


Home + Creche Les Lilas

by FRANCK BOUTTE CONSULTANTS / 2014-02-25 14:52:03 / France / 7846 / FR



New Construction

Primary energy need :

53.3 kWhep/m².an

(Calculation method : RT 2005)

ENERGY CONSUMPTION

Economical building

| | |
|-----------|----------|
| < 50 | 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

A

Building Type : Collective housing < 50m
Construction Year : 2013
Delivery year : 2013
Address 1 - street : ZAC Porte des Lilas 75020 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 9 300 m² SHON
Construction/refurbishment cost : 19 600 000 €
Cost/m2 : 2107.53 €/m²

Certifications :



General information

The project ZAC des Lilas (Paris, 20th) consists of a residence, a youth worker and a nursery, it's part of a sustainable development approach and strong ambition obtaining Habitat & Environment certification Option A Profile Performance Label BBC for the home. The design of the nursery is based on the principles of the HQE but seek certification, the operation also aimed at achieving the Climate Action Plan of the City of Paris, which sets conventional consumption of new buildings to a maximum of 50 kWhep / m².an.

This is a very ambitious goal for a program such as a nursery, especially with regard to requirements for the ECS, the air renewal and e , artificial lighting.

The project design focused on a bioclimatic approach to provide the intrinsic qualities of the building to minimize energy consumption. Thus, the building has a good compactness (the ratio between the envelope surface and the floor area is 0.8). The nursery also benefits from the presence of the housing 1 and Rbasement to reduce its losses (joint ownership of premises). The south facade is largely glazed to recover solar gain in winter. In addition, daylighting is optimized by large glass surfaces and choices clear liners, which reduces electricity consumption related to the & rsquo , artificial lighting. This will be provided by indirect luminaires in units to avoid glare children. The implementation of the control device and control optimizes fuel consumption (sensors in the passenger space occupation, dimmer premises to prolonged occupation , photosensitive sensors near facades).

Regulatory RT2005 study to calculate the primary energy consumption of the building was completed and updated at each design phase. It integrates all the design principles used for the envelope and building systems. This study estimates the conventional consumption (heating, waterhot, lighting, ventilation, auxiliaries) of each program (nursery + home).

A portion of the energy consumption is offset by a renewable energy: : a solar hot water production (184m ² ECS panels that provide more than 40% of the needs of the building) and two turbines that allow offset nearly 80% of consumption Electrical of the nursery.

Sustainable development approach of the project owner

By the activity of promotion, RIVP pursues a quality policy which aims, among others, to advance best practices in matters of respect for the environment. The construction of this building complex consists of a residence for young workers, a residence for immigrant workers and a crèche in the 20th arrondissement of Paris is an opportunity for RIVP to show its commitment in the field of environment by proposing a project that combines a development of the architecture of buildings and a large modernity environmental steps taken by realizing such a "low energy building" (BBC) In this context, the RIVP chose to treat ambitious way all the thematic of sustainable development. Thus, at a minimum, the proposed construction of residences should aspire certification Habitat & Environment "performance option" of Cerqual while the crib, located off part of this certification, should benefit from all facilities at the operation.

Architectural description

The new building of the RIVP features a triple program: an outbreak of migrants, a youth worker and a manger 66 cradles the Ground floor. Strong compactness of the building (cos 5.1) and the plurality of programs that transforms new home in "living machine". The Ground Floor being mainly occupied by the crib, we chose to install the R +3 all public programs at both homes (media library, gym, communal kitchen ...). This provision makes it more accessible to residents, facilitates monitoring and just create an "open" in belvedere on the city level. These "boxes" are thus arranged freely, making born of outside areas face to face with terrace cinemas (even altimetry). In complement to this horizontal breathing a hollow vertical fault the building rue du Docteur Gley, providing natural light in corridors by creating conviviality bearings on each floor. Similarly, stairwells receive all of the natural light, these are areas that we wanted to encourage qualitative maximize their use (at the expense of the elevator for example). The building and presents the contrasts of density assumed by an extremely rational plan (distribution and Layouts studios) and a double hyphen reducing the volume effects from the street. Therefore, the overall volume is treated a homogeneous solid brick skin, promoting sustainability and maintenance. the hyphenation dressed copper, whose brightness and contrast reflection with velvet brick anthracite. The apartment type is designed to monetize a maximum volume and offer versatility spaces (custom furniture designs by the MOE, mobile shutter that closes the kitchen, fixed frame that brings natural light in the bathroom ...) La creche situated on the ground floor FULLY directs all unit facing south with a large bright living comfort. An outdoor awning accompanies these spaces, a flexible enveloping structure supporting a fine mesh metal

