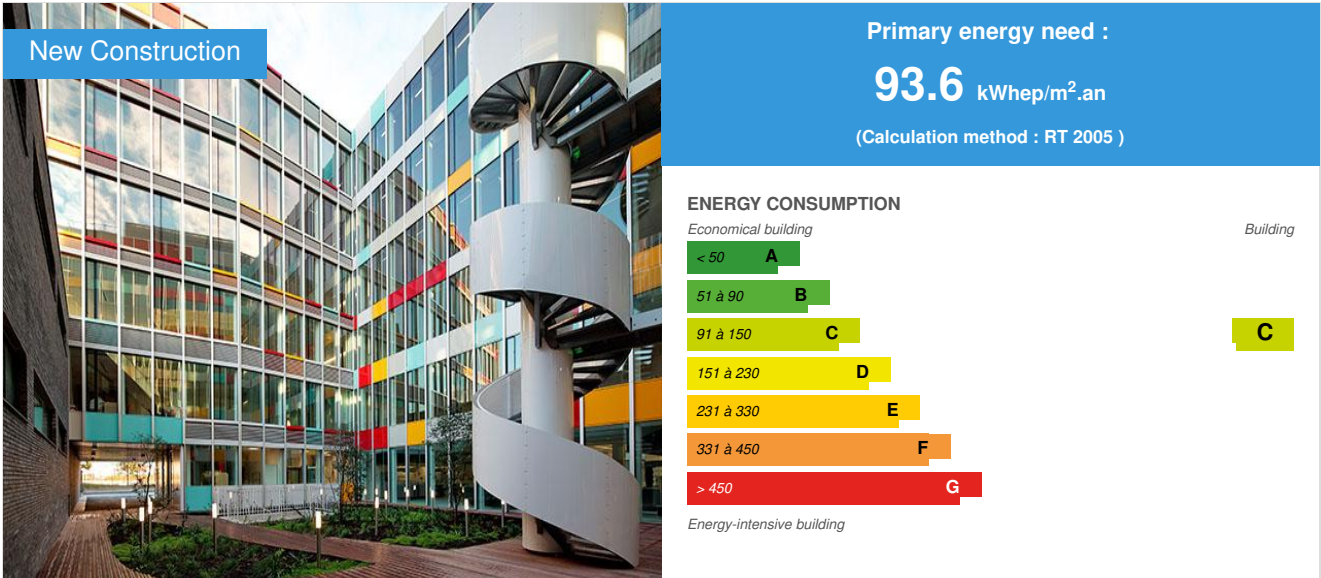


PIXEL

by Communication BNP Paribas Real Estate / 2014-02-28 10:56:33 / France / 14287 / FR



Building Type : Office building < 28m
Construction Year : 2013
Delivery year : 2013
Address 1 - street : 12/14 rue du port 92000 NANTERRE, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 17 600 m² Other
Construction/refurbishment cost : 34 800 000 €
Cost/m2 : 1977.27 €/m²

Certifications :



Proposed by :



General information

The operation is located in Nanterre, ZAC Guillaeraies, close to the Seine in the park district of the island, mainly dedicated to the service sector. This is a HQE certification Phase Implementation with a high level of performance of 9 level targets "Very Powerful" and 5 targets level "Powerful", none of the targets is at the level "Base".

This performance allows the operation to get the "Passeport Bâtiment Durable" (sustainable building passport) with an exceptional level. Each of the four themes (energy, environment, health and comfort) is rated three stars.

The PIXEL operation develops an area of approximately 17,600 m² divided mainly between:

- 15,100 m² of offices on 5 levels, in 16 rental lots from 250 m² to 1,200 m², with a Company Restaurant open onto an outdoor terrace and an open outdoor patio cafeteria,
- 2,500 m² of business incubator, with an operation and independent access to the "office" part, precautionary measures have been taken to a reuse as offices this business park.

