


Passive housing of the "Justice" Islet

by Benjamin Boyaval / © 2019-05-27 15:49:24 / France / 5733 / FR

New Construction



Primary energy need :

119 kWh_{ep}/m².an

(Calculation method :)

ENERGY CONSUMPTION

Consumption Range (kWh _{ep} /m ² .an)	Class
< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

Economical building (Classes A-C) | *Building* (Class A) | *Energy-intensive building* (Classes D-G)

Building Type : Collective housing < 50m
Construction Year : 2017
Delivery year : 2018
Address 1 - street : 41 rue de la justice 59000 LILLE, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 2 031 m²
Construction/refurbishment cost : 2 800 000 €
Number of Dwelling : 30 Dwelling
Cost/m2 : 1378.63 €/m²

Certifications :



Proposed by :



General information

The operation is part of a **project redevelopment of the islet Justice in the heart of Wazemmes** . The 30 apartments labeled PASSIVHAUS constitute a new entry sequence into the PSA Citroën operation. The distribution is organized around two staircases and two individual accesses on the ground floor, with private gardens. In R + 3 rue de la Justice and R + 4 along the future road leading to the heart of islet, the collective adapts to neighboring morphologies.

The building has a subdued gray-beige brick cladding on public facades. As for the parking on the ground floor, transparencies are created using a " *mashrabiya*" (*architectural element which is characteristic of Arabic residences*) . Bricks laid in stretches, light overhang, punctuate the facades at the level of the lighters and aluminum windows. The rigorous berry pattern is contradicted by random balconies with generous overhangs.

Isolated from the outside, the building is equipped with a **collective boiler with recovery of greywater and air heat pump** . All technical equipments are

included in the heated volume. The orientation was particularly worked. **The accommodations are doubly oriented from the T3** (2 bedroom flat) .

The **outdoor** spaces **are very green** , so as to give a real place to Nature. This becomes a structuring element of the project. The plant palette is similar to that of traditional private gardens.

Sustainable development approach of the project owner

The operation is part of a project redevelopment of the Justice islet - Wazemmes district in Lille. Vilogia, a sustainable development player, wanted to position this operation as the spearhead of the energy transition in the north of France.

Architectural description

This operation intends to play its role as a structuring whole of the site, by means of simple and essential architectural devices. The building contributes to the urban renewal of the site by proposing a new sequence of entry into the PSA Citroën operation. Standing at the corner of the Rue de la Justice and the new service road, the building has two volumes in R + 3 and R + 4 that interact with the neighbors. The orientation was particularly worked. The accommodations are doubly oriented from the T3, all the lounges are South-West or South-East, the rooms give in interior of islet, in order to benefit from a maximum of tranquility. The morphology is voluntarily compact, in order to reach the Passivhaus label. From T2 to T5, the accommodations all benefit from quality outdoor spaces: gardens, balconies, loggias. The parking, located on the ground floor, is lit and ventilated naturally thanks to a brick game forming *mashrabiya* .

Building users opinion

We have very positive feedback from the occupants and Vilogia about the operation.

If you had to do it again?

Despite close collaboration between the HQE design office and the architect, the false ceilings of the entrances to the dwellings are quite low. HVAC equipment requiring a large plenum height, if it were to redo we would increase the slab to slab heights.

See more details about this project

<https://www.bplusbarchitectures.com/projets/justice-30-logements-passifs>

Photo credit

BplusB Architectures

Stakeholders

Contractor

Name : Vilogia

Contact : Grégory Dieu - 03 59 35 51 21

<https://www.vilogia.fr/>

Construction Manager

Name : BPLUSB ARCHITECTURES

Contact : Benjamin Boyaval - 03 59 08 69 45 - contact@bplusbarchitectures.com

<https://www.bplusbarchitectures.com/>

Stakeholders

Function : Other consultancy agency

Verdi Bâtiment Nord de France

M. Carpentier - 60 80 18 48 49 - ccarpentier@verdi-ingenierie.fr

<http://www.verdi-ingenierie.fr/>

BET TCE

Function : Thermal consultancy agency

Energélio

M. Castel - 06 38 67 94 65 - clement.castel@energelio.fr

<http://www.energelio.fr/>

Passive design office

Function : Assistance to the Contracting Authority

Aqua Terra Sana

M. Seveque - 06 46 22 55 93 - jls60@orange.fr

MASTER

Function : Construction company

Eiffage Construction

Geoffrey Sawicki - 03 20 41 84 18 - geoffrey.sawicki@eiffage.fr

<https://www.eiffageconstruction.com/>

Envelope structure

Contracting method

Separate batches

Type of market

Table 'c21_maroc.rex_market_type' doesn't exist

Energy

Energy consumption

Primary energy need : 119,00 kWh/m².an

Primary energy need for standard building : 170,00 kWh/m².an

Calculation method :

