Bois Debout

by Stéphane Cochet / 2016-05-23 10:39:24 / Francia / 16664 / FR

Primary energy need :

49 kWhep/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building

Building

< 50	A	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 Type : Collective housing < 50m
Construction Year : 2015
Delivery year : 2016
Address 1 - street : 34 rue Girard 93100 MONTREUIL, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 323 m²
Construction/refurbishment cost : 1 990 000 €
Number of Dwelling : 17 Dwelling
Cost/m2 : 1504.16 €/m²

Certifications :

General information

17 social housing + business premises in Montreuil sous bois (93). 940m² of living space. Wood-frame building on 6 levels full dry system (screeds and elevator shaft in CLT). Certification passiv haus level and Paris Climate Plan level without ENR. Owner: Grand Paris Habitat for Osica SNI. Architects: Stéphane Cochet + Bruno Garnier.

Sustainable development approach of the project owner

First goal: building a certified passiv haus building in addition to the H&E Cerqual certification. Proposal project management of all wood framing on 6 levels. Desire to control the loads of energy consumption and maintenance maintenance (P1 costs / P2 / P3)

Architectural description

Building installation on two former plots in dense urban center. architectural composition within the old parcel tracing around a two-part composition. typical architectural Writing suburb of architecture. aligned front, penthouse, pass box, cage lit staircase naturally. through housing off T1, North / South orientation. Work on summer comfort, the fight against heat islands (cool roof roof). No ENR, no radiator. reduced technical equipment (boiler of 24kW for all dwellings, a comfort ventilation to recovery centralized heat, static heat recovery units on waste water in each unit). Work at the plot level on biodiversity, shared garden and edible garden.

Building users opinion

energy and sociological monitoring of the building and its uses for 3 years as part of the agreement with ADEME IDF

If you had to do it again?

We show through this project it is possible to build an all wooden building on 6 levels certified passive to an equivalent price than building a concrete level RT2012 construction. Cost control P1 / P2 / P3 with very little equipment: a 24kW condensing boiler for the EC and the SAT 17 housing and a comfort ventilation to recovery centralized heat.

See more details about this project

Stakeholders

Stakeholders

Function : Designer

A003architectes

contact@A003architectes.com

http://www.a003architectes.com
agent architect

Function : Manufacturer

SOCOPA construction ossature bois

jean-luc.marchal@constructions-socopa.fr

http://www.constructions-socopa.fr
cover closed

Function : Designer

BGA architecture

bruno.garnier_archi@orange.fr

associate architect

Function : Thermal consultancy agency

AMOES

contact@amoes.com

http://www.amoes.com
Thermal Fluid + + QEB

Function : Structures calculist

S2T

stephane.pierra@s2t.fr

http://www.s2t.fr/

Function : Environmental consultancy

Cabinet Joel LOT

stephane.pierra@s2t.fr

http://www.s2t.fr/
Economist

Function : Contractor

Grand Paris habitat

http://www.grandparishabitat-groupesni.fr/

Contracting method

Macro packages

Type of market

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Energy

Energy consumption

Primary energy need : 49,00 kWhep/m^2.an

Primary energy need for standard building : 75,00 kWhep/m^2.an

Calculation method : RT 2012

Breakdown for energy consumption : 12% Heating / Hot Water 23% / 6% Lighting / 17% following RT Auxiliary

Real final energy consumption

Final Energy : 63,00 kWhef/m^2.an

Envelope performance

Envelope U-Value : 0,28 $W.m^{-2}.K^{-1}$

More information :
Bbio gain of 22 70%

Building Compactness Coefficient : 0,57

Indicator : n50

Air Tightness Value : 0,30

Users' control system opinion : No home automation installed apart in the building energy monitoring in place (instrumentation) as part of the ADEME convention for the measurement campaign and monitoring of 3 years on building on 5 RT positions.

More information

103kWh.ep / m^2.yr following PHPP

Renewables & systems

Systems

Heating system :

- Condensing gas boiler

Hot water system :

- Condensing gas boiler

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

Other information on HVAC :
centralized 24kW boiler for EC production and Hot water of 17 apartments and a comfort ventilation to centralized heat recovery. One loop of hot water. individualized cylinder on hydraulic exchanger.

