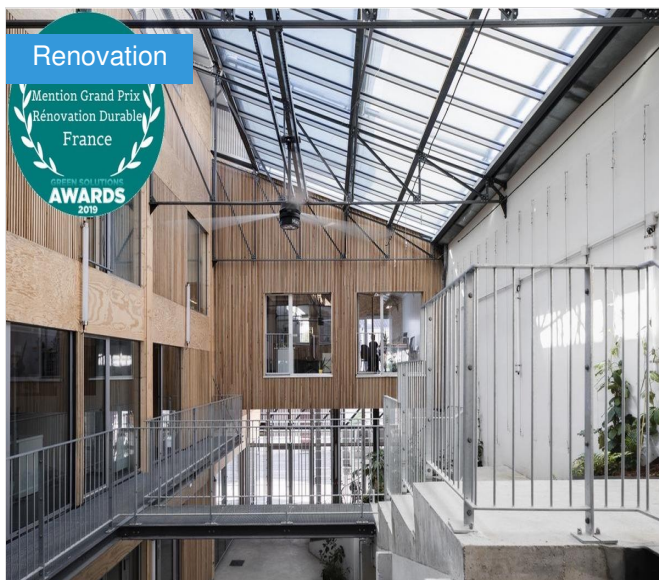


Headquarters of the CAUE (Architecture and Urban Planning Council) in Gironde

by Elodie Vouillon / 2019-05-22 15:14:16 / France / 6389 / FR



Renovation



Primary energy need :

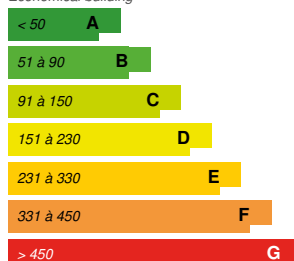
69 kWhep/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building

Building



B

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 m²
Construction/refurbishment cost : 1 781 000 €
Number of Work station : 33 Work station
Cost/m2 : 1855.21 €/m²

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 / m² / 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.

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

Function : Thermal consultancy agency

VERDI ingénierie

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

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

Global performance contract

Energy

Energy consumption

Primary energy need : 69,00 kWh_{ep}/m².an

Primary energy need for standard building : 80,00 kWh_{ep}/m².an

Calculation method : RT 2012

Breakdown for energy consumption : heating: 14,283 kWh_{th}/m².an air conditioning: 2,161 kWh_{th}/m².an ECS: 4.13 kWh_{th}/m².an lighting: 2,457 kWh_{th}/m².an auxiliaries: 6,185 kWh_{th}/m².an process: 6,809 kWh_{th}/m².an

Initial consumption : 210,00 kWh_{ep}/m².an

Real final energy consumption

Final Energy : 32,31 kWh_{th}/m².an

Real final energy consumption/m² : 38,00 kWh_{th}/m².an

Real final energy consumption/functional unit : 38,00 kWh_{th}/m².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 : I4

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 m²

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 : Structural work / Carpentry, cover, tightness

Current structural product employing maritime pine

CLT stair panels

Egoïn

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

Product category : Structural work / Carpentry, cover, tightness

CLT and pin maritime

Prefabrication in workshop, fast implementation

Sun Tunnel light pipes

VELUX

Product category : HVAC, électricité / lighting

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

good integration

framing wood

Scierie Labadie

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

Product category : Structural work / Structure - Masonry - Facade

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/m² : 4.91

Real energy cost/Work station : 142.91

Health and comfort

Water management

Consumption from water network : 87,00 m³

Consumption of harvested rainwater : 71,00 m³

Water Self Sufficiency Index : 0.45

Water Consumption/m² : 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 CO₂ 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 KgCO₂/m²/an

Methodology used :

ADEME

Contest

Reasons for participating in the competition(s)

Après une première année d'exploitation, nous constatons des niveaux de consommation énergétique faibles couplés à un réel confort thermique.

L'écart favorable de température apporté par la serre bioclimatique limite les déperditions thermiques en hiver et préserve une atmosphère plus fraîche que celle de l'extérieur en été.

Building candidate in the category



Energie & Climats Tempérés





Prix du public



Prix des Etudiants



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