

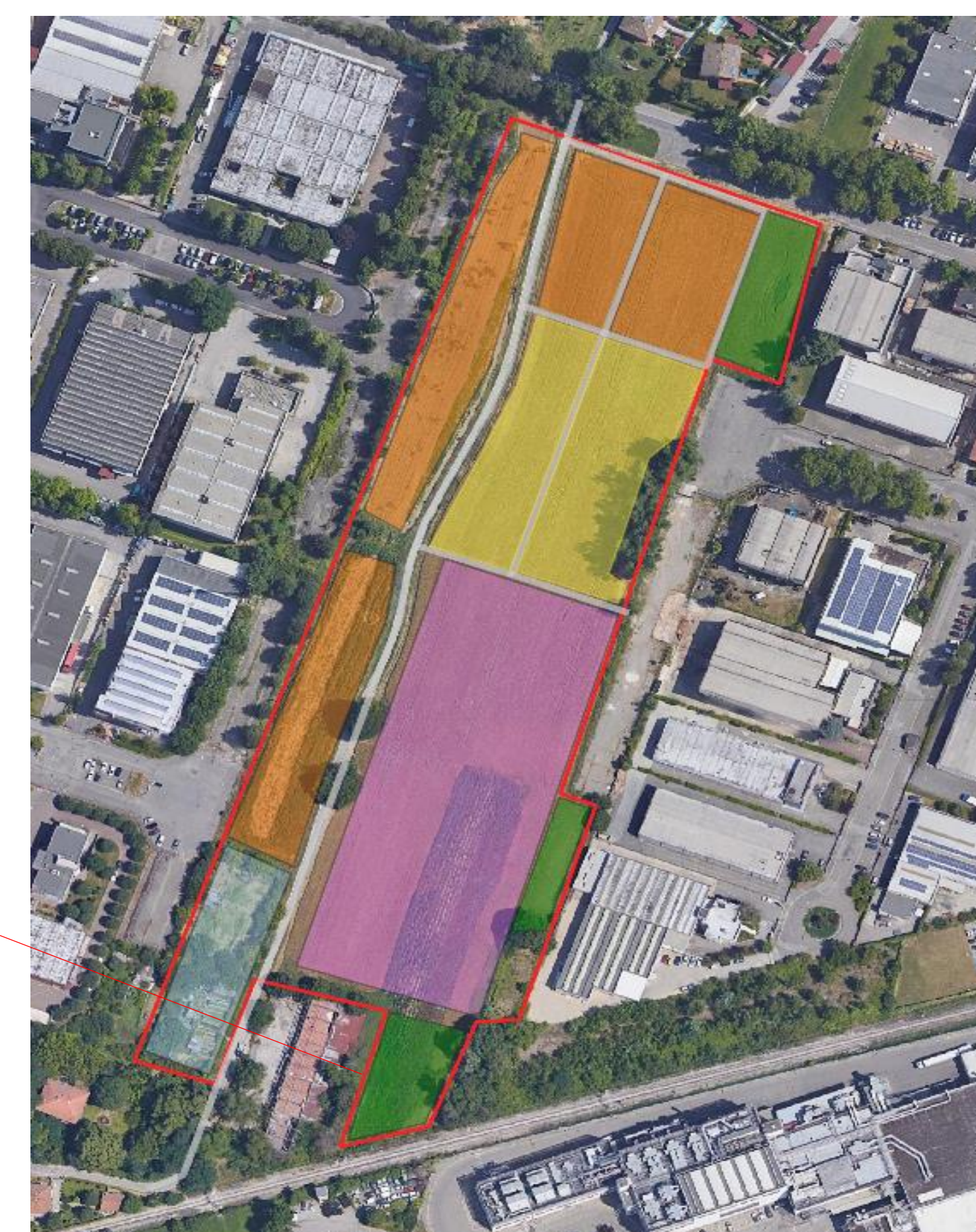
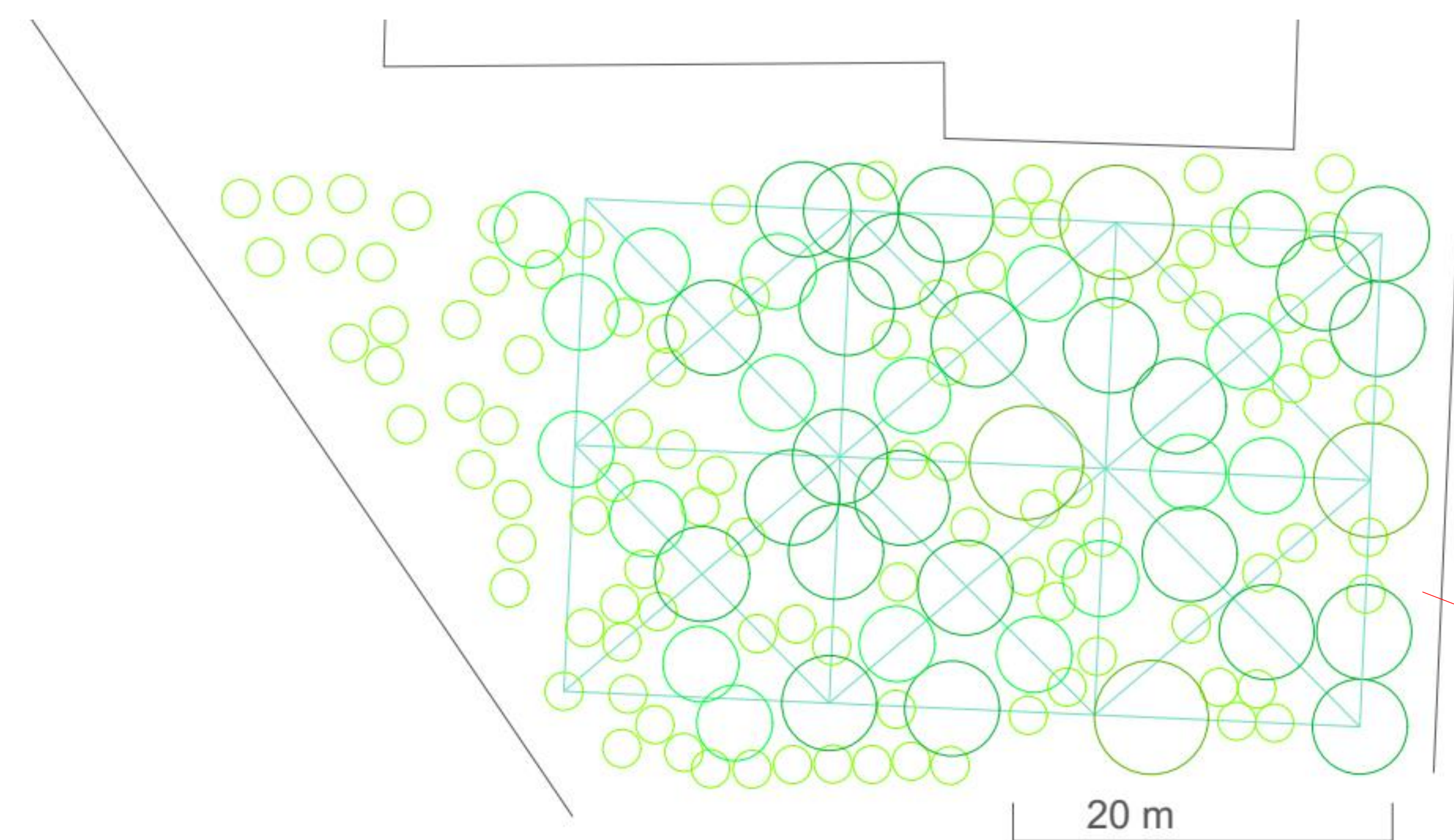