Breakdown for energy consumption : HEATING: 12 KWHEF / (M².AN) VENTILATION: 5 KWHEF / (M².AN) AUXILIARY: 0.2 KWHEF / (M².AN) ECS: 8.6 KWHEF / (M².AN) DOMESTIC ELECTRICITY: 19 KWHEF / (M².AN)

Real final energy consumption

Final Energy : 46,00 kWh/m².an

Envelope performance

Envelope U-Value : 0,28 W.m⁻².K⁻¹

More information :

BUILDING ENTIRELY IN CONCRETE AND EXTERIOR INSULATION

U LOW DALLE = 0.123 W / M².K

UMUR = 0.132 W / M².K

U ROOF = 0.090 W / M².K

UW <0.80 W / M².K, SOLAR FACTOR OF GLAZING = 0.60

Building Compactness Coefficient : 0,59

Indicator : EN 13829 - n50 » (en 1/h-1)

Air Tightness Value : 0,52

More information

NOT YET BACK

Renewables & systems

Systems

Heating system :

- Others

Hot water system :

- Heat pump

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Heat pump

Other information on HVAC :

HEAT RECOVERY ON GRAY WATER SHOWERS

Solutions enhancing nature free gains :

Enveloppe et menuiseries performantes

Smart Building

BMS :

not

Environment

Urban environment

Land plot area : 1 792,00 m²

Built-up area : 44,00 %

Green space : 410,00

The operation is part of a redevelopment project of the Justice islet - Wazemmes district.

The ground of the project is located rue de la Justice in Lille. The district of Lille Wazemmes consists mainly of grouped individual housing, band houses and collective housing. Industrial rights of way tend to disappear little by little in favor of housing operation.

Products

Product

PTC Electric Batteries

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

1 battery per housing for heating

The occupants are very satisfied with the thermal comfort

Internorm PVC / Alu KF410 glazing 3N2 solarXplus

Product category : Second œuvre / Menuiseries extérieures

U-VALUE FENÊTRES : 0.76 W/(m².K)

U-VALUE VITRAGES : 0.55 W/(m².K)

Good use

Aldes VEX550 C4

Aldes

<https://pro.aldes.fr>

Product category : Génie climatique, électricité / Ventilation, rafraîchissement

Good use

Costs

Energy bill

Forecasted energy bill/year : 13 000,00 €

Real energy cost/m2 : 6.4

Real energy cost/Dwelling : 433.33

Carbon

GHG emissions

GHG in use : 24,30 KgCO₂/m²/an

Methodology used :

PHPP CALCULATION

Contest

Reasons for participating in the competition(s)

PASSIVE housing, labeled PASSIVHAUS. Implementation of double flow, triple glazed frame, heat pump on gray water, external insulation, collective boiler for DHW.

Building candidate in the category



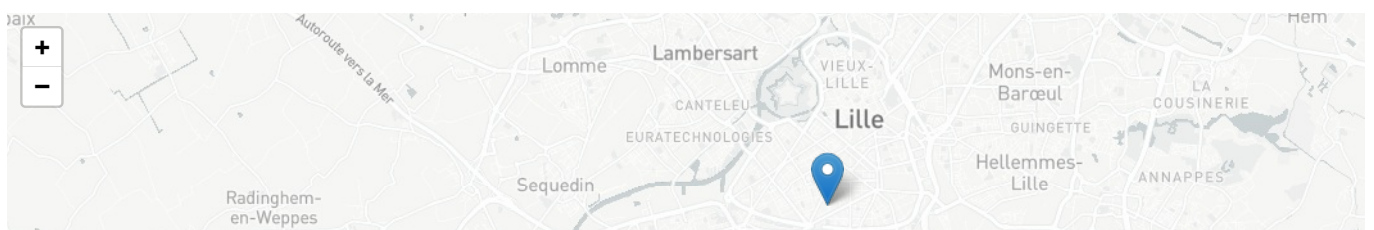
Energie & Climats Tempérés

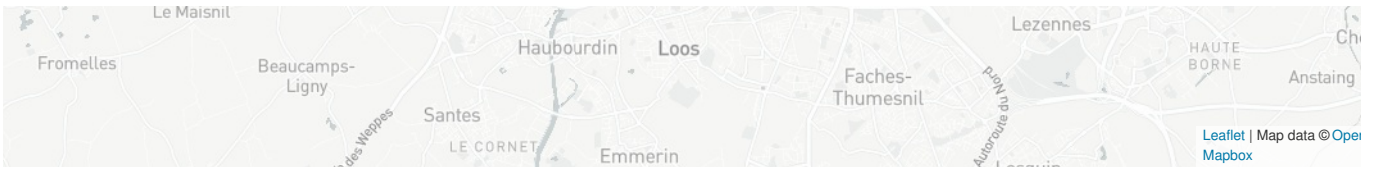


Prix du public



Prix des Etudiants





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