

## LEVERS FOR SUCCESS

### TECHNICAL ASPECTS AND PROJECT DESIGN

- **Plan in advance:** The All Saints' Day period leaves us little time for planting in cemeteries, which needs anticipation so that the works are not rushed.
- **Draw up a biodiversity-friendly management plan:** Plan different intervention times according to site practices. Spread mowing operations over time to allow animal species to move around: preferably in the morning or under the heat. Maintain a height of 10 to 20 cm to avoid destroying the fauna and favour deep root system development.
- **Install an internal compost system for the cemetery:** A system that limits waste disposal and offers a closed circuit for green waste for re-use within the site.
- **Establish internal regulations:** Lay down the use of and access to the cemetery (in addition to the protective wooden posts) to ensure the sustainability and consistency of its ecological management. Control access for service providers and companies working in the cemetery.
- **Choose local and suitable tree species:**
  - Resistant because the soil is poor and shallow with a topography not allowing water to infiltrate easily (4% slope towards the Seine);
  - Low sensitivity to trampling for installation at the front of the graves;

- Self-seeding and bee-friendly species (clover, thyme) which spread by dissemination;
- Between graves, stonecrops, whose ground-cover growth limits maintenance.

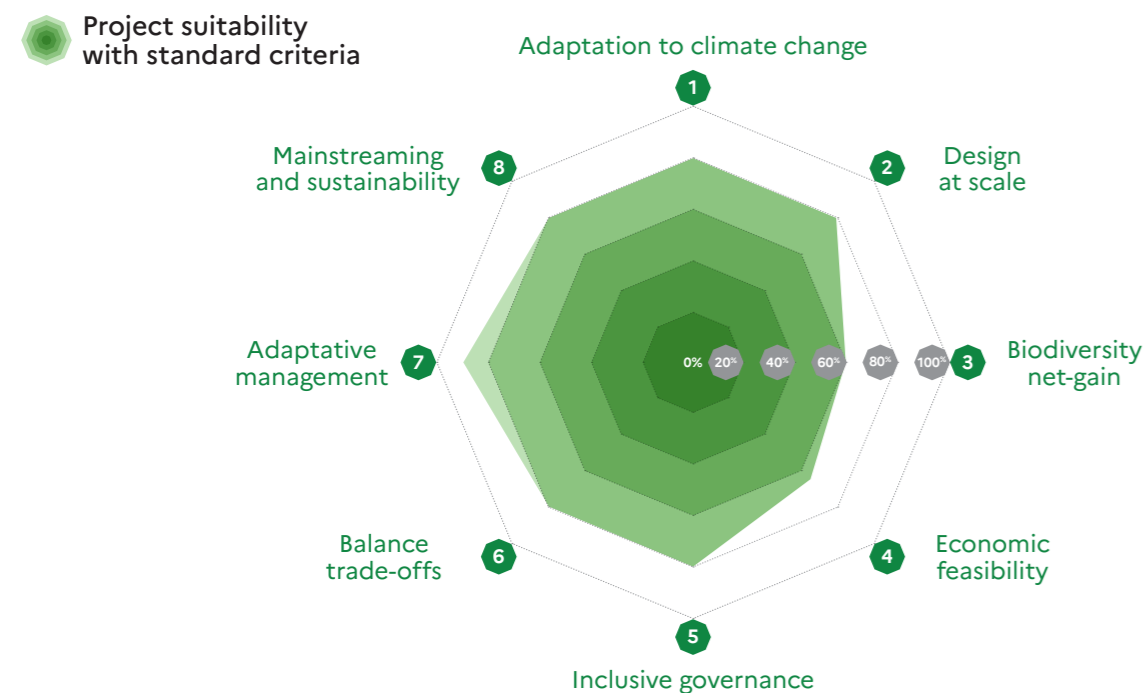
### STAKEHOLDER COMMITMENT

- **User acceptance and awareness:** Given the cemetery is a place of remembrance, the sensitivities of the families must be respected.
  - Communicate to anticipate complaints about yellowing grass in summer and to help change the way of seeing «cleanliness» and traditional «aesthetics».
  - The municipality carried out vegetation tests on a part of the cemetery to survey the inhabitants while the project design was underway. The town is organising actions to educate and raise awareness among users about the recycling and composting area.

### ACTION MONITORING AND REPLICABILITY

- **Adaptive aspects:** The establishment of a regular monitoring and evaluation system supported by technical and academic experts ensures the ability of project self-evaluation and self-adaptation to hazards to improve its effectiveness.

## ASSESSMENT ACCORDING TO THE IUCN GLOBAL STANDARD FOR NATURE BASED SOLUTIONS



### FOR FURTHER INFORMATION

- Meudon town website <https://www.meudon.fr>
- Greater Paris 2019 project proposals webpage <https://www.metropolegrandparis.fr/fr/lancement-de-lappel-projets-nature-2050-metropole-du-grand-paris-223>
- Nature 2050 programme project webpage <https://www.cdc-biodiversite.fr/realisations/nature-au-cimetiere/>

### PROJECT LEADER

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## NATURE AT THE CEMETERY 2019 - 2050



### FACT FILES

#### GEOGRAPHICAL LOCATION

Meudon in the Hauts-de-Seine (92)

#### ADAPTATION ISSUES ADDRESSED

Water infiltration, urban heat island effects

#### AFFECTED HABITAT(S)

Urban ecosystems

#### NBAS TYPE(S)

Ecosystem restoration: Creation of a green and diverse ecosystem out of the initial mineralised alleyways to accommodate biodiversity in the Longs Réages Cemetery.

