

# Headquarters of the CAUE (Architecture and Urban Planning Council) in Gironde

by [Elodie Vouillon](#) / 2019-05-22 15:14:16 / France / 6437 / FR



Primary energy need :

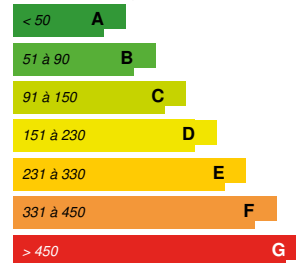
**69** kWhep/m<sup>2</sup>.an

(Calculation method : )

## ENERGY CONSUMPTION

Economical building

Building



Energy-intensive building

**Building Type** : Office building < 28m  
**Construction Year** : 2018  
**Delivery year** : 2018  
**Address 1 - street** : 293 rue d'Ornano 33000 BORDEAUX, France  
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 960 m<sup>2</sup>  
**Construction/refurbishment cost** : 1 781 000 €  
**Number of Work station** : 33 Work station  
**Cost/m2** : 1855.21 €/m<sup>2</sup>

Certifications :



## General information

Located in the center of Bordeaux, the building CAUE Gironde is the result of the **renovation of an old shed** which he has kept the template. The project is organized around a **bioclimatic greenhouse acting as a buffer between the outside and the inside** . By playing on occultation, ventilation, air mixing, this "intermediate" space benefits from a **favorable temperature difference for each season** . The structure of the new part of the building, alternating the **principles of wood-frame walls and stud-beams uses local wood** . This constructive principle has made it possible, thanks to the pre-fabrication precision of the sub-assemblies, to obtain an excellent level of airtightness which, in addition to good distributed insulation, gives the building a **very little loss- absorbing envelope**.

## Sustainable development approach of the project owner

As an association, the CAUE Gironde aims to promote architectural quality, urban and landscape. Through this project, we wanted to prove that a sober, energy efficient and modern renovation was possible in the historic city center. It was also to build a "showcase", a playful building allowing the CAUE to put forward certain principles and make them understandable. The aim of the project was to build a building whose energy consumption would not exceed 40 kWh / m<sup>2</sup> / year for all uses combined. This is the first project led by the CAUE Gironde which is so ambitious

## Architectural description

Located in the center of Bordeaux, the building CAUE Gironde is the result of the renovation of an old shed which he has kept the template. The project is organized around a bioclimatic greenhouse acting as a buffer between the outside and the inside. By playing on occultation, ventilation, air mixing, this "intermediate" space benefits from a favorable temperature difference for each season. The structure of the new part of the building, alternating the principles of wood-frame walls and stud-beams uses local wood. This constructive principle has made it possible, thanks to the pre-fabrication precision of the sub-assemblies, to obtain an excellent level of airtightness which, in addition to good distributed insulation, gives the building a very little loss-absorbing envelope. Most of the office spaces are through and facilitate daytime over-ventilation of the building in summer.

## Building users opinion

The building is very pleasant to use. The natural lighting of the workspaces is good, the overall thermal comfort felt is good. Some spaces, however, remain difficult to heat because of a high ceiling and communication with vertical traffic.

## If you had to do it again?

The heating system managed by blowing cassettes could be replaced by a low temperature floor heating system coupled with a heat pump. The principle of heating by air is indeed sometimes difficult to manage not to generate discomfort.

## See more details about this project

<http://www.cauegironde.com/caue-nouveau-siege-en-image/>

## Photo credit

Ivan Mathie

## Stakeholders

### Contractor

**Name :** CAUE de la Gironde

**Contact :** Elodie Vouillon mail: elodievouillon@cauegironde.com tel: 0610788166

<http://www.cauegironde.com/>

### Construction Manager

**Name :** ADH architectes

**Contact :** Nicolas Novello mail: nicolas.novello@doazan-hirschberger.com tel: 0678080371

<http://www.doazan-hirschberger.com/fr>

### Stakeholders

**Function :** Assistance to the Contracting Authority

Less is More

Yaël Larroze tel: 0688376439 mail: contact@lessismore.bet

AMO environment from the design to the operation of the building.

