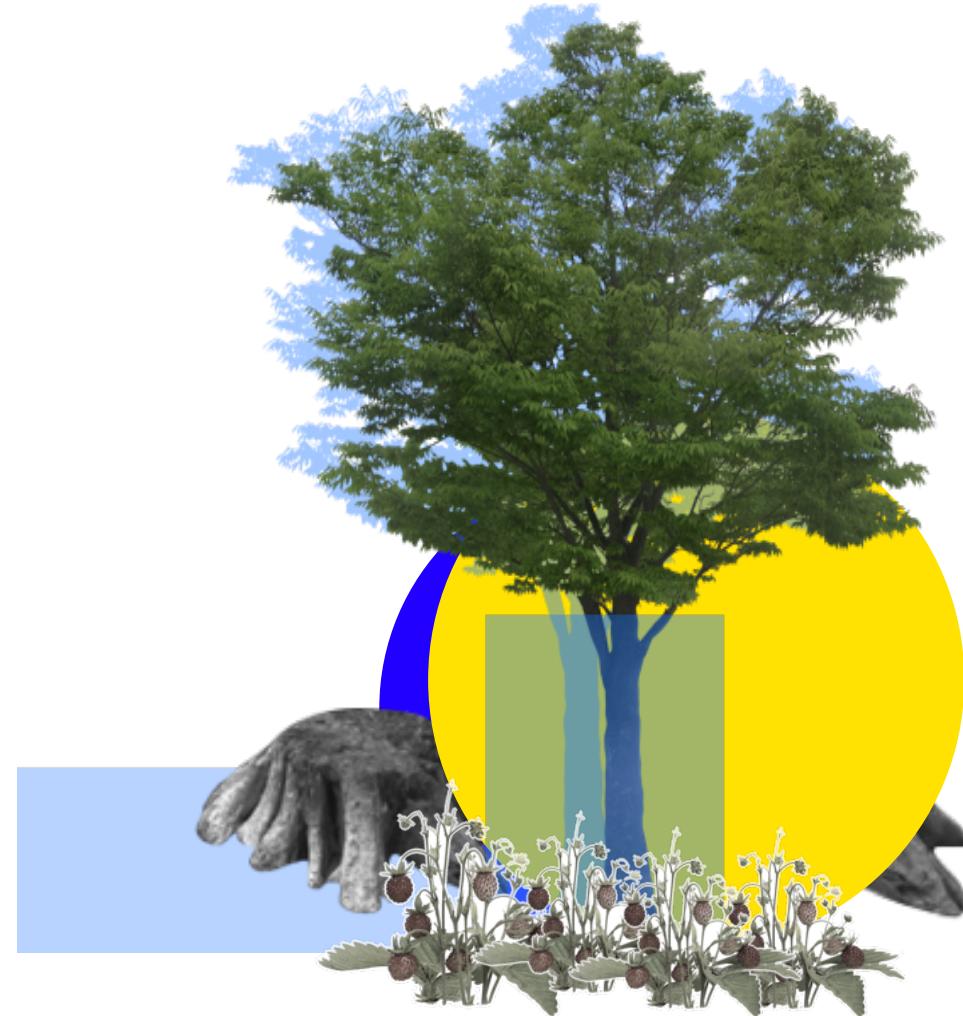


Urban Forest Ecosystem Services

Group members : Chengyu WU, Lidan Xiang, Pinhua Wang, Yuxuan Chen, Ziao Tang, Zoe Yi.

2 . DEC . 2021



Contents

- Audience
- Our challenge
- Our methods
- Our outcomes



Background

La Goccia

More than 2,500 tall trees have replaced industrial areas that were abandoned 20 years ago.

More than 20 years ago, the industrial area around the former gas plant between Bovisa and Villapizzone train stations was closed and abandoned.

The roots of these plants have broken through reinforced concrete, which covers most areas, and have multiplied in large numbers: "Plants have reoccupied space and created a new ecosystem."



Background

Audience keywords: Citizens

The project is about data from La Goccia in Milan, where urban planning has neglected the multiple values of trees at the expense of green spaces.