The operation also presents:

- 220 car parking spaces on two levels of basement (including 10 seats equipped with electrical charging) and 12 locations motorcycles,
- 18 outdoor parking spaces available in the nursery,
- 42 bicycle parking in the basement 1, accessible via the ramp.

The room is accessible by a secure badge with 10 charging terminals for electric bikes. PIXEL design was done by Face B, the firm created by two young architects, discovered in 2008 by BNP Paribas Real Estate as part of its award "Prix des Espoirs de l'Architecture" which they won.

The first steps of these architects were supervised by Jean Mas from the Atelier 2/3/4.

Sustainable development approach of the project owner

Environmental acquisition in its strategy and its management strategy. The off-plan interest us much, because they help to enrich our heritage buildings to the latest standards of regulation, including thermal, this increase being a major objective. We deploy a demanding environmental strategy, both in new construction, in the image of our headquarters, on the renovations. The last year, we signed the charter to Energy Efficiency tertiary buildings. It is an act of belief and at the same time, it gives a new dynamic to our gait, while placing it in an institutional setting. We have already realized a number of operations in BBC renovation. We seek labeling and certification. And if we fail to obtain, we perform work likely to reduce energy consumption very significant way. Whether to remain relatively humble compared to our actions in one area or the level of knowledge has yet to improve, it is important to engage, set goals and know when our actions bear fruit. "

Architectural description

Designed by the firm Face B, identified by BNP Paribas Real Estate as part of a competition for young architects, PIXEL assembles a monolithic block of two levels (ground floor and R +1), dedicated to the nursery business, and building comb offices (R +2 R +5). This morphology of building reconciles compactness and maximizing sunlight facades offices. Combs create open spaces for the implantation of vegetated patios. In addition, they offer views of the outside from all workspaces.

See more details about this project

Stakeholders

Stakeholders

Function : Contractor

SNC NANTERRE MOULIN NOIR

représentée par BNP PARIBAS IMMOBILIER

http://www.realestate.bnpparibas.fr/bnppre/fr/bnp-paribas-real-estate-francecfo4_8512.html

Function : Investor

SCI GUILLERAIES

représenté par BNP PARIBAS CARDIF

<http://www.bnpparibascardif.com>

Function : Construction Manager

BNP PARIBAS IMMOBILIER Promotion Immobilier d'Entreprise

Function : Designer

Cabinet Face B en collaboration avec Atelier 2/3/4

Camille Mourier & Germain Pluinage (Face B) et Jean Mas (Atelier 2/3/4)

<http://www.a234.fr/architecture/>

Function :

KEPHREN

<http://www.khephren.fr/activite/3>

Function : Structures calculist

ACOUSTIQUE ET CONSEIL

<http://www.acoustique-conseil.com/>

Function : Assistance to the Contracting Authority

ARCOBA

<http://www.arteliagroup.com/fr/system/files/publications/arcoba.pdf>

Function : Thermal consultancy agency

SF2I

Function : Company

LEON GROSSE

<http://www.leongrosse.fr/srt/leongrosse/home>

Function : Company

EIFFAGE THERMIE

<http://www.eiffage-thermie-ouest.fr/>

Contracting method

Off-plan

Energy

Energy consumption

Primary energy need : 93,60 kWh/m².an

Primary energy need for standard building : 202,29 kWh/m².an

Calculation method : RT 2005

Breakdown for energy consumption : Results from the calculation engine RT 2012 kWh/m² / year:

- Heating: 6.5
- Cooling: 1.2
- Lighting: 8.0
- Hot Water Systems: 14.5
- Ventilation and auxiliary: 39.8

Real final energy consumption

Final Energy : 36,30 kWh/m².an

Envelope performance

Envelope U-Value : 0,79 W.m⁻².K⁻¹

More information :

The envelope was conceived with a bioclimatic approach to optimize the heat exchanges depending on the orientation of facades. These are adapted by integrating the problematic solar gain and glare of risks in the office space. The operation presents primarily two types of facades:

