B'EST

by sophie droalin / 2018-06-26 14:58:35 / France / 6616 / FR

Primary energy need :

416.8 kWhep/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building — *Building*

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

Energy-intensive building

Building Type : Other commercial buildings
Construction Year : 2018
Delivery year : 2018
Address 1 - street : A4 sortie 41 échangeur de Farébersviller 57450 FARéBERSVILLER, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 55 000 m² Autre type de surface nette
Construction/refurbishment cost : 60 000 000 €
Cost/m2 : 1090.91 €/m²

Certifications :

NF HQE — breeam

General information

Complex of 55,000m2, built in the heart of the old coalfield Lorraine, near Germany, integrating:

- A shopping center including an Auchan hypermarket and about 60 banners;
- A retail of 10 banners;
- Restaurants including a Mac Donald.

The project aims at a BREEAM certification level Very Good on the perimeter of the shopping center and HQE Aménagement for the entire site. In this framework the design has integrated:

- renewable energies (4,300m2 of photovoltaic panels);
- valorization of biodiversity (22,000m2 of vegetated roof, alternative management of stormwater -noues, retention basin-, ecological monitoring)
- a societal and local dimension (vegetable gardens, hives, orchard)
- the economy of the water resource (rainwater recovery)
- promotion of alternative modes of travel (carpooling, electric vehicles)

Sustainable development approach of the project owner

For more than 45 years, CODIC has been working as a real estate developer. The main areas of development are commercial real estate and commercial real estate.

Each of their projects is characterized by the excellence of its location, the quality of programming, a strong architectural identity, the use of high-level technologies, the commitment to sustainable development for all our buildings and a carefully landscaped Area.

For CODIC, the "Green" approach is not new because the environment has always been part of their fundamental criteria. The certification of their buildings is now part of the development of standards established at European level. This environmental visibility makes it possible to objectify sustainability with their customers.

The BREEAM certification chosen has the advantage of being internationally recognized, recognized by investors and occupants. This environmental bias made it possible to federate all 100 takers around common objectives, summarized in the takers' specifications.

The concerns and commitments of CODIC are as follows:

- Systematically certify all buildings according to the BREEAM technical reference system;
- Integrate the project harmoniously with its environment;
- Offer optimal energy performance and control;
- Promote green spaces;
- Ensure accessibility of the site by public transit and soft mobility;
- Ensure good water management
- Reduce the carbon footprint
- Choose materials wisely;
- Effectively manage construction processes
- Sustain the developments.

At the same time, the HQE Amenagements certification was also targeted. Approach applied throughout the project scope, it reinforces the issues defined by the MOA while strengthening actions defined and implemented on other topics such as the local societal dimension revitalized around the management of vegetable gardens, an orchard and hives.

Architectural description

- hygrothermal comfort guaranteed throughout the year in coherence with the targeted energy performance,
- visual comfort through the provision of natural light and optimized artificial lighting design (balance between energy performance and the need for merchandising).

Sanitary quality of indoor and outdoor spaces via

- the implementation of interior cladding with controlled environmental impacts,
- an optimized ventilation system (evacuation of internal pollutants),
- a landscape design that values local biodiversity and the creation of healthy living areas (allergenicity of the species taken into account).

Building users opinion

The return of satisfaction request has not yet been returned

If you had to do it again?

The peculiarity of the project is a building site in two stages: _A first phase: the realization of "commercial hulls"; _A second phase: the arrival of lessees, with the specific development work of the commercial units. The first phase had an optimized mastery given the limited number of stakeholders (general contractor, BET phase execution, etc.) while the second phase was more sensitive: _An MOE representative per lessee (100 takers in total) _companies involved by commercial unit _General specifications for some brands that may be inconsistent with the environmental specifications described in the design. _A pilot for users with little awareness of environmental certifications. This sensitivity of the second phase was offset by the more sustained presence of the AMO environment. For future projects it would be necessary _Take into account, as far as possible, the specific needs that can be made by lessees (specific hygrothermal conditions for chocolate type cells, demand for additional electrical power for the development of goods, etc.). If necessary, arbitration meetings will have to be mounted on these subjects (here informally by email generally). _Consult the pilot of the takers under environmental criterion (no case here)