Challenge

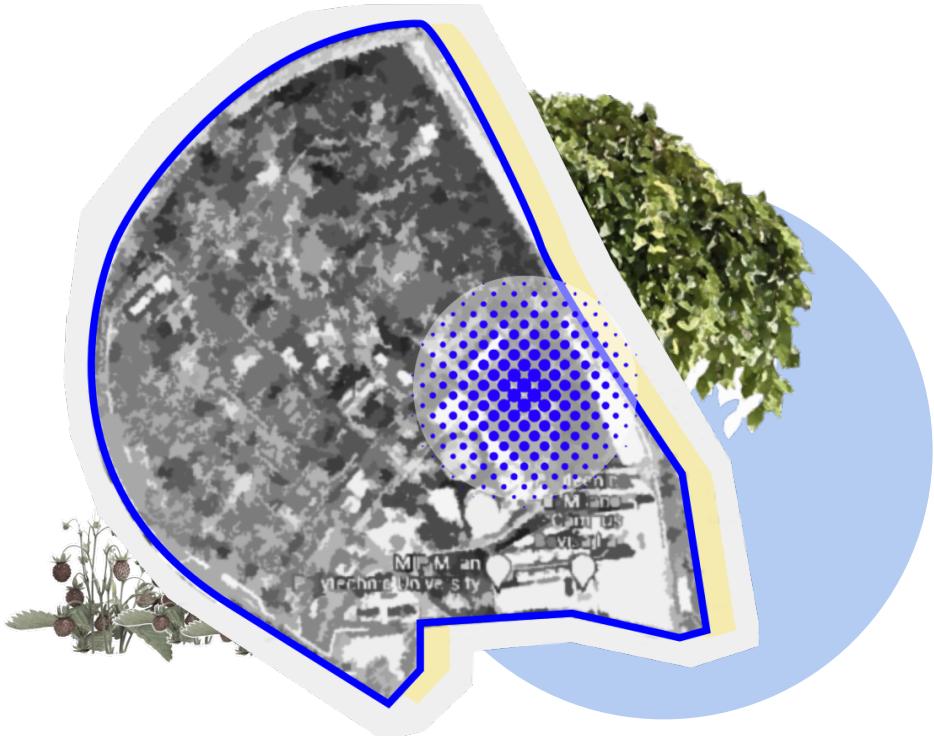
Question we found:

The data for the tree is relatively simple

- Collage style + in the environment
- Highlighting the story of the tree's growing environment.
- Value of trees in a relaxed and enjoyable way.
- A sense of interest:
Make the public aware of the multiple values of trees.



Methods



- **How we chose plots:**

- Plot 7: The total number of trees is the largest

- Plot 8: The greatest number of tree species

- Plot 17 & Plot 18: Some interesting stories

Why we chose website

Why we chose collage style

Methods



How we chose plots

- Why we chose website :
 - Website flexibility
 - Sustainable development (for future new data)

