

# eco-DESIGN OF THE ÉCLUSE CARRÉE PUMPING STATION FOR THE OPTIMIZATION OF THE RIVIÈRE NEUVE / PIERRETTES HYDRAULIC SYSTEM - FRANCE

## “Along the Water”

HYDRAULIC INFRASTRUCTURE, HQE® APPROACH: PUMPING STATION, WATER MANAGEMENT AND FLOOD RISK PREVENTION

Client	Intercommunal Institution of the Wateringues
LOCALISATION	Coulogne (62), France
MISSIONS	Construction of hydraulic structures on the Rivière Neuve / Pierrettes
CONSULTANT	SETEC HYDRATEC / AR ARCHITECTES
PUMPING CAPACITY	2m <sup>3</sup> /s
COST	7 000 000 €
DATE	Detailed Design Phase - 2026



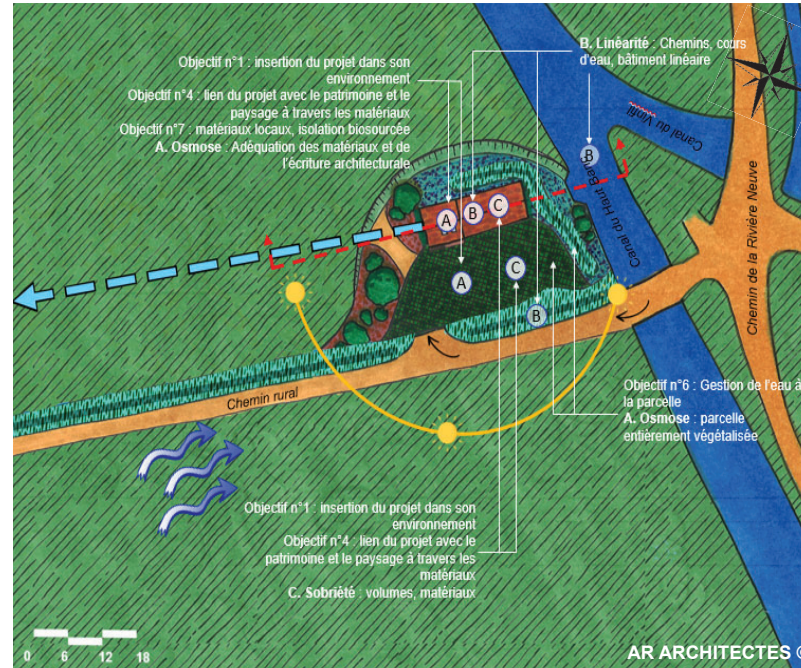
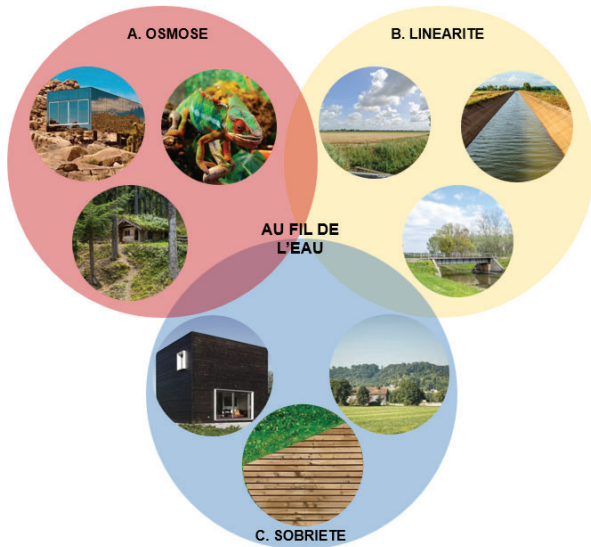
General layout plan of the Ecluse Carrée pumping station



Perspective view of the future Ecluse Carrée pumping station – projected state – Along the Water