See more details about this project

Stakeholders

Stakeholders

Function : Contractor

RIVP

<http://www.rivp.fr>

Function : Construction Manager

Chartier Dalix

30 rue émile lepeu, 75011 Paris - Tél : 01 43 57 79 14

<http://chartier-dalix.com/>

Function : Construction Manager

Avnier & Conerjo

80 rue du faubourg Saint Denis 75010 Paris - Tél : 01 45 23 33 12

<http://www.avenier-cornejo.com/>

Function : Environmental consultancy

Fabrice Bougon

14, rue Sithrau 75013 Paris - Tél : 01 44 06 00 66

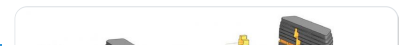
<http://www.fabricebougon.eu/>

Function : Structures calculist

E V P

80 rue du faubourg saint-denis 75010 paris - Tél : 01 40 26 15 97

<http://www.evp-ingenierie.com/>



Function : Other consultancy agency

CFERM

7, rue Sainte Hélène - 75013 PARIS - Tél : 01 43 13 38 68

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

Function : Other consultancy agency

Franck Boutté Consultants

43 bis, rue d'Hautpoul 75019 Paris - Tél : 01 42 02 50 80

<http://franck-boutte.com/>

Energy

Energy consumption

Primary energy need : 53,30 kWhep/m².an

Primary energy need for standard building : 106,20 kWhep/m².an

Calculation method : RT 2005

Breakdown for energy consumption : Heating = 15.48 kWhep / m².Year ECS = 23.45 kWhep / m².Year Fans = 5.73 kWhep / m².Year Lighting = 6.80 kWhep / m².Year Auxiliary = 1.89 kWhep / m².Year

Real final energy consumption

Final Energy : 44,52 kWhep/m².an

Envelope performance

Envelope U-Value : 0,71 W.m⁻².K⁻¹

More information :

'Structure: concrete veil soul' Fronts: brick, siding glazed puff / tempering / or enamelled copper foil cladding' Insulation and linings: mineral wool or ecological materials was equivalent thermal performance' Shutters: lacquer aluminum and perforated' Chassis: aluminum profiles except at R 3 and DRC' Partitions: gypsum board on metal framing' Terraces available: floor covering paint with anti-slip treatment silica' Garden terraces: the R 1, R 3 and R 6' Floor Coverings: rubber

Building Compactness Coefficient : 5,10

Renewables & systems

Systems

Heating system :

- Condensing gas boiler
- Water radiator

Hot water system :

- Condensing gas boiler
- Solar Thermal

Cooling system :

- No cooling system

Ventilation system :

- Humidity sensitive Air Handling Unit (Hygro B)

Renewable systems :

- Solar Thermal
- Micro wind

Environment

Urban environment

Located in the twentieth arrondissement of Paris, beyond the peripheral, it is a joint with the common Lilac. Immersed in a topographic changing environment (in the peripheral against low coverage, the steepness of the area, the terrace of cinema art and essay), the building absorbs these altimetry as new references, by creating its own system of "urban balconies" that dialogue with these new urban strata.

Products

Product

Urban Wind Power

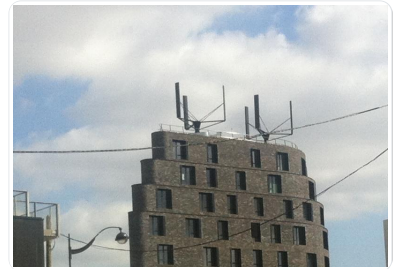
agence@franck-boutte.com

<http://www.franck-boutte.com>

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

To meet the goals set by the project owner can offset a portion of the consumption of the building by a renewable energy: solar hot water production (184m² ECS panels that provide more than 40% of needs of the building). However, to meet the objectives, complementary output was necessary. The choice of wind power has been mainly on contextual considerations: the site is privileged along the peripheral, forming a corridor of wind with little surrounding masks. In addition, a portion of the roof area being occupied by solar thermal panels, / production ratio impact with the ground being a determinant criterion, urban eolien responds perfectly to the constraints of the project. The wind power is cheaper than photovoltaics vis-a-vis the productivity report / footprint. This criterion of choice is not negligible in an urban situation, especially for this project, which presents a low roof area compared to the surface of the program (report roofing surface / floor area <1%). The wind turbines should help offset nearly 80% of electrical consumption of the crib thus meet the expectations of the climate plan.

