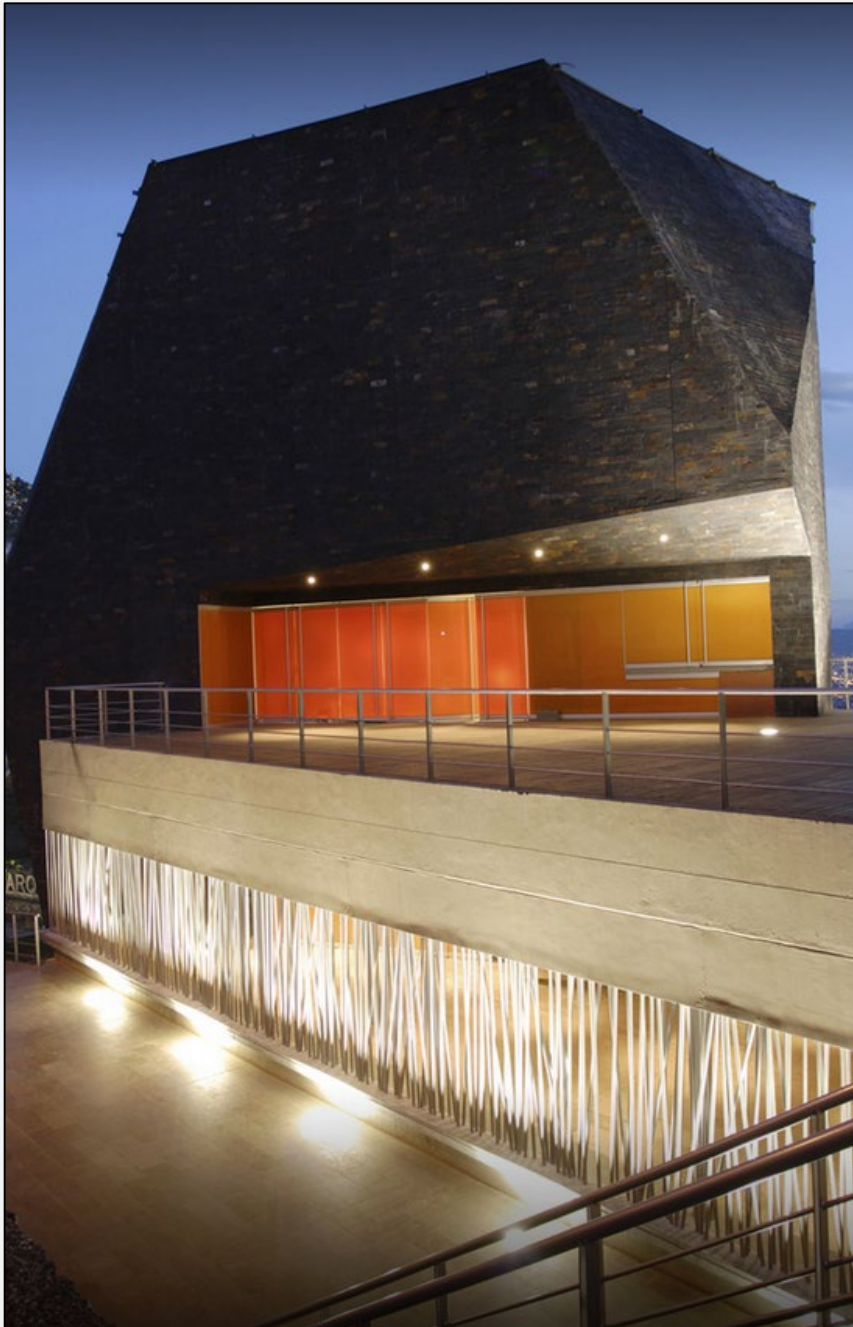
One of the most compelling signs of Medellín's renaissance is the Metrocable — a public transportation system of airborne gondolas that cruise up the hillside like ski lifts.



Medellin's cable cars | CREDIT: getty

One of Medellín's most forward-thinking infrastructure investments was the creation of outdoor escalators that run up the steep hillside leading to Comuna 13, a gang-plagued neighborhood formerly isolated by its position atop stairs equivalent to a 28-story building. The impoverished area has been revitalized by the 1,259 feet of escalators, which cut commuting times and enabled elderly and disabled residents, some of whom never left home, to go much farther afield.





A huge new library and community center – the Parque Biblioteca España – has helped the neighborhood’s transformation.

Designed by the Bogotá architect Giancarlo Mazzanti. The library (one of a growing number) is free and open to all and has become a center for a community that once lived in the middle of a war zone.

Just beneath the library, on steep slopes of crowded housing, the architect constructed a bamboo bridge between two warring neighborhoods. People said it was madness; they will kill each other. The opposite happened; they got to know one another.

How has all of this been payed for?

The central character in any discussion of Medellín's progress is Empresas Públicas de Medellín (EPM). Established in 1955 with the participation of local business leaders who believed dependable **public utilities** were crucial to the entrepreneurial city's workforce, EPM is a public entity with a presence in the city that is difficult to exaggerate. Part of its electrical and water profits is pumped back into city coffers; and it has a foundation that oversees extensive educational, cultural and community projects.

EPM's success is, in part, a result of being partially shielded from four-year mayoral election cycles. Though Medellín's mayor is chairman of EPM's board of directors, the company has historically operated with a considerable amount of autonomy. Unlike what happens in the rest of Colombia and other Latin American countries, this has permitted the company to make more long-term plans, beyond the single term of a mayor (Colombian mayors cannot serve two consecutive terms).



Essentially, the story of Medellín is an exaltation of the concept of cities as a *solution*, and not as a problem, to the global challenges we face.

Medellín is considered a success only because all the stakeholders, grouped around the public, private and citizen sectors, understood the value of defending its existence.

Pursuing the dream of improving the city they already had, rather than tearing the shacks down, infrastructure was designed to include the hillside shacks and residents to be a part of the city. Once people have access to electricity, potable water, and transportation, lives improve and flimsy shacks are improved upon.

No one claims that Medellín's transformation is a finished project. While the poverty rate has plunged over the past 20 years from its highs of 48 percent, in recent years it has leveled off at a still troubling 14 percent.



Today, Medellin has also become a beacon for what the developing world has to say about innovation. It has forged success as a testing ground for new social approaches to urbanization. From this approach, there are powerful lessons we can learn:

- 1. Cities do not make poor people.** Cities attract poor and vulnerable individuals looking for a better future. Therefore, they must be accepted and integrated into the city's dynamics in order to foster their individual and collective potential. As shown by the 8.9% reduction in poverty between 2008 and 2013, according to Colombia's department of statistics.
- 2. Architecture must never be a barrier to human interaction.** The best way to reduce inequality is to promote connections and face-to-face engagement between individuals, without regards to their socioeconomic condition.
- 3. Public and accessible urban services reduce inequality.** Allowing individuals across the board to enjoy a city, its surroundings and services are the best ways to make them active citizens.
- 4. Education drives change.** Placing libraries and other cultural assets alongside public transport systems played a central role in selling the new brand the city wanted to create for itself.
- 5. Using technology as a means and not as the end itself.** Medellin understood that whatever technological upgrades were needed, its success would rest with the function it fulfills and not in the scientific advancement it represents.
- 6. Last, but not least, placing culture high on the list of priorities helps to unleash a citizen's potential.** Culture plays a major role in a city's transformation due to its ability to bringing people together, to move forward from traditional socioeconomic paradigms, and to share a vision and common values.