Stakeholders

Contractor

Name : CODIC
Contact : XOLIN Vincent
http://fr.codic.eu/

Construction Manager

Name : THALES ARCHITECTURES
Contact : Damien ROCHON
http://www.thalesarchitectures.fr/fr/

Stakeholders

Function : Designer

SCAU

Adeline TALLET

http://www.scau.com/fr/home

Function : Assistance to the Contracting Authority

FERAL et associés

Mathieu VILLOT

http://feral-associes.eu/

Function : Thermal consultancy agency

EGIS RHONE ALPE

Yannick POUSSARDIN

https://www.egis.fr/contact/egis-batiments-rhone-alpes
Project Design / Calculation RT2012 phase design

Function : Other consultancy agency

EGIS GRAND EST

Olivier BETTER

https://www.egis.fr/contact/egis-batiments-grand-est-siege-social
BET Structure / Fluids and VRD in the production phase

Function : Other consultancy agency

ECOSPHERE

Claire PIRAT

http://www.ecosphere.fr/
Ecologist in design, realization and exploitation phase

Function : Assistance to the Contracting Authority

EGIS Conseil Bâtiments

Violaine DUBREUX

https://www.egis.fr/organisation/egis-conseil-batiments
AMO for BREEAM and HQE certifications

Function : Company

DEMATHIEU ET BARD

Benoit HAEFFLINGER

https://www.demathieu-bard.fr/
General Contractor TCE (in group with EIFFAGE)

Energy

Energy consumption

Primary energy need : 416,80 kWhep/m^2.an

Primary energy need for standard building : 510,40 kWhep/m^2.an

Calculation method : RT 2012

Breakdown for energy consumption : Primary energy by conventional station (kWhep.m2.year): _Heating: 100.7 _Refroidissement: 75.7 _ECS: 1.3 _lighting: 203.1 _Auxiliary ventilation: 36

Real final energy consumption

Real final energy consumption/m2 : 184,30 kWhef/m^2.an

Envelope performance

More information :
The project is submitted to RT2012, the bioclimatic requirement indicator (Bbio) (and not the Ubat).
Bbio = 234 points, a gain of 5.19%

Indicator : EN 13829 - q50 » (en m3/h.m3)

Air Tightness Value : 1,70

Users' control system opinion :

No feedback on the writing of this sheet

More information

At the date of writing this sheet, only the monthly electricity and fluid reports have been published by the maintainer.

Renewables & systems

Systems

Heating system :
- Low temperature gas boiler
- Heat pump
- Electric heater

Hot water system :
- Individual electric boiler

Cooling system :
- Reversible heat pump
- Roof-top

Ventilation system :
- Single flow
- Double flow heat exchanger

Renewable systems :
- Solar photovoltaic
- Heat pump

Environment

Urban environment

Land plot area : 300 000,00 m^2

Built-up area : 55 000,00 %

Green space : 130 000,00

From an environmental point of view, as the project is subject to an impact study, the compensatory and integrated measures in the project have been defined as input to the design. Thus, the plot has in its periphery a variety of preserved or created ecosystems (wetlands, restored orchards, embankments in the grasslands, alternative treatments of rainwater via planted valleys) representing a real green network, limiting the phenomenon of rupture that the structure could have been created on its immediate environment. Moreover, the double environmental certification of the project (HQE Improvements for the whole site, BREEAM NC for the shopping center - hypermarket and shopping mall), the integration of the project into its immediate environment was sought from the start of the design: _Green spaces for pleasure and games (accrobranche) in coherence of the peripheral ecosystems _Valorisation of the modes of soft movements (connection of bicycle lanes with the existing tracks, places for pedestrians on the center), alternative modes (electric vehicles, carpooling) or public transport for the establishment of a shuttle bus and a bus stop near the entrance) ._ Integration of service premises in the shopping center (food, catering, clothing). The establishment of a nursery for employees is under study.

Products

Product

Photovoltaic panels - PEPV POLYCRISTALLIN 250

EURENER

Julien.SEVRAIN@demathieu-bard.fr

http://eurenergroup.com/fr/

Product category : Second œuvre / Equipements électriques (courants forts/faibles)

Implementation of 4300m2 of photovoltaic panels.