Why we chose collage style

Methods



How we chose plots

Why we chose website

● **Why we chose collage style :**

Industrial and natural elements

conflicting element in the same scene

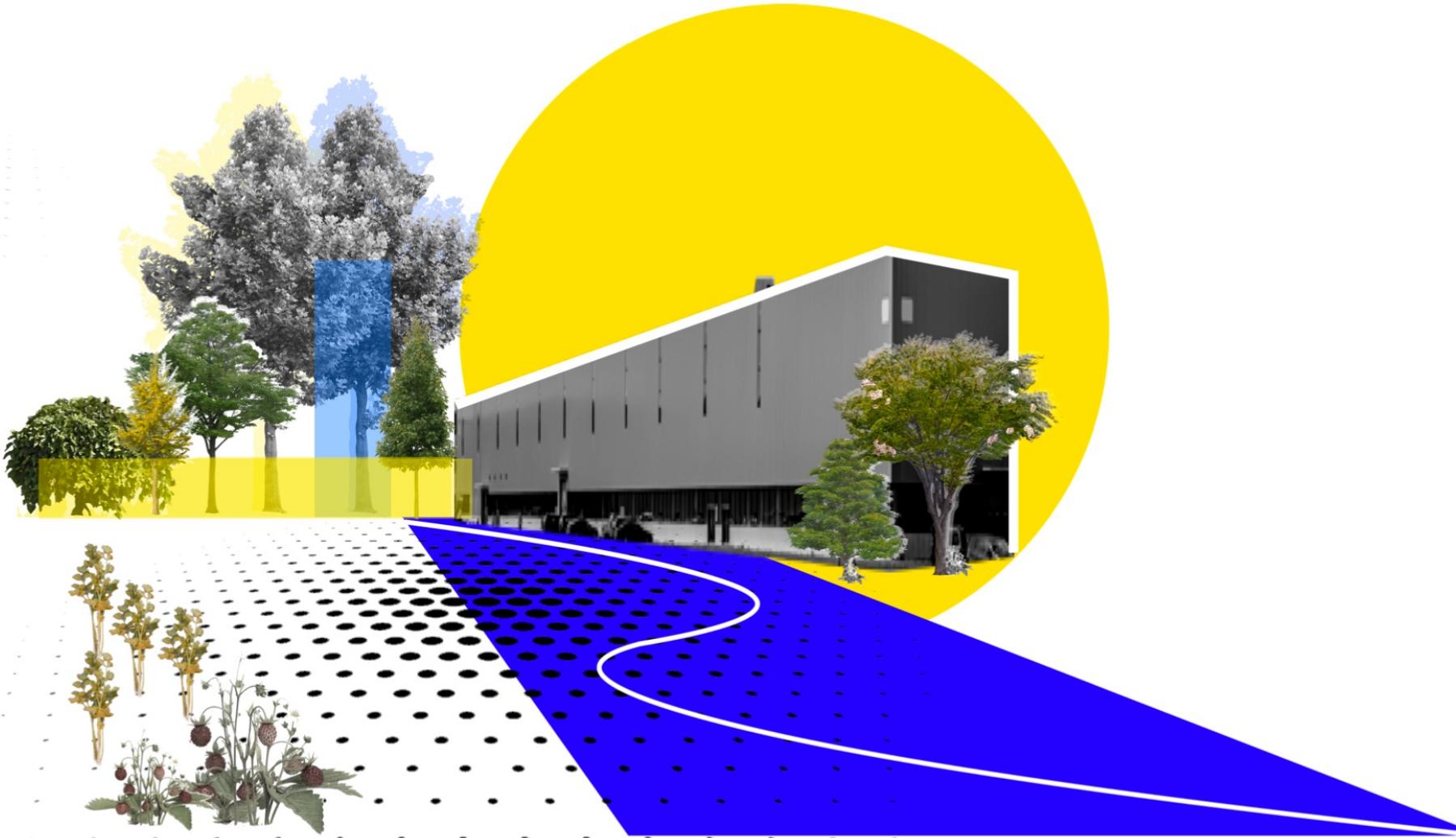
PLOT 8

<https://www.ds4tree.top/>



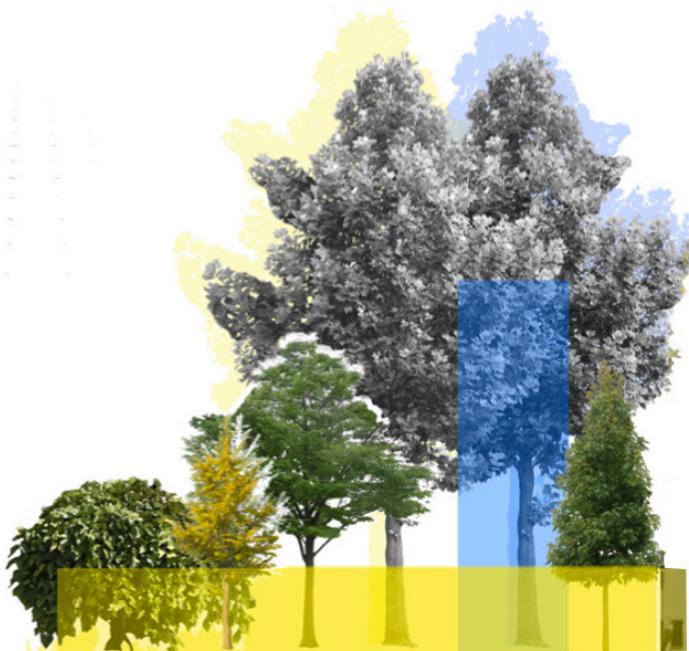
(45.505794, 9.155765456)

