CFA BTP in Blois

Last modified by the author on 25/09/2018 - 11:49

Building Type : School, college, university
Construction Year : 2016
Delivery year : 2016
Address 1 - street : 34 Rue Bernard Darada 41000 BLOIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 9 570 m^2
Construction/refurbishment cost : 14 000 000 €
Number of Pupil : 1 100 Pupil
Cost/m2 : 1462.9 €/m^2

General information

Wood is the ecological anchor of the project. It represents 100% of the superstructure and constitutes at the same time the supporting structure, the protective envelope, the management of the natural light and the interior architecture.

- Bioclimatic design> patios, orientation, protection against prevailing winds, large openings.
- Durable facade cladding, low maintenance> wood, zinc, mineral fiber, prefabricated concrete.
- Natural ventilation thanks to the patios.
- Semi-intensive green roof (15cm thick substrate).
- Infiltration of rainwater to the plot, zero discharge to public networks.
- Area of evolution invasive sport. Involved vegetated parkings.
- EP recovery for maintenance and cleaning.
- Management of natural light.
- Passive acoustic treatment (noisy activities away from quiet places)
- EnR> wood boiler, solar thermal, wind, photovoltaic.
- Passive building. Primary energy consumption below 15kWhep / m2.an
- Low Carbon Building. 173 kg CO2 / m2 of emission for the construction of the envelope and 1,25 kgepCO2 / m2.year.

Sustainable development approach of the project owner

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The building of technical education is major volumes provided with a cladding consisting of projecting vertical chevrons producing a game, evolving with the light of day by offering movement and rhythm to the facades while providing sun protection.

The "all visible wood" also brings an educational and ecological dimension for learners. He reveals himself and exposes himself demonstratively.

The wood allows the use of the advantageous dry chain in the management of the deadlines and the quality of execution. It also allows optimum implementation of thermal insulation, without thermal bridge, with a high performance sealing.

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Architectural description

The MOA wanted an innovative building, communicating, largely open on its territory. 30000m2 of land are arranged between the landscape, the organization of flows and the technical operation of the premises.

From the street, spaces of communication and those of life develop along the square thanks to dedicated volumes proposing an architectural sequence offering aqualitative reception. The building offers a strong relationship between the different entities through a transverse and concentric organization allowing to connect the whole.

The functional spaces are located around 2 patios dedicated to the expression of the know-how of the learners. They bring natural light and sunken landscape, at the heart of the built volume lantern. In fact, architecture offers the right balance between the technical expression of functionality, landscape and environmental response.

See more details about this project

http://btpcfa-centre.fr/index.php/accueil-loir-et-cher

Stakeholders

Contractor

Name : BTP CFA CENTRE
http://www.btpcfa-centre.fr/accueil-loir-et-cher

Construction Manager

Name : CRR
Contact : JEAN-PIERRE RAMBOURDIN jp.rambourdin@crr-architecture.com
http://crr-architecture.com

Contracting method

Separate batches

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need : 52,00 kWhep/m^2.an
Primary energy need for standard building :55,00 kWhep/m^2.an
Calculation method : RT 2012
Breakdown for energy consumption : primary energy: heating: 10.6 ECS: 1,3 Lighting: 20.6 Ventilation: 20

Real final energy consumption

Final Energy : 26,80 kWhef/m^2.an

Envelope performance

More information :
wood frame

Renewables & systems

Systems

Heating system :
- Water radiator
- Radiant ceiling
- Wood boiler

Hot water system :
- Individual electric boiler
- Solar Thermal

Cooling system :
- No cooling system

Ventilation system :
- Double flow heat exchanger

Renewable systems :
- Solar Thermal
- Wood boiler

EnR > wood boiler, solar thermal, wind, photovoltaic.

Environment

Urban environment

Land plot area : 30 000,00 m^2
The MOA wanted an innovative building, communicating, largely open on its territory.30 000m ² of land are arranged between the landscape, the organization of the flows and the technical exploitation of the premises.

From the street, communication spaces and living spaces develop along the forecourt with dedicated volumes offering an architectural sequence offering a qualitative welcome. The building offers a strong relationship between the different entities through a transverse and concentric organization allowing to connect the whole.

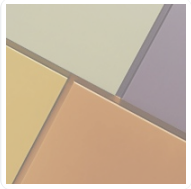
Products

Product

PIGMENTO®

VMZINC

http://www.vmzinc.fr/nous-contacter.html



http://www.vmzinc.fr/
Product category : Table 'c21_china.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '12'
PIGMENTO® is a range of colored surface finishes that preserve the natural pattern of pre-weathered zinc.
It is made from the QUARTZ-ZINC substrate to which mineral pigments are added.

SOPRANATURE®

SOPREMA

https://www.soprema.fr/fr/contact

https://www.soprema.fr/fr/
Product category : Table 'c21_china.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '29'
SOPRANATURE® is a planting process for roof terraces, which uses a plant complex made up of culture materials and plants, combined with a specific antiracin waterproofing complex, in accordance with the current professional rules.

Costs

Construction and exploitation costs

Total cost of the building :15 000 000 €

Carbon

GHG emissions

GHG in use : 1,25 $KgCO_2/m^2$/an
Methodology used :
building alone

GHG before use : 173,00 $KgCO_2$ /m^2
Building lifetime : 50,00 année(s)
, ie xx in use years : 138.4
GHG Cradle to Grave : 905,00 $KgCO_2$ /m^2
cf attachment

https://www.construction21.org/france/data/sources/users/9242/synthese-bilan-carbone-cfa-blois-v2.docx

Life Cycle Analysis

https://www.construction21.org/france/data/sources/users/9242/bilan-carbone-grisen-v200.xlsx
https://www.construction21.org/france/data/sources/users/9242/synthese-bilan-carbone-cfa-blois-v2.docx
Eco-design material :
Buildings realized while wood frame

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Contest

Reasons for participating in the competition(s)

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