


## Montreuil Beaumarchais

by Stéphanie Landour / 2017-06-12 15:41:59 / France / 10924 / FR

**New Construction**



Primary energy need :

# 38.1 kWhep/m<sup>2</sup>.an

(Calculation method : RT 2012 )

**ENERGY CONSUMPTION**

*Economical building*

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

*Energy-intensive building*

*Building*

**A**

**Building Type** : Collective housing < 50m  
**Construction Year** : 2017  
**Delivery year** : 2017  
**Address 1 - street** : 73 RUE DOUY DELCUPE 93100 MONTREUIL, France  
**Climate zone** : [Cfc] Marine Cool Winter & summer- Mild with no dry season.

**Net Floor Area** : 4 991 m<sup>2</sup> SHON RT  
**Construction/refurbishment cost** : 7 000 000 €  
**Cost/m2** : 1402.52 €/m<sup>2</sup>

**Certifications :**



**General information**

The project occupies a plot of 1680m<sup>2</sup> in a changing urban fabric: the newly built collective dwellings are located on the plots occupied until now by buildings of activities mixed with a fabric of residential dwellings or Small multi-dwelling buildings.

The operation consists of a building which represents a projected floor area of 3 997m<sup>2</sup> or about 68 dwellings spread over 3 cages R + 4 + penthouse, sold in VEFA to OGIF. The building is built on an underground car park of 23 places on a single basement level.

The ground footprint of the buildings leaves 3 spaces planted on the north façade free of which the 3 halls will be accessible, as well as 2 landscaped and planted areas constituting two inner courtyards.

The aim of this operation is to minimize heating requirements, the project management team has turned to a mixed wooden concrete design: a wooden facade by Techniwood and the floors, cores and car parks. concrete.

## Sustainable development approach of the project owner

As part of its CSR strategy, BNP Paribas Real Estate has made energy transition and the mitigation of climate disruption one of its priorities. As a European real estate leader, we believe that it is our responsibility to provide the real estate industry with our vision of the sustainable city of tomorrow. The primary objective of the project was to achieve an energy efficient operation reaching the passive level with 15kwh / m<sup>2</sup>.an heating only. For this control of the heating needs, we turned to a very powerful envelope thanks to the wood in the block panels. The second objective was to obtain Minergie P and H & E certifications. With the arrival in 2016 of the BBCA pilot label, we found it evident to present our project.

## Architectural description

The operation comprises 68 housing units divided into three buildings occupied by social housing units. It is located at the corner of the rue Douy Delcupe and the Rue de la Révolution. The buildings are lined up on both streets with setbacks forming three gardens. On streets, buildings have a template that ranges from three to five floors on the ground floor. Rue Douy Delcupe: On the side of the adjoining two-storey building on the ground floor and attic, the height of the building (R + 3) is substantially the same as that of the existing building. A porch on the ground floor provides a visual breakthrough on the ovens on the back parcel (which may be effective when the neighboring fence wall is demolished). Three facades at R + 5 form the back plan of the gardens, while the buildings on R + 3 are aligned on streets. A R + 4 stage forms the link between the high and low volumes, the steel roof of which is slightly sloping. Street of the Revolution: A garden made up of existing trees before renovation accompanies the corner of the building which rises from 3 to 5 levels with a ground floor in alignment on street. The building is adjacent to a 6 storey high building on the ground floor. To the south of the ground the building opens onto two gardens. Two gables adjacent to the separative boundary receive a differentiated treatment. One of the 5 levels (R + 4) is a vegetalized wall covered with a roof of solar panels, the other is in front of the ovens and is treated as a stage background to highlight and dramatize the brick kilns. The wall is coated with mirror-polished aluminum and reflects the image of the ovens. The accesses : The three halls are located on Douy Delcupe Street. They run along the gardens. The halls are entirely glazed and crossed so that, from the street, one can see the interior gardens. The front and rear gardens are thus in visual correspondence. Access to the parking lot is located on Douy Delcupe Street, east of the plot. Fences: On streets, a metal fence will close the gardens. On the back an adjoining wall is existing. Materials and facades: The building is certified Minergie P and complies with the RT 2012 regulations. The impermeability to air and the thermal mantle of the building envelope have largely determined their composition. They are walls of 45 cm covered with three types of materials: -The smooth white finish on the buildings aligned on streets and in the southern gardens. -The plank of white brick with gray brick pattern on the ground floor. -Aluminum panels more or less reflective and with three gray values on the tallest buildings. Aluminum was chosen to hang grazing light from the east and west on the north facade; And to the south to form the mirror in which the furnaces are reflected. -The exterior joinery is made of aluminum and wood. The guardrails are made of glass. The accommodations have an outdoor area: garden, terrace, balcony, loggia depending on their location. -The terraces are largely vegetated by planters containing 0.80 m of topsoil. The roofs of the 4th floor are made of steel and vegetalized. The roofs of the 5th floor are occupied by solar panels and all technical equipment (elevators, double flow VMC, ventilations ...). Free spaces and plantations: The open spaces are planted, except the path that leads to the hall. Except parking lot, they are in the ground. On the slab of the overflowing parking lot of the building, the garden will have a thickness of 0,80m of land. The gardens on the ground floor will be planted with plants selected according to their location, use and orientation. Two existing trees are preserved and one tree will be planted in each southern garden. Shrubs in massif will be planted in the gardens rue Douy Delcupe.