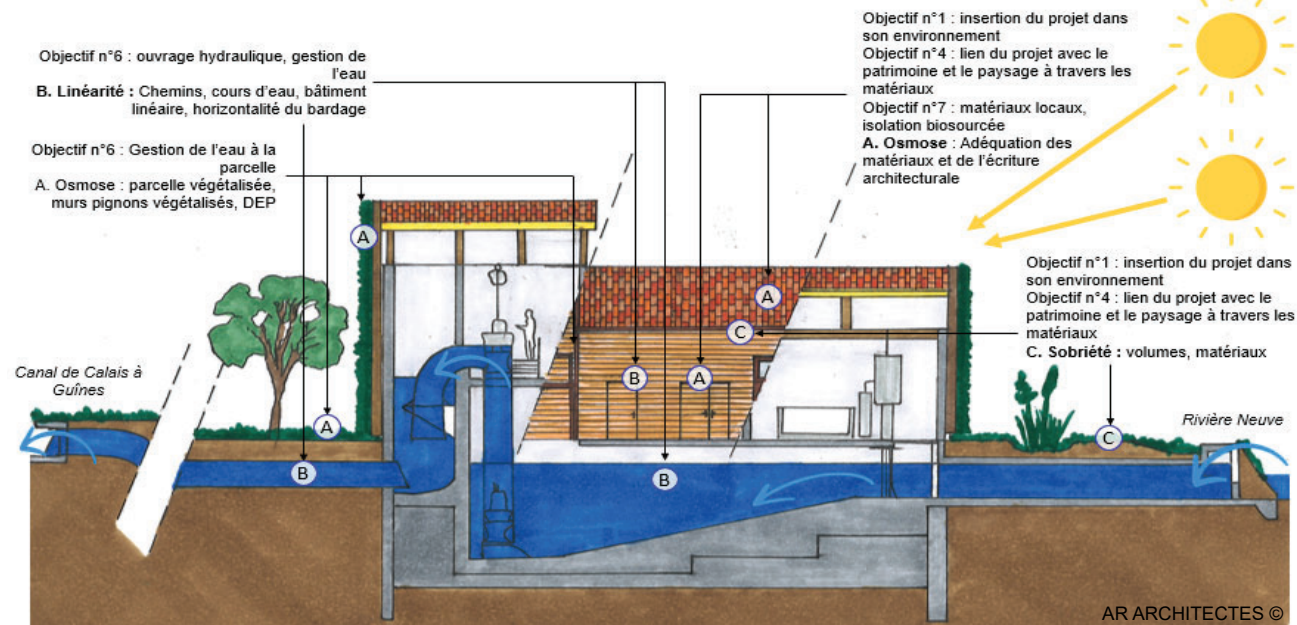
The Ecluse Carrée pumping station project forms part of the optimization of the Rivière Neuve / Pierrettes hydraulic system, with the objective of **improving stormwater management and reducing flood risks**. Located within a **natural wetland area**, in the immediate vicinity of a **ZNIEFF** ecological protection zone, the project is set within an **open landscape shaped by canals, waterways, and agricultural land**, where environmental, landscape, and biodiversity preservation issues are particularly sensitive.

The project develops a **sober and contemporary architectural language** based on the notions of **osmosis, simplicity, and linearity**, giving rise to the concept **Along the Water**. Conceived as a **discreet infrastructure** following the **lines of the hydraulic landscape**, the building adopts a **simple and controlled architectural expression, in dialogue with the canals, embankments, and the horizontality** of the site. The selected materials (wood, aged roof tiles, and vegetated walls), together with the treatment of the external spaces, reinforce this **ambition of environmental and landscape integration** through a **sensitive and sustainable approach to the territory**.



Concept - Design approach - Ecluse Carrée site plan - Along the Water

Concept - Along the Water



Facade concept – principle section - Along the Water

## HQE® targets

### Target 1 – Synergy and coherence with the territory and its infrastructures

- Integration of the project in response to the existing context
- Preservation of long open views and wide horizons.
- Harmonious integration through the choice of materials.

### Target 4 – Landscape

- Use of horizontal timber cladding and vegetated walls to ensure seamless integration with the surrounding architecture and landscape
- Double-pitched tiled roof
- Planting of locally adapted species promoting biodiversity

### Target 5 – natural environments and ecosystems

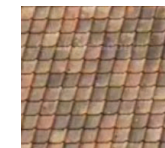
- Creation of a vegetated swale planted with semi-aquatic species
- Development of habitats supporting local biodiversity

### Target 6 – water management

- Hydraulic structure enabling on-site water management
- Site greening strategy:
  - Vegetated gable walls
  - Vegetated cellular paving
  - Vegetated swale
  - Rustic meadow planting

### Target 7 – materials, by-products and waste management

- Bio-based insulation materials
- Vegetated walls
- Local roof tiles
- Native plant species



Aged roof tiles



Timber cladding with cover battens



Vegetated wall



External insulation in wood fiber



Vegetated cellular paving



Vegetated swale