This product is one of the key elements of the eco-design of the project (integration of renewable energies and overall energy performance of the project - self-consumption).
Visitors to the center and employees are informed of the presence of the system as a first step (June 2018) and then associated electrical production in a second time (August 2018) via the project website.

Costs

Construction and exploitation costs

Renewable energy systems cost : 1 000 000,00 €

Total cost of the building : 100 000 000 €

Health and comfort

Water management

Consumption of harvested rainwater : 8 575,00 m^3

Indoor Air quality

The sanitary quality of the air is one of the stakes on the project. Thus, the creation of healthy spaces is allowed via highly efficient double-flow type ventilation systems and the implementation of interior claddings limiting the health impacts of spaces (minimum health class A). Measurements of indoor air quality were implemented at the end of the design.

Comfort

Health & comfort :

The project entities optimize the natural light supply (targeted FLJ thresholds) while guaranteeing summer comfort (protection of favorably oriented facades, carpentry characteristics - light transmittance / solar factor). The design of lighting systems aimed for a fair balance between energy performance (power per m2), user comfort (light source performance indicators) and lessee expectations (merchandise development). In order to limit the impact of the project on the preserved and / or created ecosystems, the design incorporated an approach of limitation of the light pollution of the structures (management of the external lighting, characteristics of the light sources, charter for the implementation of the signs including the bright ones).

Measured thermal comfort : A none-published STD was established during the conception to validate the bioclimatic choises .

Acoustic comfort :

The acoustic quality of the project was monitored and controlled upon receipt by an acoustic BET

Carbon

Life Cycle Analysis

Eco-design material :

The project includes an exterior and interior wood siding.

Contest

Reasons for participating in the competition(s)

-Renewable energies (4,300m2 of photovoltaic panels);

-The valorisation of biodiversity (22,000m2 of green roof, alternative management of storm water -noues, retention basin-, ecological monitoring)

-A societal and local dimension (vegetable gardens, hives, orchard)

-The economy of the water resource (rainwater recovery)

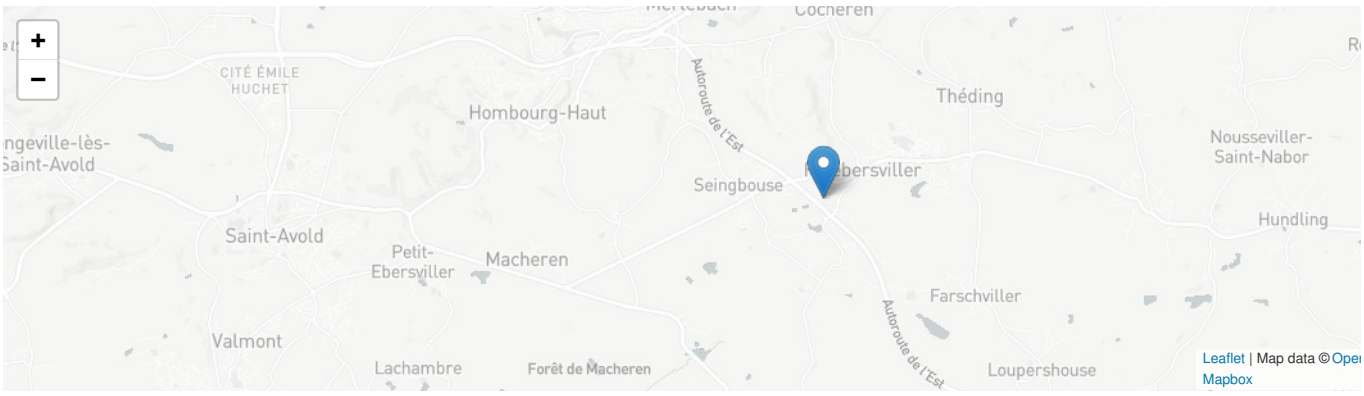
-Promotion of alternative modes of travel (carpooling, electric vehicles)

Building candidate in the category

Energie & Climats Tempérés

Prix du public

Prix des Etudiants



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