## Building users opinion

OGIF buyer of all the dwellings took possession of the premises that on April 24, 2017, to date no resident dwells in the residence.

## Stakeholders

### Stakeholders

Function : Contractor

BNP PARIBAS IMMOBILIER PROMOTION RESIDENTIEL

Stéphanie LANDOUAR, 0155652779, stephanie.landouar@bnpparibas.com

<https://logement.bnpparibas.fr/fr>

Function : Thermal consultancy agency

POUGET CONSULTANTS

David LEBANNIER, 0142595364, david.lebannier@pouget-consultants.fr

<http://www.pouget-consultants.eu/>

Function : Designer

CENCI ET JACQUOT

01 48 92 14 64 cenci.jacquot@wanadoo.fr

<http://www.cencietjacquot.fr/contact/>

Function : Manufacturer

TECHNIWOOD

Tel + 33 (0)1 73 03 04 05

## Contracting method

Off-plan

## Energy

### Energy consumption

Primary energy need : 38,10 kWhep/m<sup>2</sup>.an

Primary energy need for standard building : 71,30 kWhep/m<sup>2</sup>.an

Calculation method : RT 2012

Breakdown for energy consumption : Heating: 7 kWhep / m<sup>2</sup> DHW : 10 kWhep / m<sup>2</sup> Lighting: 4 kWhep / m<sup>2</sup> Ventil to: 12 kWhep / m<sup>2</sup>

### Envelope performance

Indicator : n50

Air Tightness Value : 0,60

## 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 :

- Solar Thermal

## Environment

### Urban environment

We are in a dense urban neighborhood with low rise buildings.

## Products

### Product

Panobloc

Techniwood

33 (0)1 73 03 04 05

<http://www.techniwood.fr/fr/solutions-techniques/panobloc/presentation>

Product category : Gros œuvre / Structure, maçonnerie, façade

Panobloc® est un treillis structurel en bois composé d'un empilage de plis croisés à 90%, décalés et collés entre eux. Chaque pli est composé d'une alternance

de :

- lames de bois aboutées et rabotées de section rectangulaire, parallèles entre elles, et disposées verticalement puis horizontalement un pli sur deux. Les plis croisés sont collés entre eux au niveau des lames de bois avec un décalage du positionnement des lames de bois d'un pli sur l'autre. Ce décalage permet de réduire voir d'annihiler les ponts thermiques.

