

Bioclimatic energy refurbishment, installation of photovoltaic pannels in the Potable Water Plant of Longueville (77) - France



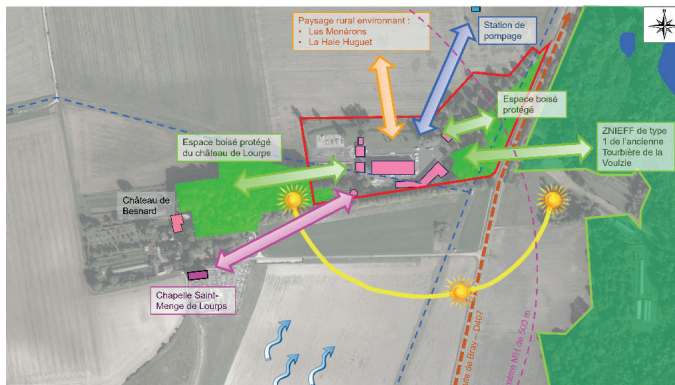
industrial site : energetic refurbishment, interior wall insulation (ITI)
With Biobased materials + Double glazed windows + solar protections + photovoltaic shades
energetic objective 293 kWhfe/m².Year anticipating the tertiary Decree (-40% 2030 -50% 2040 -60% 2050).

PUBLIC BUILDING	Eau de Paris
Location	LONGUEVILLE (77) - France
Project mission	Bioclimatic energy refurbishment, installation of photovoltaic pannels
consultants	AR ARCHITECTES, BOST INGENIERIE, EUROELEC SMART ENERGY
area	1 023.5 m ² (building footprint) 37 002 m ² (plot)
cost	1 700 k €
Date	PRO/DCE in progress 2025
energies generated	Maximum power: 99 kWc 115 MWh/year of energy produced



View of the north façades of the main operations building – projected state, restored in accordance with the original

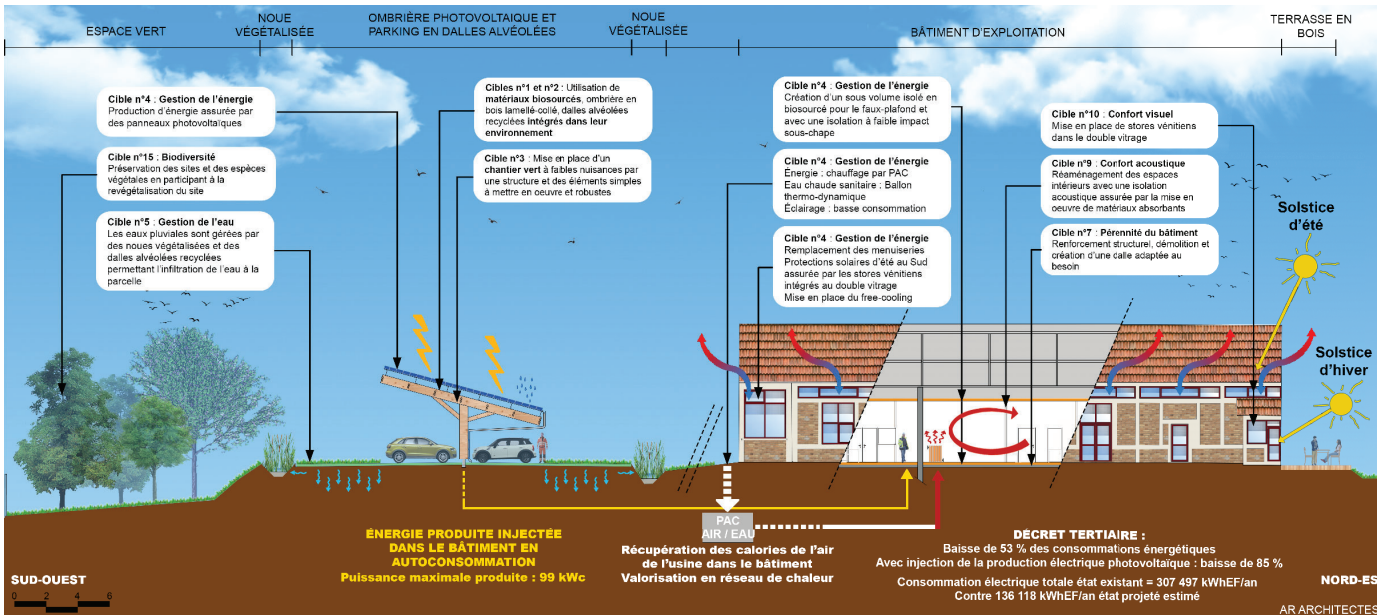
The refurbishment of the potable water plant of Longueville, aims to **decrease its global energy consumption from 404.2 kWhfe/m².year to 293 kWhfe/m².year (within 2030)**. Our mission consists in the **refushishment of the operating building** including interiors, the **thermal insulation** as well as the installation of **PV pannels** above the parking. The total set is designed to be **integrated into the natural and protected envrionment**.



Plan masse bioclimatique



Perspective of photovoltaic shade – projected status – 460 m² of photovoltaic panels and 115 MWh/y of electricity



HQE® Principles Section – Photovoltaic Canopy and Operations Building



Blind integrated into the glazing



Cellulose panel



Green hollowcore slabs



Semi-aquatic plants



PV pannels

SUSTAINABLE COMMITMENTS (HQE®)

FIRST COMMITMENT : QUALITY OF LIFE

AIR QUALITY

- The air inside of the building will be **renewed and improved** by the installation of a **central air extraction**.

HYGROTHERMAL COMFORT

- Installation of free cooling to improve hygrothermal comfort management.
- Use of high-performance double glazing for good insulation and hygrothermal comfort

VISUAL COMFORT

- Blind will be integrated into the glazing to reduce the impact of the sun inside of the building. As well as to assure a good interior lightning for the users.

SECOND COMMITMENT : RESPECT OF THE ENVIRONMENT

ENERGY MANAGEMENT

- To reduce energy consumptions, the building was refurbished with a bioclimatic approach.
- The southern facades will be insulated and protected from the heat during summer.
- The western facades will be insulated from the cold during the low temperatures.
- Heating pump will be used as a renewable energy to heat the building during winter.
- PV pannels will be installed as shades above the outside created parking.

CLIMATE CHANGE

- Planted ditches will be created to collect rainwater runoff of the parking.
- Hollow core slabs were designed on the parking making it possible to infiltrate the water into the ground.

MATERIAL RESOURCES

- All materials used are sustainable and require **low maintenance** (structure, framework, insulation).