


Construction of the Odysseus offices

by Pierre LARUAZ / 2021-03-09 09:41:03 / France / 4938 / FR

New Construction



Primary energy need :

-39 kWh_{ep}/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building

< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

Energy-intensive building

Building **A**

Building Type : Office building < 28m
Construction Year : 2017
Delivery year : 2018
Address 1 - street : 18 Boulevard de l'Epervière 49000 ECOUFLANT, France
Climate zone : [Cbc] Mild, dry winter, warm and wet summer.

Net Floor Area : 478 m² SHON RT
Construction/refurbishment cost : 911 831 €
Cost/m2 : 1907.6 €/m²

Certifications :



Proposed by :



General information

The project consists of the construction of the head office of the company ISORE OUEST ATLANTIQUE, a tertiary building with positive energy Bepos Effinerie 2013, classified E3C1. ODYSSEUS was renowned for his intelligence and daring. The architect, Jean Pierre CRESPEY, and the GELINEAU design office were inspired by these characteristics to design the head office of the company ISORE OUEST ATLANTIQUE.

Bold, this is the way in which the architect designed the project: "the lines of the building, which seems to fly away, reflect the rigor and dynamism of the company", indicates Jean Pierre CREPEY, who also emphasizes the consistency architectural between the offices and the storage area.

Intelligent, smart, as the Centralized Technical Management (GTC) on cloud, which allows the regulation of the lighting and the temperature of the offices according to the natural light and the occupation of the rooms or as the design, which requested the implementation of innovative techniques at an affordable price.

Sustainable development approach of the project owner

The client wanted, through the construction of the headquarters of the company ISORE OUEST ATLANTIQUE, to highlight the different techniques implemented by the ISORE group: cladding, thin plaster on insulation, waterproofing, photovoltaic, and build a building very energy efficient.

The owner's representative is also president of the ISORE group, a company specializing in building envelopes. For more than 15 years, the development of the company has focused on the pillars of sustainable development:

- the fight against climate change: this is one of the consequences of the company's activity; in fact, 3/4 of the activity of the ISORE group concerns the thermal renovation of buildings, and consequently, the reduction of energy consumption. In 2007, the construction of the ISORE group's head office, based in Laval, was an opportunity to showcase good practices, being the first positive energy office building in the Pays de Loire region. In addition, the group favors train transport for management trips and carpooling for companions, on the various sites of the group, in the west, in Ile-de-France or in Hauts-de-France. . This environmental awareness has led ISORE to establish its carbon footprint, and to offer its customers "carbon quotes", in addition to the financial quotes.
- preservation of environments and resources: special attention is paid to sorting site waste, with 72% of waste recycled in 2019.
- promote social cohesion: the ISORE group invests on average 3% of the total payroll in training every year, i.e. more than 3 times the legal obligation, and has created an internal training school to promote the increase in skills of his collaborators. Internal communication takes the form of the distribution of an internal newspaper every quarter, an information meeting on the progress of the company every 2 months for all the employees of the head office and by the visit of the management on all company projects, at least every quarter, in order to promote "field" discussions and feedback. In addition, safety at work is the No. 1 concern of the company, which is reflected in the use of adapted, renewed and efficient equipment (fleet of 50 jack-up platforms, 6,000 m2 of scaffolding, rental portable equipment , vehicles equipped with security systems, etc ...). Finally, within the framework of its markets, the ISORE group carries out more than 6,000 hours of integration every year, thus promoting the integration of personnel away from work.
- Promote a responsible economy: the company's results are shared through profit-sharing and profit-sharing paid to employees, which represents between 0.5 and 1.5 months of salary depending on the year. On the other hand, the companies which participated in the construction of the Ecoflant offices were chosen locally, and have their head office at an average of 24 km from the construction. Finally, ISORE signed the sustainable development charter in 2008, and the diversity charter in 2013.

Architectural description

The entire site is made up of two separate buildings, arranged perpendicular to each other: the so-called "Workshop" building is modular with flexible surfaces, adapted to the needs of the company.