Type 1: Facade of the building envelope periphery 0.46m thick, the peripheral facade is composed of a concrete veil isolated by the outside with rock wool (thickness 14 cm) protected by a brick veneer full. This facade is pierced by openings of 2m x 2m. The windows are composed of an aluminum frame and fitted with double glazed low emissivity enjoying a sun protection Interior venetian blinds on all orientations. $U_{moyen} = 0.235 \text{ W / m}^2 \cdot \text{K}^\circ \text{C}$

Type 2: Facade envelope patios. This facade curtain wall double glazing is composed of large glass panels vertical rhythms by a frame of 1.35m. It benefited from a solar protection blinds Interior Venetian on all orientations, and in complement, exterior blinds on the south-west orientation. $U_{moyen} = 1.390 \text{ W / m}^2 \cdot \text{C}^\circ$

Building Compactness Coefficient : 0,46

Air Tightness Value : 1,70

More information

The operation, conceived in 2010 is based on the RT 2005. It aims at obtaining BBC Effinergie label, i.e. -50% of normal consumption. The Project Owner has also wished to evaluate this building in relation to the obligations of the RT 2012.

The energy performance of the transaction valued according to these two modes of calculation leads to the following results:

Calculation according to the RT2005

Primary energy consumption (Cep) 93.6 KWHeq / m²/ year
Regulatory, consumption Cref KWHeq 202.29 / m² / year
Performance achieved 53.6%

Calculation according to the RT2012
Primary energy consumption (Cep) 102.8 KWHeq / m² / year
Regulatory, consumption Cref 107.2 KWHeq / m² / year
Performance obtained -4.1%

The Cep is a requirement result in terms of primary energy consumption of the 5 main uses: heating, cooling, lighting, hot water and electrical needs permanent auxiliaries. Obtaining the label BBC is acquired as the Cep < Cref – 50%. (RT 2005).

Renewables & systems

Systems

Heating system :

- Heat pump
- Others

Hot water system :

- Individual electric boiler
- Solar Thermal

Cooling system :

- Reversible heat pump
- Others

Renewable systems :

- Solar Thermal

Smart Building

BMS :

BMS monitors and controls the various technical installations (heating, cooling, ventilation, lighting, water).

Environment

Urban environment

Land plot area : 7 008,00 m²

Green space : 1 682,00

Products

Product

A global approach

<http://re.bnpparibas.fr/easytech/>

Product category : Management / Others

The real innovation of the PIXEL operation is in the approach developed to provide concrete answers to all the environmental issues of energy, health and comfort. For BNP Paribas Real Estate and BNP Paribas Cardiff, the technical innovation has not been an end in itself but a way to achieve a better performance. This demarche was performed using reliable and perennial solutions while ensuring a good cost control.

For example, three innovative solutions were employed for this operation:

- Chilled Beams static-piece, fitted with two reversible tubes and diffuser of fresh air VAV kind. This technology combines the advantages of low power beams with the flexibility of variable air flow. (See more RENEWABLES & SYSTEM)
- The establishment of sunscreens in venetian blinds with reflective strips, to reconcile the reduction of solar gain in summer while maintaining a good brightness in workspaces.
- The establishment of a management system of the energy and the fluids, associated with a dataroom, allowing to save, share the information and enhance the performance of the building.

Health and comfort

Water management

Particular attention was paid to the equipment to reduce the consumption of drinking water in the bathrooms. Saving equipment drinking water in health: Sanitary taps are fitted with detection of presence, a timer and a flow limiter. Showers and urinals are equipped with a push button timer and flow limiter. The bathrooms are equipped with a dual flush. The settings are optimized site:

- Hunting Water Toilet 3/6 L
- double button or keystroke
- Sinks Taps flow 5 L / min, single-lever mixer
- Showers flow 10 L / min, push button: duration was 10 seconds to be settled

This set of equipment can provide for a reduction of the total annual potable water consumption by 32% compared to conventional equipment.

