

# BRESCIA 2030 A nature-based city for the well-being of its citizens

## THE CLIMATE TRANSITION STRATEGY

The Climate Transition Strategy is a local climate policy for the radical transformation of the city of Brescia. Adopted in 2021 by the Municipality, the Strategy sets both climate mitigation and adaptation targets with a 2030 horizon.

The strategy envisions a city that in ten years will be: **Oasis City**, by creating areas of shade and coolness, bringing nature into the city for the well-being of people and to improve the urban microclimate;

**Sponge City**, to return space to water and permeability to the earth to accommodate life, with increased urban drainage and increased natural capital and biodiversity;

**City for People**, by creating even more livable spaces where the right to health, meeting and inclusion is guaranteed.

The Strategy includes an analysis of the climate in Brescia and a study of the expected climate in the next century according to IPCC scenarios. To cope with a city that will be warmer and with more severe autumn rainfall, the Strategy puts in place a series of adaptation actions. Many of these involve the use of nature-based solutions, with multiple benefits in the mitigation of air and soil pollution as well as greenhouse gas emissions.

### Brescia profile

Country: Italy  
Residents: 199 375 (2020)

Location: Lombardy's plains, in the foothills of the Brescia and Garda pre-Alps

Future climate trends:  
Increase of average and extremely high temperatures  
Extension of dry periods. More intense autumn precipitation



Here you will find a selection of 4 adaptation actions of Brescia's Climate Transition Strategy, all of which are nature-based solutions:

## 1. Urban Forestation

### Climate hazards



The project involves the renaturalization of marginal spaces in the peri-urban area of the city of Brescia. The intervention restores the forest cover, using species of the original mid-European vegetation, namely oak and hornbeam, with shrubs species. In the design, a mixture of species of various sizes was favored to give greater stability and resilience of the plant community being created, as well as being more aesthetically pleasing and contributing to a more diverse habitat for wildlife. The intervention covers 5 distinct areas of the city (Via Malga, Via Duca degli Abruzzi, Via Acerbi, Via del Serpente, San Polo) with co-benefits in terms of CO<sub>2</sub> storage and air pollutants abatement



141 236 m<sup>2</sup>

Area of intervention

> 11 000

Trees of over 25 species

0.1-0.3 m<sup>3</sup>/year

Average reduction of water runoff per tree

## 2. Renewal of roadside trees

### Climate hazards



The project includes the renewal of part of the street trees of Brescia. They provide increased urban drainage as well as shade and protection against the urban heat island phenomenon. They also provide an ecological corridor linking Brescia green areas. The adaptation measure includes the removal of 91 end-of-cycle trees that were damaged by droughts and wind storms and the plantation of 183 new trees adaptable to the future climate. Moreover, to increase rainwater runoff, 200 m<sup>2</sup> of impermeable surfaces will be removed and replaced with herbaceous covers.