17
Total
Amount



Outcomes

<https://www.ds4tree.top/>



Design part

- Collage scene diagram

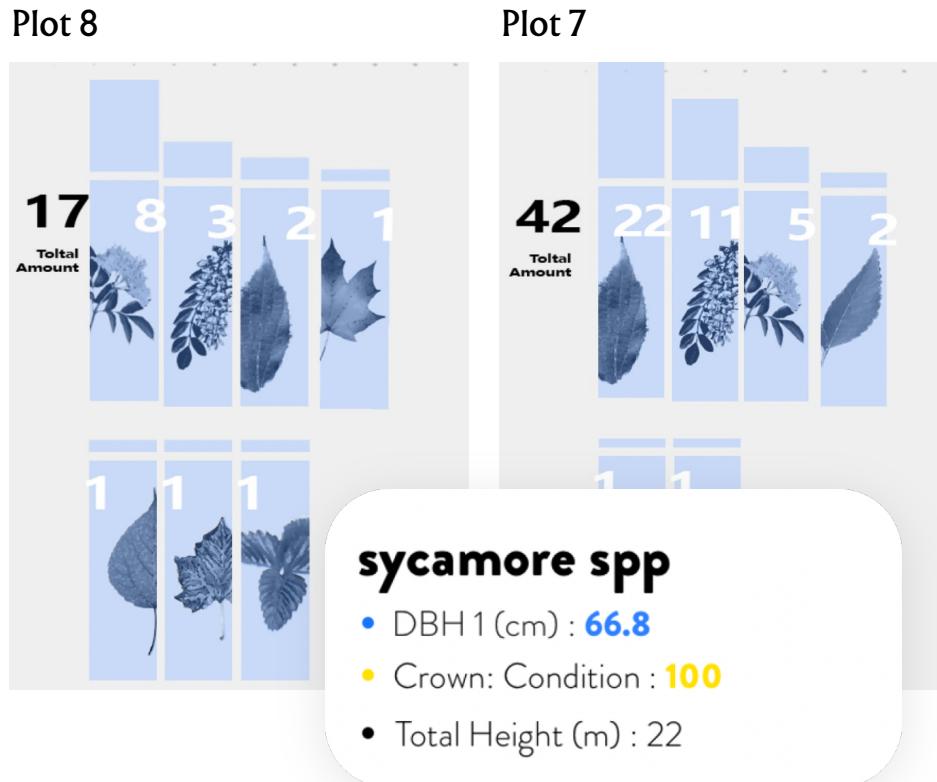
 Thickest trees  tallest trees

- Storytelling of the scene diagram

Two tallest sycamore (grey) are dead but still food for the other plants, creating a circular sustainable system.

Outcomes

<https://www.ds4tree.top/>



Data presentation

- Used leaves to represent tree species
- A floating window show the details of the species

Outcomes

Green Lung Value :

- Humanistic value
- Environmental value
- Economic Value

DE-INDUSTRIALIZATION

Decades ago, this vast expanse of green space was occupied by defunct factories, which have been waiting since ancient times to repair pollutants produced by industry.

Subsequently, much of the industry living in the area was demolished, and subsequent degradation was interrupted by the proliferation of residential construction sites and the restoration of some abandoned industrial structures.