Introduction, context and objectives

Redevelopment of urban spaces can take different forms and configurations. With this work we propose a project of regeneration of residual green spaces included within an ex-industrial area located in the outskirts of Bologna. Three small urban forests have been designed and put into practice, using native and naturalized species, with the specific aim of contributing to the spill-over of beneficial organisms, such as insect predators, parasitoids and pollinators from these areas to cultivated fields. The project, in fact, is part of a complex green infrastructure, a cycle-eco-horticultural corridor, made up also by an orchard of ancient and forgotten varieties, productive fields managed with organic method, semi-intensive cultivation of aromatic plants, social gardens and fellow fields.

Materials and Methods

For each zone, a list of plant species was first created. Subsequently it was categorized according to maturity size (I, II, III category) and the characteristics of interest (melliferous plants and flowers, evergreen and thorny plants, edible/officinalis, beneficial plants for pest control, forest species, ornamental plants). To facilitate the planting phase it was decided to divide the plots into quadrants, ensuring a good blend of plant species within each of them. The seedlings used for reforestation were raised in earthen bread and were of a age of 1-2 years.



Plants utilized and their characteristics

	Melliferous/Flowers
	Nitrogen fixing
	Evergreen/Shelter
	Edible/Official
	Pest Control

species	n.	characteristics
<i>Acer campestre</i>	5	
<i>Acer monspessulanum</i>	1	
<i>Rhamnus alaternus</i>	2	
<i>Melia azedarach</i>	1	
<i>Cercis siliquastrum</i>	2	
<i>Laurus nobilis</i>	6	
<i>Carpinus betulus</i>	4	
<i>Prunus avium</i>	3	
<i>Arbutus unedo</i>	3	
<i>Cornus mas</i>	5	
<i>Berberis vulgaris</i>	7	
<i>Quercus robur</i>	1	
<i>Euonymus europaeus</i>	12	
<i>Morus alba</i>	4	
<i>Morus nigra</i>	2	
<i>Ligustrum vulgare</i>	10	
<i>Laburnum anagyroides</i>	7	
<i>Prunus dulcis</i>	2	
<i>Malus silvestris</i>	2	
<i>Lagerstroemia indica</i>	4	
<i>Corylus avellana</i>	13	
<i>Juglans regia</i>	1	