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**Function :** Construction company

Pyénées Charpente

Monsieur Larouy tel:05 62 97 12 12 mail:c.larouy@pyrenees-charpentes.fr

<http://www.pyrenees-charpentes.fr/>

Wood structure / insulation / cladding

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**Function :** Thermal consultancy agency

VERDI ingénierie

Arnaud Ferdinand mail: aferdinand@verdi-ingenierie.fr tel: 05 56 00 72 01

<http://www.verdi-ingenierie.fr/>

BET thermal and fluid

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Function : Construction company

UFA

Julien Thouret mail:be@ufa-genieclimatique.com

<https://www.ufa-genieclimatique.com/>

lot plumbing - heating

## Contracting method

Separate batches

## Type of market

Table 'c21\_maroc.rex\_market\_type' doesn't exist

## Energy

### Energy consumption

Primary energy need : 69,00 kWh<sub>ep</sub>/m<sup>2</sup>.an

Primary energy need for standard building : 80,00 kWh<sub>ep</sub>/m<sup>2</sup>.an

Calculation method :

Breakdown for energy consumption : heating: 14,283 kWh<sub>ep</sub> / m<sup>2</sup>.an air conditioning: 2,161 kWh<sub>ep</sub> / m<sup>2</sup>.an ECS: 4.13 kWh<sub>ep</sub> / m<sup>2</sup>.an lighting: 2,457 kWh<sub>ep</sub> / m<sup>2</sup>.an auxiliaries: 6,185 kWh<sub>ep</sub> / m<sup>2</sup>.an process: 6,809 kWh<sub>ep</sub> / m<sup>2</sup>.an

Initial consumption : 210,00 kWh<sub>ep</sub>/m<sup>2</sup>.an

### Real final energy consumption

Final Energy : 32,31 kWh<sub>ep</sub>/m<sup>2</sup>.an

Real final energy consumption/m<sup>2</sup> : 38,00 kWh<sub>ep</sub>/m<sup>2</sup>.an

Real final energy consumption/functional unit : 38,00 kWh<sub>ep</sub>/m<sup>2</sup>.an

Year of the real energy consumption : 2 018

### Envelope performance

More information :

The inertia of the building is provided by the implementation of collaborative floors.

Indicator :

Air Tightness Value : 1,00

## Renewables & systems

### Systems

Heating system :

- Heat pump
- Tape
- VAV System

Hot water system :

- Individual electric boiler

Cooling system :

- Reversible heat pump
- Tape
- VAV Syst. (Variable Air Volume system)

#### Ventilation system :

- Free-cooling
- Single flow

#### Renewable systems :

- No renewable energy systems

#### Solutions enhancing nature free gains :

Serre bioclimatique centrale

## Environment

### Urban environment

Land plot area : 618,00 m<sup>2</sup>

Built-up area : 523,00 %

The headquarters of the CAUE de la Gironde is part of a dense urban environment in the city center of Bordeaux. Ornano Street, approximately 12m wide, is home to the tram. The sidewalk adjoining the building is 2.2m wide.