Solutions enhancing nature free gains :
récupération de chaleur statique sur eau usée, prises commandées, arrivée ECS sur machine à laver

Environment

Urban environment

Land plot area : 350,00 m^2

Built-up area : 74,00 %

Green space : 60,00

urban city center, inner suburbs of Paris, site forced narrow street joint, demolition of two existing buildings including town house R + 1 and hangar. Built biodiversity vegetated northern facade with climbing (hydrangea) valley planted with fruit shrubs (cassisiers, currants, strawberries), fruit trees (pear), vegetable patch. Retrieving EP for watering and maintenance. Fight against the islets of heat roofing membrane with high solar reflectance of power (albedo 0.8) + evapotranspiration of vegetated northern facade.

Products

Product

Alkorbright

Renolit

RenolitFrance-Toiture@renolit.com

http://www.renolit.com/waterproofing-roofing/fr/contact/

Product category : Table 'c21_italy.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 = '7'

_ cool roofing roof waterproofing membrane

under technical opinion

Costs

Construction and exploitation costs

Cost of studies : 242 325 €

Total cost of the building : 3 160 276 €

Subsidies : 250 804 €

Energy bill

Forecasted energy bill/year : 6 800,00 €

Real energy cost/m2 : 5.14

Real energy cost/Dwelling : 400

Health and comfort

Indoor Air quality

SW3

Comfort

Health & comfort : 20% glass area on SHAB m², through housing / A + VOC materials / triple glazing no cold wall / no cold air coming into carpentry (VMC double flow) / manual occultations openwork for summer comfort

Calculated thermal comfort : 20°C winter comfort, overheat >25°C < 3,4°C according to PHPP

Acoustic comfort : Cerqual Qualitel H&E label

Carbon

GHG emissions

GHG in use : 895,00 $KgCO_2/m^2$/an

Methodology used :

like carbon balance sheets from the FDES materials

GHG before use : 12,00 $KgCO_2$ /m^2

Building lifetime : 50,00 année(s)

, ie xx in use years : 0.01

GHG Cradle to Grave : 906,00 $KgCO_2$ /m^2

315kg eqCO2/yr

Life Cycle Analysis

Material impact on GHG emissions :

15769

Eco-design material : 350m3 of wood used, building organically sourced label

Contest

Reasons for participating in the competition(s)

Wood-frame building on 6 levels full dry system (screeds and elevator shaft in CLT), Passiv Haus certification, bâtiment label bio-sourcé niveau 3, lauréat appel à projet ADEME IDF Bepos/Bepas 2013, lauréat du OffDD2015. Travail sur biodiversité batie et résilience urbaine. Construction "Low Tech" sans ENR. Approche en coût global P1/P2/P3 maîtrise des consommations énergétiques et des charges en entretien maintenance sur DVT de 30ans.

level 3 bio-based labelled building, chosen by ADEME for a call for proposals (BEPOS/BEPAS 2013 project), OffDD2015 award winner . Work on biodiversity and urban resilience. Low Tech construction without renewables. Global cost approach P1 / P2 / P3, controlled energy consumption and maintenance costs over 30 years.

Building candidate in the category

Green Solutions AWARDS
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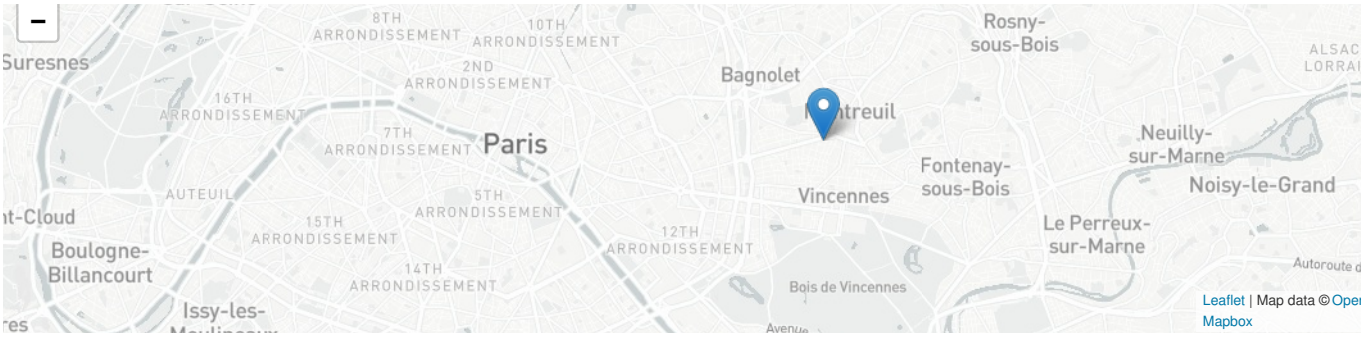
Energie & Climats Tempérés

Coup de Cœur des Internautes



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