



Press  
release



15<sup>th</sup> October 2020

## **French National Engineering Awards 2020**

### **Egis wins the Construction and Fit-Out Award for Lycée Bréquigny in Rennes**

**Egis has just been honoured by the French National Engineering Awards\* for its occupied-site refurbishment of the Lycée Bréquigny in Rennes. An example of replicable and innovative renovation that will bring liveability, healthy conditions, energy efficiency and a low carbon footprint to the largest high school in Brittany.**



© Anthracite Architecture

Spanning nearly 20,000 m<sup>2</sup>, Lycée Bréquigny accommodates 3,500 students, making it the biggest high school in Brittany. Built in 1958, its refurbishment had become a pressing necessity to enable it to continue fulfilling its role into the future.

Brittany Regional Council, within the framework of an MGP (or Global Performance Procurement Contract), appointed the teams at Egis Bâtiments Centre Ouest for the design and project management of the energy renovation of part of the day school and accommodation buildings, the refurbishment and conversion of the current canteen building into a lobby, facility management centre, teaching staff room and library, and finally the creation of a new foodservice facility.

The programme's specificities lay in the key focus placed on energy efficiency and low carbon renovation to offer an answer to the challenges arising from the climate emergency, but also to the issues of liveability, air quality and user health. In addition, to allow classes to continue, the operation took place while the school was occupied.

## Bio-based materials and off-site prefabrication: low-carbon solutions

Egis focussed its design work specifically on achieving **environmental excellence** and leveraging the two main sources of greenhouse gas emissions: materials and transport.

Consequently, the solution selected to reduce the environmental impact of construction work was to **install wood framed walls and roofs made from wooden panels prefabricated locally** (less than 50 km from the work site) and based on a tried and tested implementation process.

To guarantee teaching continuity during the work, the building procedure was carefully designed to keep disturbance to a minimum.

The use of **off-site prefabrication** therefore helped to reduce potential technical hitches, facilitate work on an occupied site, and control construction deadlines and quality.

## A collaborative design approach

Egis adopted a unique approach for the design of this project based on an iterative process in permanent collaboration with all the partners involved. **Aided by a digital model, the project was designed to meet exact needs and was improved continuously** through the following steps:

1. Digital modelling of the buildings,
2. Simulation of sunlight,
3. Simulation of solar protection,
4. Choice of options to reduce energy needs and guarantee liveability,
5. Corrections to the model,
6. Dynamic thermal simulation,
7. Pursuit of best results regarding the remaining needs.

## A replicable, resilient and high-performance renovation model

Committed to energy efficiency throughout the duration of the contract, Egis brought to the table a response made up of innovative and ad hoc solutions based on the three criteria of sobriety, sustainability and effectiveness. This response is the **design of a replicable renovation model**. The energy renovation of Lycée Colbert in Lorient in 2015 had been a pilot project for Egis. The success of the Lycée Bréquigny project, which represents a step up in scale, offers proof of the pertinence of this model.

In the space of 10 months, 10,000 m<sup>2</sup> of facilities on an occupied site were refurbished using a unique methodology that can be replicated on most school facilities built more than 20 years ago. This model combines low-carbon renovation with the guarantee of liveability, user health and energy saving, with an eight-year commitment from Egis. **A solution that rises to the challenges of the climate emergency, but also adapts to the financial constraints of local authorities.**

For a given energy performance level, the average cost of this project only amounted to €725/m<sup>2</sup>, as against €2100 for the construction of a new building. The carbon footprint of the construction products, meanwhile, is divided by 2.5, with emissions of approximately 400 kgCO<sub>2</sub>e/m<sup>2</sup> compared with 1,000 kgCO<sub>2</sub>e/m<sup>2</sup> generally observed in newbuild operations.

This model thus represents a **viable response to the revitalisation of a resilient economy**, with optimised and duplicable building and operation costs.

---

Partners: Région Bretagne, SemBreizh, Legendre Construction, Anthracite architecture, MANA, BEGC, JD EUROCONFORT, SPIE

\* Grand Prix National de L'Ingénierie: a competition designed and organised by Syntec-Ingénierie, the French trade association for engineering, in partnership with the Ministry for the Ecological Transition and the Ministry of the Economy, Finance and the Recovery's directorate general for enterprise (DGE), and in association with Le Moniteur group.

## About the Egis group

---

IMAGINE. CREATE. ACHIEVE.  
*a sustainable future*

Egis is a major international group in the construction engineering and mobility services sectors whose unique global service range encompasses infrastructure consulting, engineering and operation. Through our capacity for innovation, we respond to the climate emergency and to the greatest challenges of our time by offering solutions and acknowledged know-how in the areas of transportation and mobility, sustainable city construction, buildings, water, the environment and energy.

A 75%-owned subsidiary of Caisse des Dépôts, with the remaining 25% held by partner executives and employees, Egis Imagine a sustainable future, working for populations and social progress.

**€1.22 bn** managed turnover in 2019

**15,800** employees

## Press contacts

---

### Isabelle Bourguet Mayrand

Strategy, Marketing and Communications Director  
Tel.: +33 (0)1 39 41 44 17 / +33 (0)6 17 10 29 70  
[isabelle.bourguet@egis.fr](mailto:isabelle.bourguet@egis.fr)

### Sabine Mendy

Deputy Communications Director  
Tel.: +33 (0)1 39 41 43 05 / +33 (0)6 25 33 02 64  
[sabine.mendy@egis.fr](mailto:sabine.mendy@egis.fr)

[www.egis-group.com](http://www.egis-group.com)

follow us



1,5°C  
THE PATHWAYS  
TRANSFORMATION