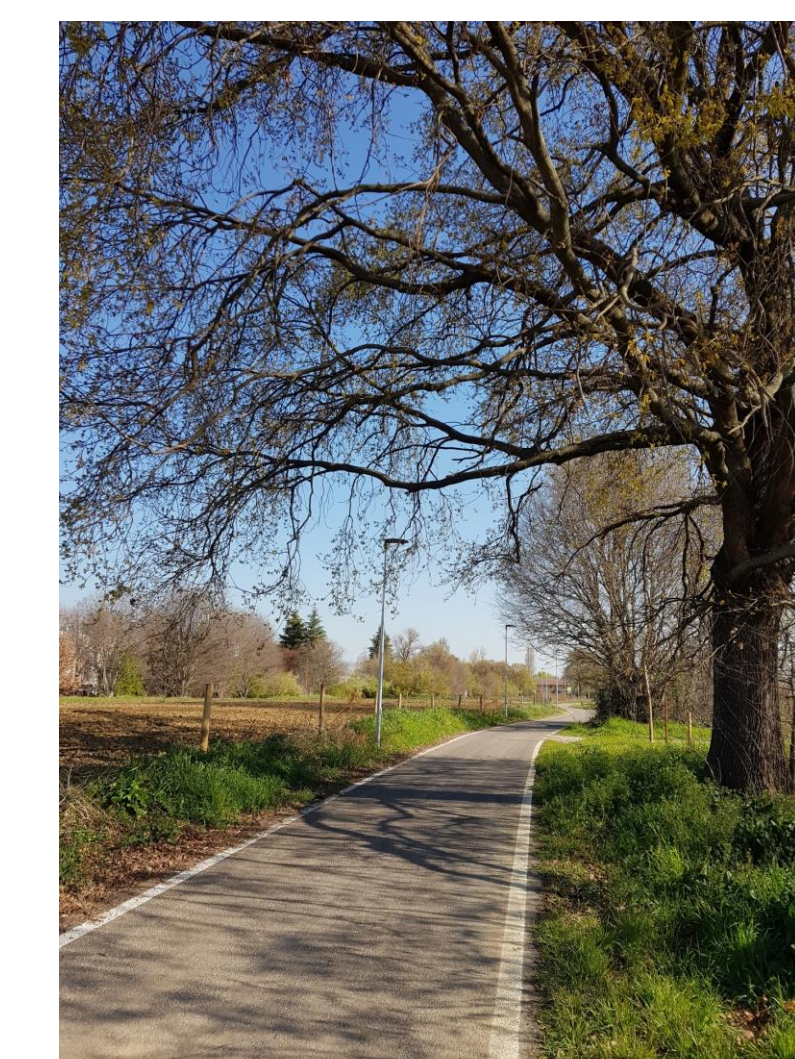
<i>Hippophae rhamnoides</i>	12	
<i>Elaeagnus angustifolia</i>	6	
<i>Ulmus pumila</i>	6	
<i>Alnus cordata</i>	1	
<i>Alnus glutinosa</i>	2	
<i>Fraxinus ornus</i>	5	
<i>Viburnum opulus</i>	4	
<i>Pauwlonia tomentosa</i>	1	
<i>Pyrus pyraister</i>	2	
<i>Prunus spinosa</i>	8	
<i>Rosa canina</i>	17	
<i>Prunus cerasifera</i>	1	
<i>Sambucus nigra</i>	8	
<i>Cornus sanguinea</i>	2	
<i>Cotinus coggygria</i>	10	
<i>Sophora japonica</i>	2	
<i>Sorbus torminalis</i>	1	
<i>Rhamnus cathartica</i>	2	
<i>Tamarix gallica</i>	3	
<i>Viburnum lantana</i>	4	
<i>Zelkova spp.</i>	2	
TOTALE	197	

Expected Results

Biomass production, improvement of groundwater quality due to slowing down of nitrate leaching, erosion control by providing permanent soil cover, ability to mitigate the heat island effect, reduction of irrigation use, creation a favorable microclimate, maximization of C sequestration potential, reduction of wind speed and evapotranspiration, conservation of soil moisture, implementation of functional and generic biodiversity.



Conclusions



The cycle-eco-horticultural path is a new model of urban agriculture that will serve to return a small green lung to the city of Bologna and to improve its ecological and environmental value.

Reforestation will be expanded over time and enriched with species, but at the same time they will be left free to evolve in a natural way and without forcing. The effects, over time, of reforestation will be monitored and specific topic of future researches.