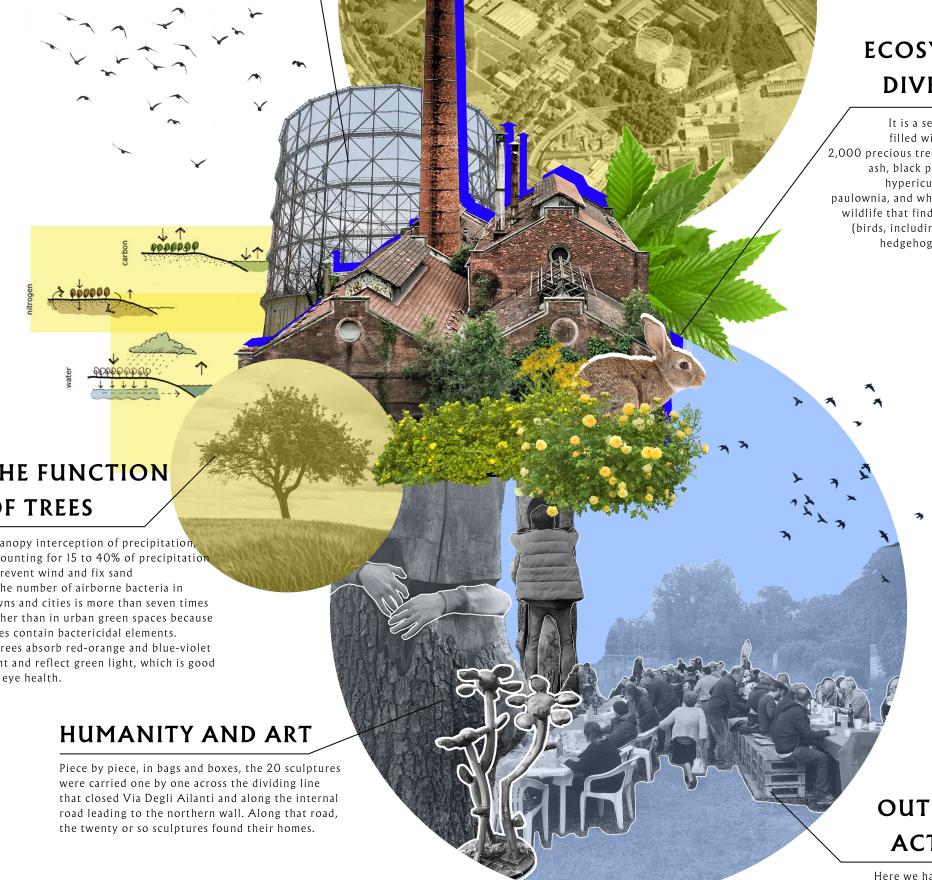
In 2012, a group of citizens formed the La Goccia Committee to stop the construction speculation looming over Milano Bovisa's Gasometri district (also known as Goccia because of the shape of the feature on the map).

ECONOMICAL VALUE

- Pollution Removal: 1,389 metric tons/year (€126 thousand/year)
- Carbon Storage: 3,408 thousand metric tons (€548 thousand)
- Carbon Sequestration: 77.72 metric tons (€12.5 thousand/year)
- Oxygen Production: 179 metric tons/year (€3.39 thousand/year)
- Avoided Runoff: 1,784 thousand cubic meters/year (€3.39 thousand/year)

ECOSYSTEM DIVERSITY

It is a secluded place, filled with more than 2,000 precious trees (sycamore, ash, black poplar, linden, hypericum, Hackberry, paulownia, and white head) and wildlife that find refuge there (birds, including eagle owls, hedgehogs, and foxes).



THE FUNCTION OF TREES

- 1.Canopy interception of precipitation, accounting for 15 to 40% of precipitation
- 2.Prevent wind and fix sand
- 3.The number of airborne bacteria in towns and cities is more than seven times higher than in urban green spaces because trees contain bactericidal elements.
- 4.Trees absorb red-orange and blue-violet light and reflect green light, which is good for eye health.

HUMANITY AND ART

Piece by piece, in bags and boxes, the 20 sculptures were carried one by one across the dividing line that closed Via Degli Alianti and along the internal road leading to the northern wall. Along that road, the twenty or so sculptures found their homes.

OUTDOOR ACTIVITY

"Exploring the Forest by bicycle"; Take a bike tour of Goccia di Bovisa to explore the beauty and vastness of the little-known urban forest. An information evening and signature-gathering were also organized to support observations.

Reference

- [1] Zhou Lixiang, Liu Meiling, Sun Liyan, & Yu Yang. (2019). Development of an intelligent calculation model and assessment system for forest carbon sinks. *Laboratory Research and Exploration*, 38(6), 5.
- [2] Pittau, F. et al. (2014) 'Brownfields regeneration as a smart growth option and building technologies: The case study of "La Goccia Di Bovisa" in Milano', in 5th Brunei International Conference on Engineering and Technology (BICET 2014). [Online]. 2014 Stevenage, UK: IET. p. 2.25-.
- [3] <https://www.parcogoccia.com/chi-siamo/>

Reference

- [1] Zhou Lixiang, Liu Meiling, Sun Liyan, & Yu Yang. (2019). Development of an intelligent calculation model and assessment system for forest carbon sinks. *Laboratory Research and Exploration*, 38(6), 5.
- [2] Pittau, F. et al. (2014) Brownfields regeneration as a smart growth option and building technologies: The case study of "La Goccia Di Bovisa" in Milano', in 5th Brunei International Conference on Engineering and Technology (BICET 2014). [Online]. 2014 Stevenage, UK: IET.
- [3] <https://www.parcogoccia.com/chi-siamo/>