## Products

### Product

Glued laminated wood

SACBA

<http://www.sacba.fr/actualites/lamell%C3%A9-coll%C3%A9>

Product category : Gros œuvre / Charpente, couverture, étanchéité

Current structural product employing maritime pine

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CLT stair panels

Egoin

<https://fr.egoin.com/nos-produits/clt-clt-mix/>

Product category : Gros œuvre / Charpente, couverture, étanchéité

CLT and pin maritime

Prefabrication in workshop, fast implementation

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Sun Tunnel light pipes

VELUX

Product category : Génie climatique, électricité / Eclairage

Allows to reflect the natural light of the roof to the circulations

good integration

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framing wood

Scierie Labadie

<http://www.scierie-labadie.com/>

Product category : Gros œuvre / Structure, maçonnerie, façade

maritime pine of the Landes

RAS

## Costs

## Construction and exploitation costs

Cost of studies : 324 375 €

Total cost of the building : 2 494 971 €

## Energy bill

Forecasted energy bill/year : 4 716,00 €

Real energy cost/m<sup>2</sup> : 4.91

Real energy cost/Work station : 142.91

## Health and comfort

### Water management

Consumption from water network : 87,00 m<sup>3</sup>

Consumption of harvested rainwater : 71,00 m<sup>3</sup>

Water Self Sufficiency Index : 0.45

Water Consumption/m<sup>2</sup> : 0.09

Water Consumption/Work station : 2.64

Meters per station were implemented to analyze our consumption and the amount of water saved by recovery of EP

### Indoor Air quality

Air handling system dedicated to the meeting room controlled by the CO<sub>2</sub> concentration

### Comfort

Acoustic comfort :

- sound insulation against external noise greater than 34dB
- sound insulation against noise between offices above 40dB

## Carbon

### GHG emissions

GHG in use : 3,70 KgCO<sub>2</sub>/m<sup>2</sup>/an

Methodology used :

ADEME

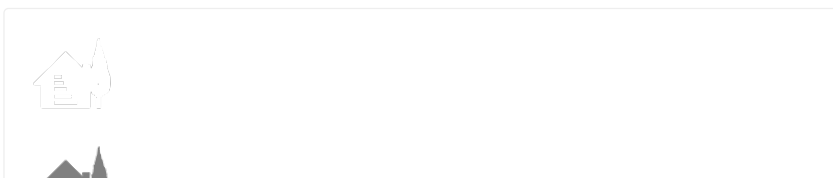
## Contest

### Reasons for participating in the competition(s)

After a first year of operation, we find low energy consumption levels coupled with real thermal comfort.

The favorable temperature difference brought by the bioclimatic greenhouse limits thermal losses in winter and preserves a cooler atmosphere than outside in summer.

### Building candidate in the category





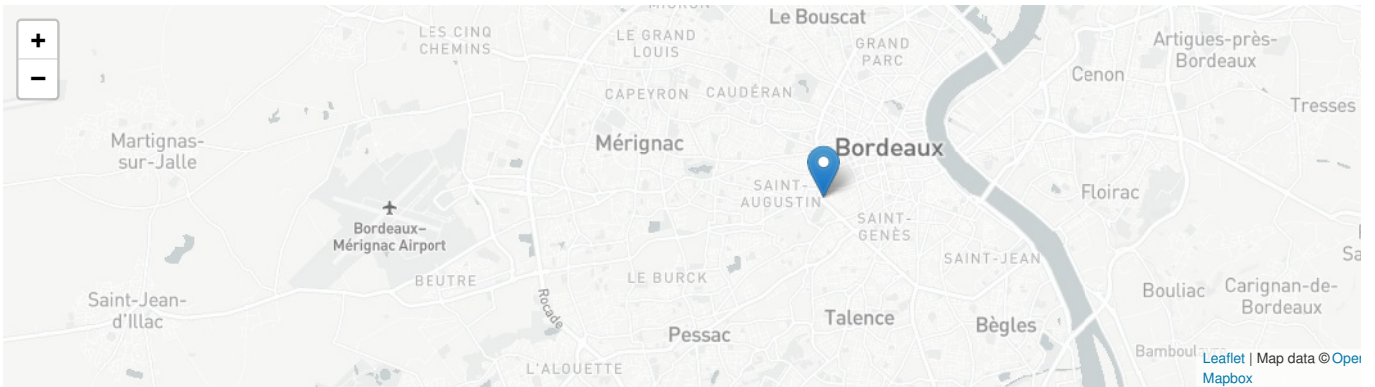
Energie & Climats Tempérés



Prix du public



Prix des Etudiants



Date Export : 20230526132949