The "office" building is located in the foreground of the land in order to be more visible from the public domain. This high balanced volume seems to float on its vertical supports. The end, more glazed, provides progressive transparency for better visibility of the reception.

On the facade, the external insulation is staged by a projecting overhang, drawing a protective skin on the building, relating to the know-how of the ISORE group.

Finally, the supply of light is controlled by vertical sun breezes which filter and regulate the greenhouse effect.

From design to completion, we have sought to offer a building with great environmental and architectural qualities, with the use of healthy and durable materials. In addition, we wanted a simple, compact structure, therefore economical and energy efficient, the cladding providing the architectural touch of the project.

Building users opinion

"Our head office is distinguished by its aesthetics. Our visitors often emphasize its beauty and its architectural lines different from other buildings in the development area. The working environment is very privileged and ergonomic. The tables are adjustable and adapt to our use (office or collaborative mode). The lights are activated automatically according to our presence in the room, it is very appreciable and respectful of the environment, a good alternative for those who do not always have the reflex of " turn off the lights when leaving a room. The meeting room is very functional thanks to the integrated audio system and the touch projector: a real plus for collaborative work. Our large and organized storage space also facilitates logistics towards our sites. "

If you had to do it again?

We would undoubtedly add a Canadian well, which makes it possible to cool the air in summer, and to heat it in winter, in order to further limit energy consumption. We would also have favored more wood.

See more details about this project

<https://www.groupe-isore.fr/isore-40/zoom-sur-odysseus/>

Photo credit

ISORE WEST ATLANTIC

Stakeholders

Contractor

Name : SCI ODYSSEUS
Contact : M.LARUAZ Pierre

Construction Manager

Name : CRESPIY ET AUMONT
Contact : M. CRESPIY

Stakeholders

Function : Thermal consultancy agency
GELINEAU
M. LUCADELLO/M. LOFFICIAL

Function : Company
JUSTEAU

<http://www.justeau49.fr/>
VRD EARTHWORKS

Function : Company
BEAUMARD
M. BARREAU

<https://www.baumard-gros-oeuvre.fr/>
BIG WORK

Function : Company
ISORE OUEST ATLANTIQUE
M. BOUSSION

<https://www.isore-ouest-atlantique.com/>
WATERPROOFING ITE CLADDING

Function : Company
ISORE BATIMENT
M. LARUAZ

<https://www.isore-batiment.fr/>
CLADDING

Function : Company
AFC
M. DAUDIN

SECTIONAL DOOR LOCKING FRAMEWORK

Function : Company
OUEST SERRURERIE
M. DANGOISE

<http://www.ouest serrurerie.fr/>
EXTERIOR WOOD FURNISHINGS

Function : Company
PARCHARD
M. COUTAULT

<https://www.steparchard.fr/>
interior joinery

Function : Company
3 PIA
M. DUBOIS

INSULATION PLATERY

Function : Company

LEGALL COMISO

M. LEGAL

FALSE CEILING

Function : Company

MALEINGE

M.GALLARD

<https://www.maleinge-carrelage.fr/>

FAIENGE TILES

Function : Company

EIB

M. PALARD - M. METIVIER

<https://www.eib-angers.com/-Accueil-.html>

ELECTRICITY - STRONG LOW CURRENTS - PLUMBING HEATING VENTILATION

Function : Company

FREMY

M. FREMY

<https://www.fremy-peinture.fr/>

SOFT FLOORS

Function : Company

ID VERDE

M. DA CUNHA

<https://idverde.com/fr/>

GREEN ID

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need : -39,00 kWh/m².an

Primary energy need for standard building : 140,00 kWh/m².an

Calculation method : RT 2012

CEEB : 0.0002

Breakdown for energy consumption : Heating: 18.2 DHW: 3.2 Auxiliary: 19.5 Cold: 2.4 Lighting: 29.4 Primary energy consumption without counting renewables is 72 kWh / m².year.

