

# eco-Design of a rainwater depollution station "THE VEGETALIZED BLOCK" in CHAMPIGNY-SUR-MARNE, France.



INDUSTRIAL site, HQE® APPROACH : water and sanitation

Client	VAL DE MARNE County
Location	Champigny-sur-Marne (94), France
Project Mission	Architectural and landscape design of the rainwater depollution station
Consultant	AR ARCHITECTES
Area	Site of 8 100 m <sup>2</sup>
Cost	42 300 000 €
Date	Competition 2022



Landscape plan



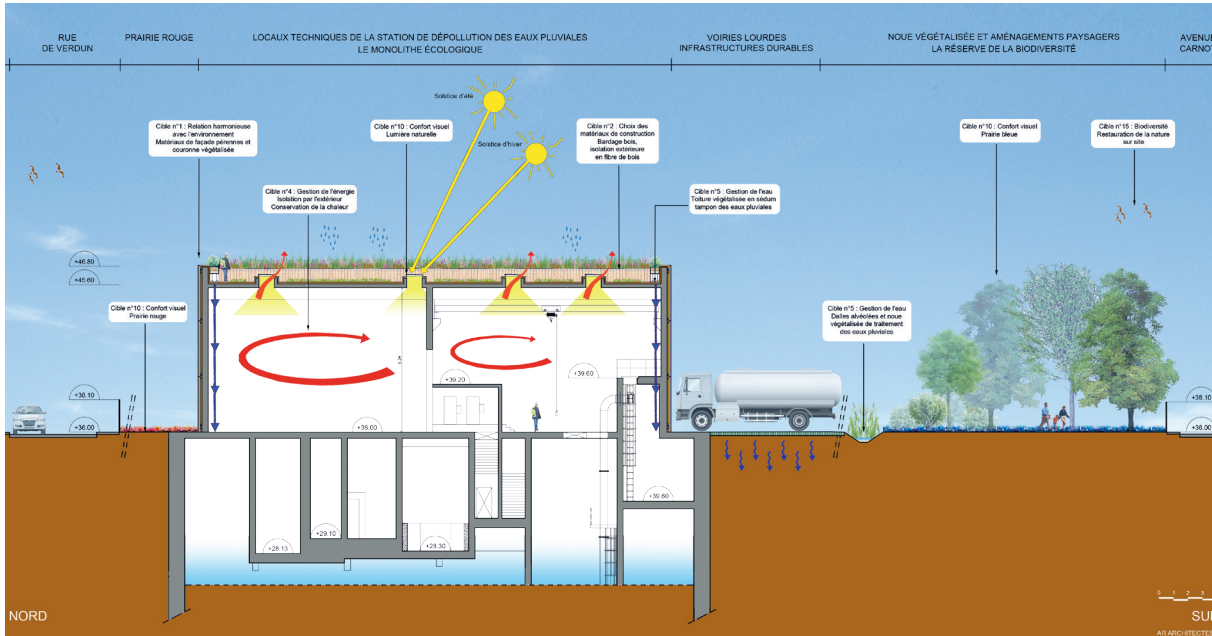
Perspective view of the rainwater depollution station

The rainwater depollution plant will be located in the south of Champigny-sur-Marne and will sit at the interface between a preserved natural environment and a rapidly changing urban landscape.

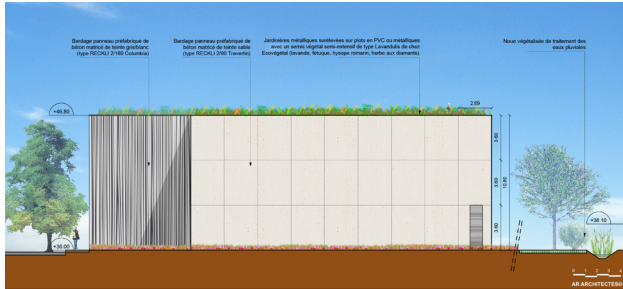
The architectural and landscape design of the future rainwater depollution station meets the goal of integrating the buildings into its environment through architectural arrangements and high quality materials.

To reach this goal, the main axis of the project was to **free the architecture - the ecological monolith** - by integrating it into the natural landscape of Marne and reconstructing the biodiversity on the site in a **"vegetalized block"** therefore making a smooth transition between the center of Champigny and its large landscape.

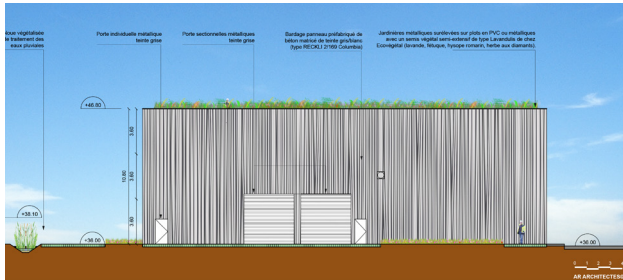




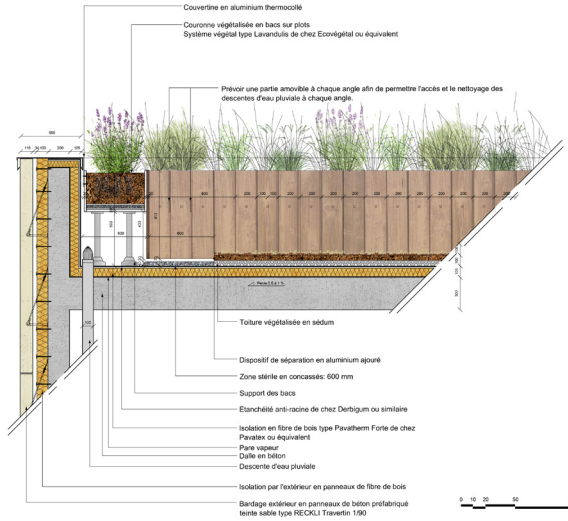
HQE® Section



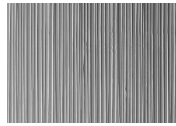
NORTH Elevation view



SOUTH Elevation view



Planted roof detail



Precast concrete panel (ridged matrix)



Precast concrete panel (smooth matrix)



Sedum green cover



Bins on vegetated plots



Tall trees: ash, elm



Red, yellow and blue grassland areas



Permeable hollow core slabs



Semi-aquatic plants: maria irises, bulrushes

## HQE® targets

### Target 1: Harmonious relationship of the building with its environment

- Views of natural spaces: **green roof, green honeycomb slabs.**
- Limitation of visual constraints caused by the immediate environment.
- Good integration of the building into the landscape.

### Target 2: Integrated choices of construction processes and products

- Siding in precast concrete panels allowing good resistance over time and low maintenance.
- Vegetation on the roof.

### Target 3: Site with low nuisance

- The main goal of the "green construction site" is to manage the environmental constraints caused by the various activities linked to the construction site.

### Target 4: Energy management

- Insulation of the building envelope gives it good inertia and reduces energy consumption.
- Natural light allowed by the skylights on the roof.

### Target 5: Water management

- Treatment of rainwater thanks to a green roof.
- Management of runoff water using "evergreen" vegetated slabs allowing the drainage of rainwater into the earth.
- The overflow of water is collected by green ditches.

### Target 7: Operating and maintenance

- Precast concrete walls require low maintenance.
- Low maintenance of landscaping.

### Target 10: Visual comfort

- The landscaping of the planted block provides flower meadows, a biodiversity reserve and a vegetated valley allowing the infrastructure to be well integrated into its environment.

### Target 15: Biodiversity

- The project is part of an approach aimed at maintaining favorable environments for the protected species of the natural surroundings and the banks of the River Marne.