- bandes isolantes de remplissage (isolation thermique, acoustique et matériaux à inertie) occupant l'espace libre entre les lames de bois

This system obliged to increase the number of hours of study with the technical companies of the facade but allows to have practically a finished product as soon as it arrives at the site thanks to the possible integration in the factory of the exterior joinery and facade cladding .



## Costs

## Health and comfort

### Water management

The best solution to limit them is to set up systems that allow everyone to realize savings without degrading the comfort of use. These solutions require no effort on the part of users and can reduce drinking water consumption by 20%.

For this purpose, water-saving systems will be installed in the dwellings, such as:

- Mixing valves with flow limiter to equip all the points of drainage of the housings.
- Avoirs on sinks and washbasins.
- Foamers on the shower.
- Distinctive counting for each dwelling, maintenance of general services and watering.
- Flashes of double capacity: 3 and 6L.
- The fitting will have a WATER or WATER rating with the following indices E (flow) and U (Wear) as the following values to ensure its durability:
- Sink, washbasin, wash hand, bidet ... E0U3
- Double ... E1U3
- Bathroom: E3U3.

### Indoor Air quality

We worked on two parameters: - ventilation: The building has a very low air permeability due to the performance of the envelope and the building systems, therefore special attention must be paid to the ventilation system of the dwellings. For these reasons, we chose the double flow system with which the fresh air inlet is of better quality because filtered before its impulse in the housing. An important part of the comfort in the housing is ventilation, the double flow system guarantees a fresh air sanitizes external pollution (dust mites, pollens, tobacco ashes, bacteria. - the choice of materials with a VOC performance label of A: The choice of construction products will take into account the environmental criterion. Preferably, the chosen materials must present at least one eco-label, such as European eco-labels.

### Comfort

**Health & comfort :** The provisions of the floor plan limit the masks and favor a natural lighting of quality in the rooms to live kitchen and stay. An apartment majority has a double orientation. The glazed surfaces will be controlled at the same time in order to meet the thermal stresses but correctly dimensioned in order to guarantee a maximum illumination of the rooms to be supplied by the dwellings. Sun protection will of course be provided in order to guard against any phenomena of glare and will also help to guarantee the thermal comfort of summer (see above). For the artificial lighting of the common parts, the following principles have been adopted: -Use of fluorescent lamps or low consumption, powered by electronic ballast -Commands adapted to each room -High-efficiency light sources and color rendering index (IRC) greater than 85 All glazing will be low emissivity with argon blades with both a low U-value, high light transmittance and a low solar factor to limit overheating in mid-season and summer. The insulation of the envelope must be very efficient to reduce the heating requirements, the joineries will be triple glazing. The architecture of the building offers outdoor areas to all accommodation: balcony, terrace or loggia. These provide a buffer space for the most exposed south façades, thus reducing overheating. In addition, solar protection is provided by: - exterior roller shutters with aluminum blade or sliding shutters or canvas blind. -bowls exterior views in aluminum plates on some balconies -a wood or metal mesh complementing the balconies

**Calculated thermal comfort :** 26

**Acoustic comfort :** We do not have any lanes close to our site, the acoustic insulation that we respected is  $D_{nTA}$ ,  $tr \geq 32$  dB on the most unfavorable facade.

## Carbon

## GHG emissions

GHG in use : 577,00 KgCO<sub>2</sub>/m<sup>2</sup>/an

Methodology used :

Elodie

GHG before use : 435,00 KgCO<sub>2</sub>/m<sup>2</sup>

Building lifetime : 50,00 année(s)

GHG in use years : 0.75

GHG Cradle to Grave : 1 012,00 KgCO<sub>2</sub>/m<sup>2</sup>

The calculations were carried out using the ELODIE software and used to obtain the BBCA label

## Life Cycle Analysis

Material impact on GHG emissions :

435

Eco-design material : We used a panobloc non-supporting curtain wall made by TECHNIWOOD

## Contest

### Building candidate in the category



Bas Carbone



Coup de Cœur des Internautes