Real final energy consumption

Final Energy : 35,00 kWh/m².an

Real final energy consumption/m² : 49,00 kWh/m².an

Year of the real energy consumption : 2 020

Envelope performance

Envelope U-Value : 0,53 W.m⁻².K⁻¹

More information :

Reinforced concrete walls + 200 mm ITE mineral wool R = 5.7 Aluminum exterior joinery, low-emissive double glazing Uw = 1.6 Polyurethane foam under paving R = 3.7 Rock wool on steel pan R = 5

Building Compactness Coefficient : 2,16

Users' control system opinion :

The centralized and automatic heating control allows a good constant temperature in the offices and allows you to work comfortably without feeling "waves of hot or cold air".

More information

The actual consumption for the year 2020 is 23,560 kWh EF, according to the statement of invoices from the energy supplier (for 478 m² S RT of offices, and 464 m² of workshop).

Renewables & systems

Systems

Heating system :

- Geothermal heat pump
- Water radiator
- Radiant ceiling

Hot water system :

- Individual electric boiler

Cooling system :

- Geothermal heat pump

Ventilation system :

- Nocturnal Over ventilation
- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Heat Pump on geothermal probes

Renewable energy production : 156,00 %

Other information on HVAC :

only the meeting room is air conditioned

70 photovoltaic panels of 260 Wp for an annual production of 19,000 kWh / year Geothermal energy, 9.5 kWh EP / m².year

Solutions enhancing nature free gains :

étanchéité blanche sur les bureaux

Smart Building

BMS :

Centralized Technical Management on cloud, which allows the regulation of lighting and temperature in offices according to natural light and room occupancy.

Users' opinion on the Smart Building functions :

"The centralization of the heating controls is very practical and above all avoids heating the rooms when they are unoccupied. A tool that is easy to use and in favor of the environment!"

Environment

Urban environment

Land plot area : 5 908,00 m²

Built-up area : 12,00 %

Green space : 3 125,00

The building is located in a concerted development zone predominantly tertiary including a lot of green spaces (trees and lawns).

Products

Product

ALPALU REFLECT

AXTER

<http://www.axter.eu/>

Product category : Gros œuvre / Charpente, couverture, étanchéité

ALPALU REFLECT bituminous membrane rolls from AXTER, a process which ensures a reflectivity of 78%.

The implementation was carried out internally by the teams of ISORE OUEST ATLANTIQUE, with pride in being able to contribute to the construction of their offices.



RADIANT PANELS

ZEHNDER

Product category : Génie climatique, électricité / Ventilation, rafraîchissement

Radiant ceiling panels for heating and cooling

HEAT PUMP

VISSMAN

<https://www.viessmann.fr/?>

Product category : Génie climatique, électricité / Chauffage, eau chaude

Geothermal electric heat pump powered by 4 boreholes 100 m deep which capture the calories from the ground.



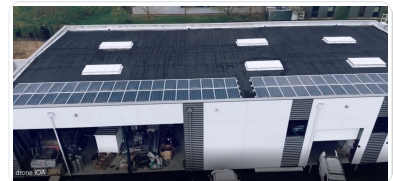
Photovoltaic panels

SOLARDIS

Product category : Gros œuvre / Système passif

70 panels of 260WC each

The system benefits from ATEx case A N ° 2352.



Cardboard insulation

BATIPAC

<https://www.batipac.pro/gammes-ipac>

Product category : Gros œuvre / Structure, maçonnerie, façade

Cardboard sheets coated with aquilux plastic film give it water and air tightness. Thickness: 100 mm Length of 1.2 m with 3 cells of 5 mm.

Costs

Construction and exploitation costs

Renewable energy systems cost : 27 991,00 €

Cost of studies : 95 860 €

Total cost of the building : 911 831 €

Additional information on costs :

The costs indicated are net costs. The cost of the studies includes the fees of the architect and the thermal engineering office. The total cost includes the cost of the office building alone (excluding the unheated workshop).