40.76 T/year

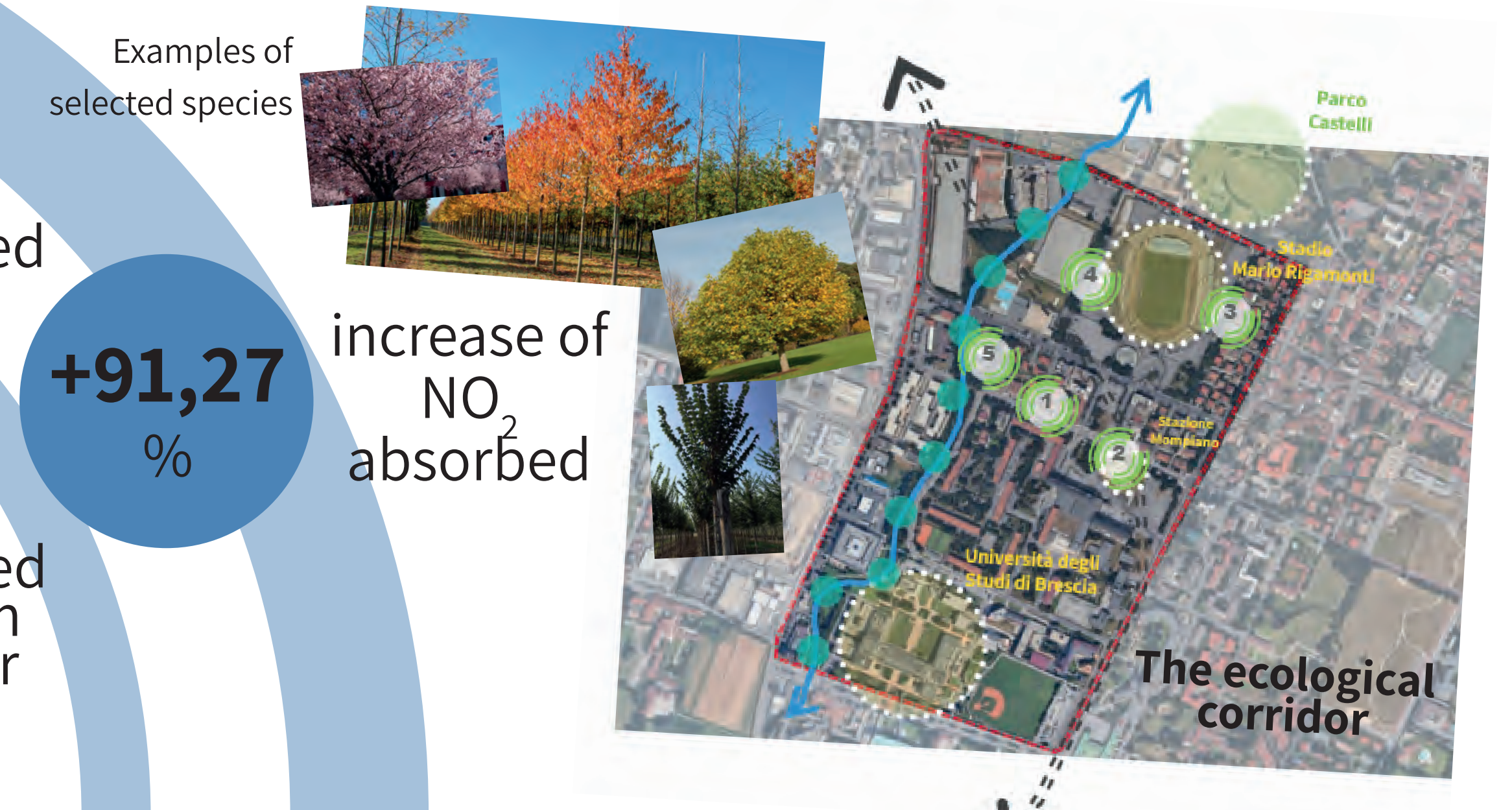
CO<sub>2</sub> removed

+91,27 %

increase of NO<sub>2</sub> absorbed

180 m<sup>3</sup>/year

Drained storm water



## UN FILO NATURALE

Brescia's Climate Transition Strategy was developed and it is currently implemented in the framework of the project "Un Filo Naturale" (A natural thread). The project is co-funded by Fondazione Cariplo, through the open call "Strategia Clima", and by Regione Lombardia. The project is implemented by a partnership led by the Municipality of Brescia, together with Ambiente Parco, CMCC and Parco delle Colline di Brescia.



## 3. Road de-paving

### Climate hazards



The project includes a pilot intervention to redevelop via Metastasio, a street located in the suburbs of Brescia. The objective is to achieve improved climate comfort on a micro-urban scale, enhance landscape and ecological quality, increase urban drainage and improve bike mobility. Specifically, the road section will be redesigned



and de-paved in favor of the inclusion of two bike lanes, a "rain garden" flowerbed on the south side (with plant species that contribute to the functionality of the drainage system) and leaking wells on the north side (to drain rainwater underground). The species are selected to withstand alternating periods of drought as well as heavy rainfall and to increase urban biodiversity. 25 new trees will shade the ground, reducing temperature and increasing the comfort of the area. Sidewalks will be asphalt with a light-colored resin to reduce the temperatures generated by summer sunshine

8 180 m<sup>2</sup>

Area of intervention

2 100 m<sup>3</sup>/year

Reduction of storm water running into the sewerage system

### Climate hazards



## 4. Green roofs

Among the adaptation measures, the project foresees the realization of a green roof on a pilot public residential building in Via Cavellini. It has the function of improving building energy performance, improve indoor microclimate, while reducing urban heat island effect in the open spaces and facilitate the urban drainage. The green roof will be composed by two different systems: 75% of the surface will be occupied by a system with a predominance of small and particularly drought-tolerant plant species; 25% of the area will be occupied by a system with an irrigation plant to make up for times of low rainfall. In this second case, water will be supplied from below to the roots, minimizing evaporation.



1 200 m<sup>2</sup>

Area of intervention

38

Housing units



With the contribution of



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