

GREEN INFRASTRUCTURE: AN ALTERNATIVE SOLUTION FOR STORMWATER MANAGEMENT

To fight against floods, the development of natural filtering materials is a solution in Mexico City

OVERVIEW

- Organization data:
 - ✓ Name: **EeTestudio**
 - ✓ Organization type: **Private company**
 - ✓ Year of foundation: **2015**
- Beneficiaries : **Population of Mexico City**
- Donors and financing: **Local governments (Michel Hidalgo Delegation, Mexico City Public Spaces Authority) and real estate companies (Abilia) - USD 4,970,000**
- Location: **Mexico city, Mexico**
- Beginning date: **2016**
- Motivations: **Design Mexico City's public urban space by integrating the principles of ecological and social sustainability, to reduce rainfall impacts and promote biodiversity in the city**



CONTEXT AND ACTION

Summary | EeTestudio has been working since 2015 in Mexico City to meet the urgent need for urban development adapted to the current environmental context and at the same time to combat the problems of frequent flooding and, paradoxically, the lack of consumable water in the city. To this end, the company has developed and implemented various types of green infrastructure that allow rainwater to infiltrate Mexico City's subsoil, thus recharging the underground aquifer. Thanks to the filtering gardens, street runoff is collected, filtered and then penetrated into the ground through porous permeable layers. The latter are the support of endemic vegetation, filtering the pollutants contained in these waters.

EeTestudio seeks to advance the attention paid to green infrastructure by incorporating it into urban planning. Thus, its projects contribute to the implementation of the strategy proposed in the Michel Hidalgo Delegation's (local government) Water Planning, which consists in regenerating ecosystem services in the city to fight against floods and recharge the water table under Mexico City. The green corridors thus created make it possible to rehabilitate the urban ecosystem.

As the company is committed to urban social development, each project also includes infrastructure that provides other benefits to the population in terms of road safety, waste collection, and multifunctional leisure spaces. For example, some sports fields and pedestrian crossing extensions are made of porous materials that allow rainwater to infiltrate.

Local challenges |

- Major floods due to the continuous waterproofing of the urban environment;
- Decrease in water quantity in the underground aquifer of Mexico City: causes the city to collapse;
- Urban heat island: recurrent warming in the urban area;
- Loss of biodiversity through increased pollution and tarred areas;
- Road safety for pedestrians and cyclists;
- Lack of maintenance of public spaces.

Local responses |

- Installation of green spaces collecting and infiltrating rainwater;
- Urban permeabilisation of sidewalks and roads;
- Creation of climatic comfort zones, by providing freshness thanks to the presence of trees (evapotranspiration and shade);
- Filter gardens planted with endemic species;
- Implementation of secure road infrastructure.

BENEFITS

Environmental | The development of urban green infrastructure has increased rainwater infiltration, reducing the risk of flooding and recharging the aquifer, which is used to meet 70% of the city's water needs. In total, an area of 7.5 ha was de-waterproofed. In addition, these vegetated infrastructures attract more wildlife. Greenery helps to mitigate the effects of climate change by bringing freshness to the city.

Social | The creation of green spaces allows greater use of public spaces by the population and greater well-being. At the same time, some infrastructure is improving road safety.

Economic | EeTestudio's projects increase the attractiveness of the areas in which they are implemented, benefiting tourism and commercial activity.

SUCCESS FACTORS

- Involvement of the government and sensitization of some local authorities;
- Urgency to solve the problem.

OBSTACLES

- Lack of knowledge about the role of green infrastructure and its benefits;
- Due to the lack of knowledge, construction companies do not always follow the requests specified for projects; Authorization to market a biofertilizer of human origin;
- Lack of monitoring and maintenance of the infrastructure put in place.



« We design a more sustainable human habitat by understanding the environment and feeling dependent on it. »

Gustavo MADRID VAZQUEZ

- Contact:
 - ✓ Name: **Gustavo MADRID VAZQUEZ**
 - ✓ Status: **Project leader**
 - ✓ E-mail: gustavo.madrid@eetestudio.com

- Related link(s) :

<http://www.eetestudio.com/urbanismo>