Indoor Air quality

in order to control the air quality, a special attention was paid to limit pollution sources with in particular the choice of building materials. In addition, the system allows effective ventilation PIXEL to improve the quality of the air inside. The quality of the inside air is based on three approaches:

- Good ventilation spaces, the air flow rates are adapted to the local activity. Management is optimized flow rates:
- Offices: regulation depending on the ambient temperature and occupation, has parametrage delivery macro-zoning (2 masters / office areas)
- Meeting rooms: box has variable flow on all antennas diffusers positioned with CO2 sensors
- The control of pollution sources. The materials used for the operation PIXEL were selected to ensure efficient health characteristics. This approach has achieved the level of "Very Powerful" targets 2 and 13 of repos HQE. See the detail by material health characteristics of materials, in the appendix.
- Control of the air quality. To control this demarche, a measurement of the quality of the air has been effected delivery within space representative offices. This campaign has not put in evidence of concentration risk to the users. The measures pollutants (static method) meets the guideline values for the quality of air inside the National Agency for Sanitary Safety of Food, Environmental and Occupational except formaldehyde, which nevertheless respects regulatory value. Note: these measurements were performed in an unfavorable context, i.e. during construction, with a low level of ventilation in buildings (unoccupied) desorption and natural building materials. The measured values will therefore be improved occupancy phase.

A new measurement campaign will confirm this hypothesis with operation Tenure. In the operational phase, the key points have been identified in particular for maintaining good indoor air quality:

- the importance of the maintenance of filters to ensure air quality incoming,
- maintaining ventilation to ensure a constant air renewal,
- the choice of furniture, technical equipment and cleaning products, low emitters of pollutants.

Carbon

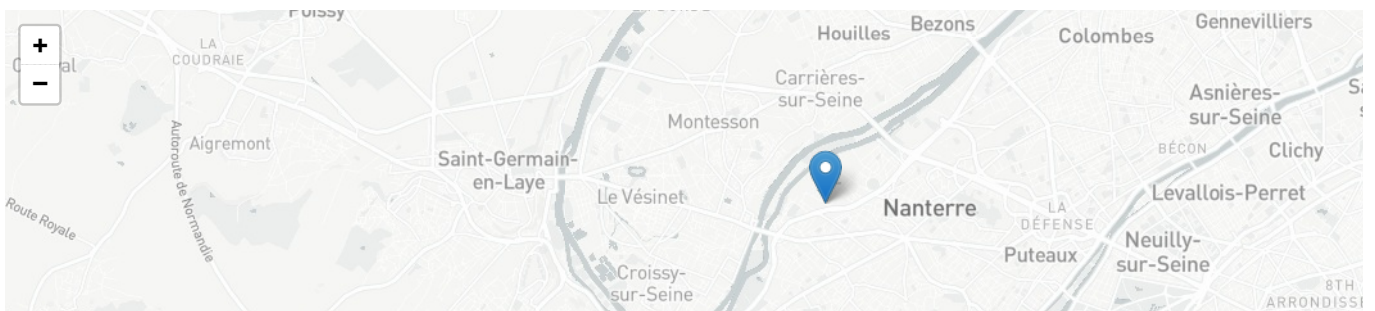
GHG emissions

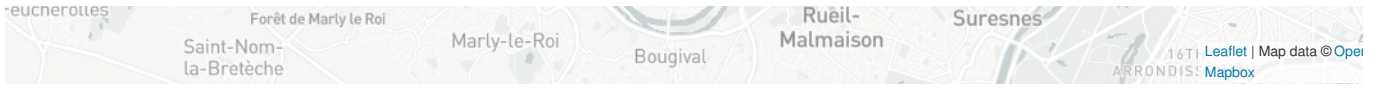
GHG in use : 2,60 KgCO₂/m²/an

Life Cycle Analysis

Eco-design material : Materials with low formaldehyde and VOC emissions were selected for the operation, in order to reach the level of "Very Efficient" for target 2 (materials) and 13 (health air quality).

Contest





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