#### PROJECT LEADER(S) AND ASSOCIATED PARTNER(S)

- Meudon Town Hall
- Greater Paris
- Nature 2050 Programme – CDC Biodiversité

#### FUNDERS AND BUDGET

- Grant from the Greater Paris call for proposals – Nature 2050
- Self-financing

Budget: 178 125 €

To this is added the cost of project maintenance and monitoring until 2050 covered by Meudon Town Hall and CDC Biodiversité.

## PROJECT OBJECTIVES

- **For climate change adaptation**  
Enhanced water infiltration capacity and mitigation of the heat island effect in urban areas.
- **For biodiversity**  
Creation of a diversified green ecosystem which functions as a buffer area between the green corridor of the Meudon forest and the blue corridor of the Seine river.
- **For the territory/ local community**  
Reappropriation of nature in the town by the inhabitants, improve well-being and awareness of environmental issues.

### PROJECT REGULATORY CONTEXT

- Regional Ecological Coherence Scheme (SRCE)
- 2019 Meudon Land Use Plan



Alleyway developments in the Longs Réages cemetery  
©ALP

## CONTEXT AND ISSUES

Between the national forest and the banks of the Seine, in the heart of a dense urban fabric, the Longs Réages cemetery spans over an area of nearly 12,000 m<sup>2</sup> in the town centre of Meudon. This town's historic cemetery, created in 1856 and located on the slopes of the Seine, has become largely mineralized over the years to the point where vegetation has been excluded, although nonetheless being largely present in the town. Meudon has an important forest cover, which forms 50% of its outlying territory, and also within built-up areas with 7 parks and 17 public gardens. However, the town centre remains a highly urbanised and artificialised area, making it more vulnerable to the creation of urban heat islands during heatwaves. The significant impermeabilization of the surface also prevents water from infiltrating properly and increases the risk of gully erosion on the slopes towards the Seine River and the Lower Meudon district, which is already threatened by the risk of river flooding. The Longs Réages cemetery renaturation project is one of the 9 winners of the call for proposals launched in 2019 by CDC Biodiversity and the Greater Paris Metropolis (MGP).

## ACTIONS TAKEN

The project provides sustainable and more biodiversity-favourable development through ecological management of the cemetery that reinforces the presence of nature in the town.

- Seeding along the main alleyways with specific turf using local plant species and a mycorrhizal substrate on recycled twin-wall polycarbonate sheets;
- Seeding along secondary alleyways and passageways with specific turf with mycorrhizal substrate (seed mixture with 95% grass and 5% flowers);
- Planting between graves;
- Conservation and maintenance of existing tree heritage;

- establishment of climbing plants and perennials along the walls, and around the war memorial and compost bin;
- Implementation of mulching;
- Creation of a second entrance to facilitate access to the RER station from the town centre.

Revegetation actions are combined with the setting up of feeders and the creation of a collective compost area that will facilitate the management of green waste and its reuse in the cemetery soil. In addition, a recycling centre for clay pots offers users the possibility of repotting plant boxes on the graves.

## TIMETABLE

PROJECT LIFESPAN	
1856	Creation of Longs Réages Cemetery
2019	Winner of the MGP and CDC Biodiversité call for proposals Co-development of indicators
2020	Partnerships with the MGP and CDC Biodiversité Start of works Monitoring of indicators
2021	Winner of the City in Bloom Award (4 awards since 2008) Works end Monitoring of indicators
Until 2050	Monitoring of indicators

## GOVERNANCE ADOPTED

The municipality was assisted by a landscape agency (Après la Pluie), which carried out a study in April 2019; it also relied on the «Design and ecological management of cemeteries» guide produced in 2015 by Natureparif. The teams from CDC Biodiversité: the Nature 2050 programme and the MGP are supporting the town on project

design and defining the monitoring indicators until 2050. Two companies (COLAS and PASS Vert) were mobilised to carry out the works. The change in management practices is also leading to greater involvement of the agents of the municipal Parks and Gardens department.

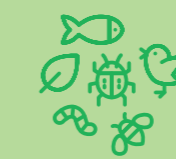


## PROJECT BENEFITS AND CONTRIBUTIONS



### BENEFITS REGARDING TARGET ADAPTATION ISSUES

- Improve run-off water infiltration and mitigation of the gully erosion on the slopes of the Seine River by renaturing the soils.
- Improve the town's resilience to heat waves by removing pavement and creating a green space
- Creation of a staging area in a densified urban fabric in between the green corridor of Meudon's Forest and the blue corridor of the Seine River, as well as the ecological corridor formed by the RER C railway line and the surrounding large private gardens.



### BENEFITS FOR BIODIVERSITY

- Creation of approximately 6 500 m<sup>2</sup> of green space in the heart of the town welcoming biodiversity through the creation of new habitats (open habitat composed of different herbaceous strata not usually found in urban areas) which favour a wide variety of species (birds, bats, pollinators, beneficial organisms, etc.).

### OTHER BENEFITS

Socio-economic benefits:

- Increased population well-being and quality of life.
- Creation of an area for walking, socialising and passing through for inhabitants.
- Composting training and awareness raising.



## MONITORING INDICATORS

### Adaptation to climate change

- Measurements of organic carbon stock in soil and the natural abundance of Nitrogen-15 in leaves.
- Monitoring of extreme water-related events

### Biodiversity

- Hedgehog mission
- Spipoll: Photographic monitoring of pollinating insects
- Florilèges urban meadows: Monitoring of meadows by park and garden managers
- Birdlab: Monitoring and observation of birds at feeders

### Others

- Monitoring of user satisfaction and uptake of the Longs-Réages Cemetery