Despite the relatively unique aspect of the wind power project in the city to implement this system on the roof of the building was very well received by the project owner, the operation is also interesting in terms of pedagogy. In fact, wind turbines, visible from the street challenge passersby and allow awareness of renewable energies.



Health and comfort

Water management

All installations are provided with a check valve. The temperature of the ECS network is maintained above 50 °C at any point to outlaw the risk of development of legionella. Temperature sensors, connected to the BMS control the temperature maintenance of networks. The fitting is classified NF.

Indoor Air quality

The ventilation systems are suitable for use. The units have a type double flow ventilation with heat recovery. The supply and exhaust are in the awakening from suspended ceilings rooms situated in the sleeping rooms. The ductwork are equipped with filters to ensure the quality of the incoming air (fresh air only). "Sensitive" or damp possess of specific extraction vents (by controlled mechanical ventilation). The choice of materials is based on their health quality (low VOC emissions for example). The appeal of labeled products was privileged (NF Environment, European ECO label, Blue Angel, PEFC).

Carbon

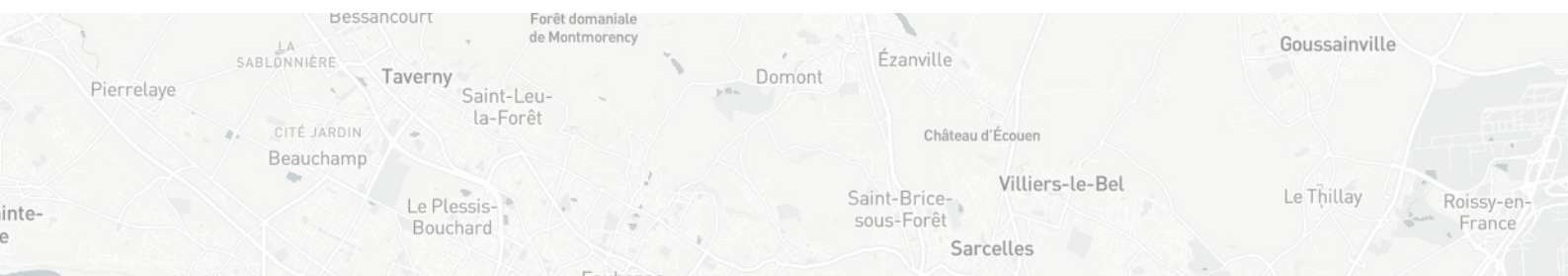
GHG emissions

GHG in use : 10,00 KgCO₂/m²/an

Methodology used :

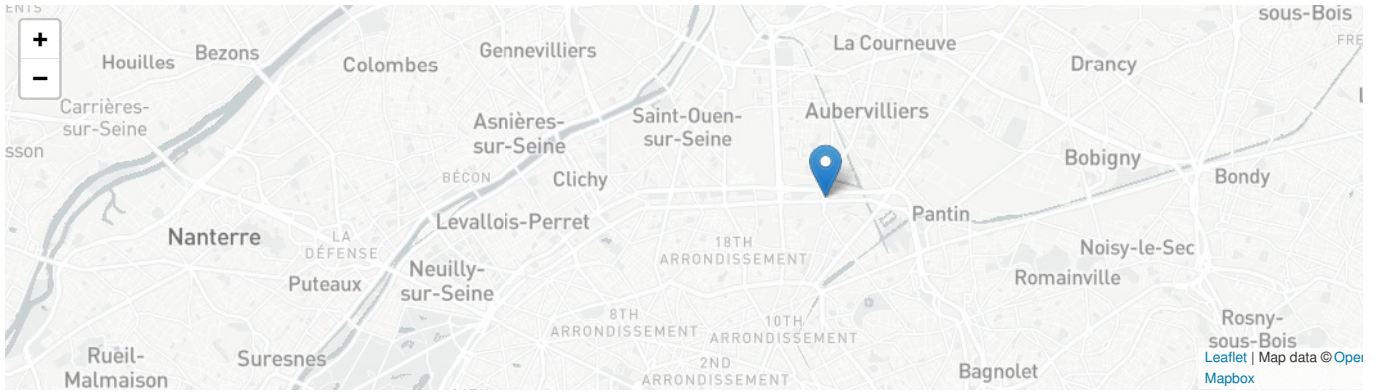
RT2005

Building lifetime : 50,00 année(s)





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