

# ARCHITECTURAL AND LANDSCAPE ECO-DESIGN OF DATA HILLS'S SUBSTATION BUILDING IN AULNAY-SOUS-BOIS (95)



INDUSTRIAL site, HQE® APPROACH : ELECTRICAL SUBSTATION

CLIENT	RTE
LOCATION	Aulnay-Sous-Bois (95), France
PROJECT	Architecture and landscape design of DATA HILLS's electrical substation (data centre)
CONSULTANT MISSION	AR ARCHITECTES, architectural and landscaping project management
ELECTRICAL CAPACITY SURFACE	225kV Building : 1 230m <sup>2</sup> Plot : 2 320 m <sup>2</sup>
BUDGET	4 896 480 euros HT
TIMELINE	2023 competition



Masterplan

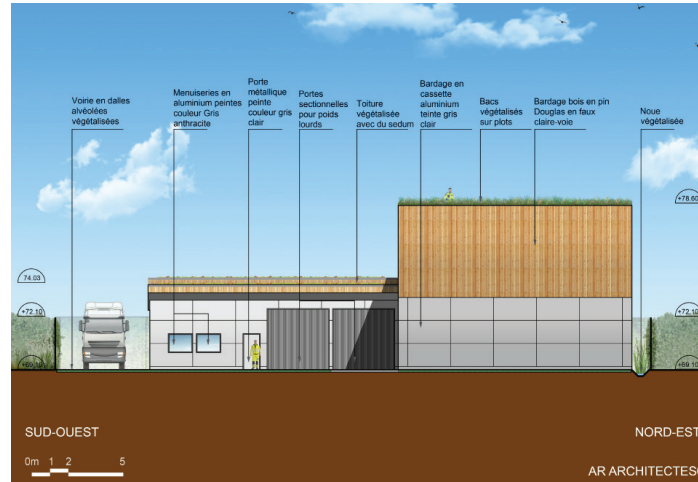


Perspective of the project integrated into its environment

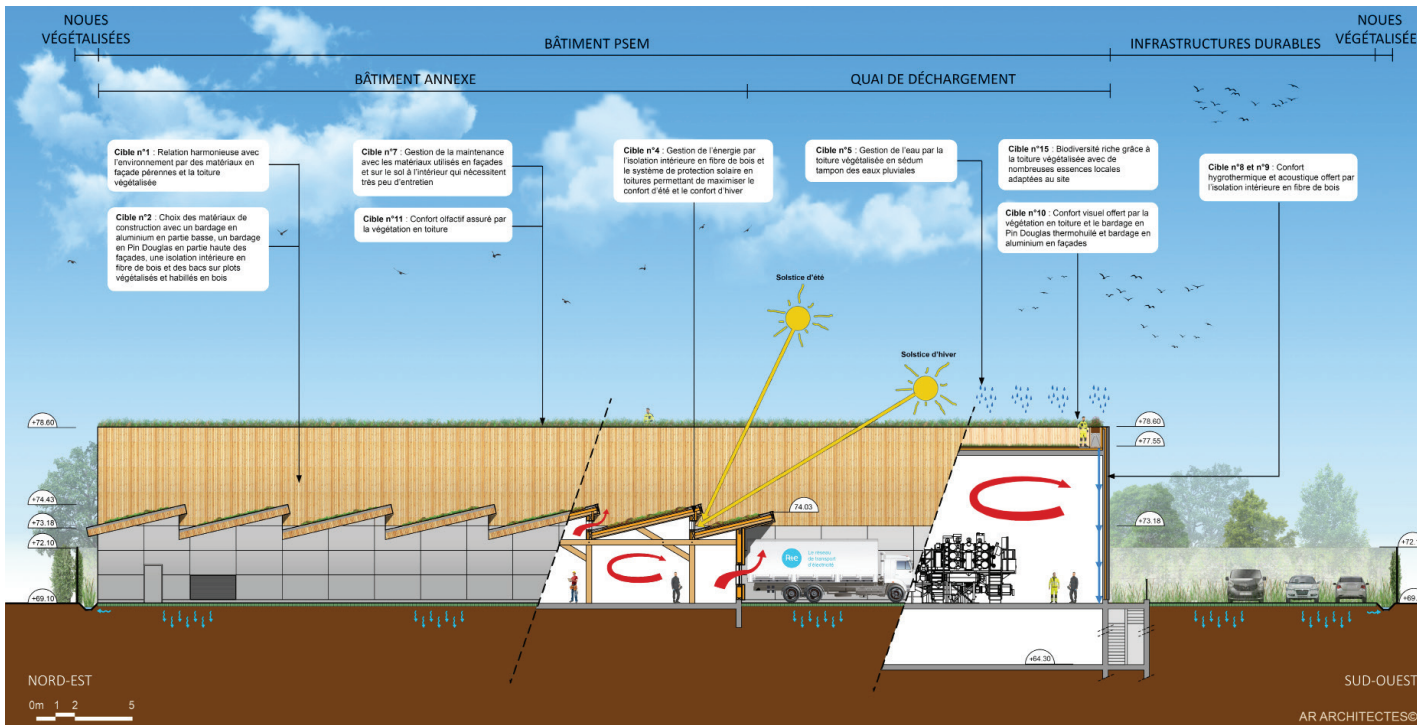
Located **at the crossroads of an industrial urban fabric, a tertiary sector zone and protected natural areas (ZNIEFF type II)**, the site of the future DATA HILLS's electrical substation (ES) in Aulnay-Sous-Bois (95) will be **integrated into a complex and rich environment**, with numerous environmental challenges, including the protection of the biodiversity of the neighbouring natural areas. The result is **The Urban Edge® project: Electrical substation buildings in Aulnay-sous-Bois**. The buildings are **low-carbon and eco-designed**. The ES building has a concrete structure, **metallic cladding and Douglas pine wood cladding**. The technical building has a **timber-framed structure, insulated with wood fibre and clad in metal cladding**. Roofs and infrastructure are planted with **vegetation allowing them to be integrated into the natural surroundings**.



North-west section



South-east section



High Environmental Quality® section

## HQE® targets :

### target 1 : HARMONIOUS RELATIONSHIP BETWEEN THE BUILDING AND ITS ENVIRONMENT

- Facade treatment using biodegradable, sustainable materials biodegradable such as **aluminium and Douglas pine wood**.
- Architectural integration of the building with its immediate surroundings : **business park** on to the north and the **Sausset departmental park** on the south.

### target 2 : CHOICE OF INTEGRATED PRODUCTS AND BUILDING MATERIALS

- **Timber frame structure**.
- External insulation with **wood fibre panels**.
- **Wooden cladding in Douglas pine wood at the top**.
- **Aluminium metal cladding**.

### target 4 : ENERGY MANAGEMENT

- **External Thermal Insulation** is used to reduce the energy consumptions.
- Bioclimatic architecture : **Solar protection system** on roofs to maximise summer and winter comfort.

### target 5 : WATER MANAGEMENT

- Rainwater from roofs as well as on the roads are collected into **planted channels** then infiltrated into the ground, zero reject.

### target 10 : VISUAL COMFORT

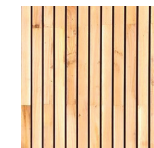
- **Planted roofs** on the buildings, **planted roads**, as well as douglas pine wood cladding improve visual comfort for the users and local residents.
- **Biodiversity** restored on the site.

### target 7 : MAINTENANCE AND UPKEEP MANAGEMENT

- Construction materials for buildings as well as infrastructure are **low maintenance**.



Green roof



Douglas pine wood cladding



Aluminium metal cladding