Energy bill

Forecasted energy bill/year : 4 149,00 €

Real energy cost/m² : 8.68

Real energy cost/Work station : 345.75

Water management

Consumption from water network : 26,00 m³

Water Consumption/m² : 0.05

Water Consumption/Work station : 2.17

Indoor Air quality

Not measured

Comfort

Health & comfort :

If the general design of the building has been carried out by the firm CREPY AUMONT, the layout, orientation and layout of the offices and the workshop are the result of collective work carried out by all the staff of ISORE OUEST. ATLANTIQUE, with the help of the occupational medicine ergonomist, who also provided support.

This is how everyone chose their working environment: the height-adjustable desks for the price study department, the reception desk, the layout of the workshop counter, the storage racks, the magnetic boards of the work supervisors, the layout of the relaxation room, the outdoor terrace for sunny days ...

The meeting room is equipped with an interactive audio and video system. A real plus for collaborative work, especially remotely.

Calculated indoor CO₂ concentration :

non mesuré

Measured indoor CO₂ concentration :

Valeurs non mesurées

Daylight factor : non calculé

Carbon

GHG emissions

GHG in use : 56,14 KgCO₂/m²/an

Methodology used :

DPE method (see label E + C-)

GHG before use : 994,00 KgCO₂ /m²

Building lifetime : 50,00 année(s)

, ie xx in use years : 17.71

GHG Cradle to Grave : 1 101,00 KgCO₂ /m²

label E+C-

Life Cycle Analysis

Material impact on GHG emissions :

90.3

Eco-design material :

A test was carried out on part of the building with cardboard insulation.

Contest

Reasons for participating in the competition(s)

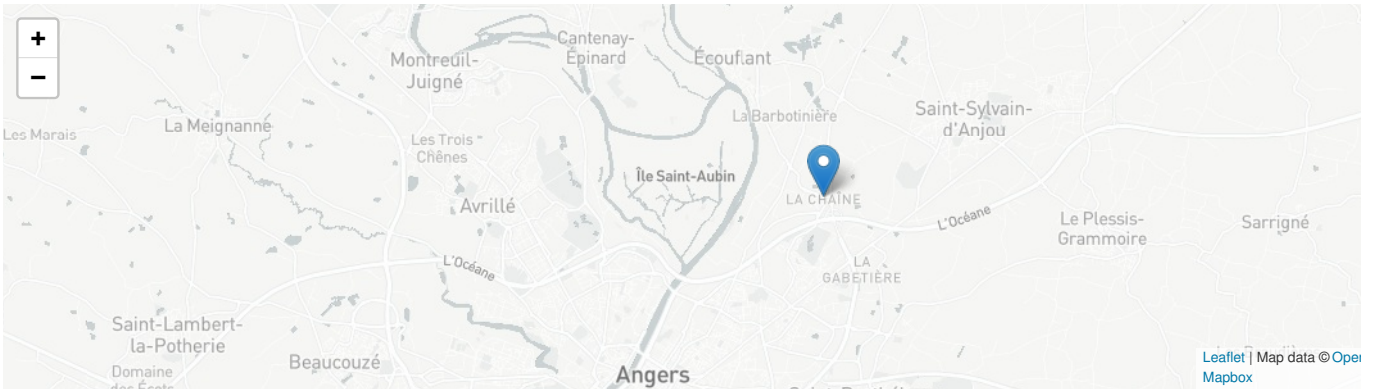
- A positive energy building Bepos Effinergie 2013 (version 3 of 2015), with production of photovoltaic energy
- An E3C1 classification
- A concrete structure insulated from the outside (which increases the inertia of the walls)

- Heat production is provided by a water / water type heat pump, supplied by 4 boreholes 100 m deep (geothermal)
- The heating transmitters are radiant hot water panels incorporated in the false ceilings, which operate thanks to individual presence detectors per office
- Each office is equipped with a device for manual or automatic switching on or off of the LED lighting, depending on the presence
- The "white" waterproofing of the offices allows light to be reflected in summer, which improves thermal comfort and the durability of the waterproofing
- The work is carried out by local companies, whose head office is located on average 24 km from the site

Building candidate in the category



Energie & Climats Tempérés



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