

Opération Edison Lite

by Ludovic GUTIERREZ / 2020-06-29 12:29:51 / France / 7179 / FR



New Construction

Primary energy need :

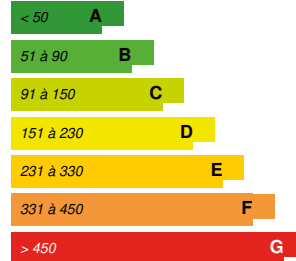
55 kWhep/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building

Building



B

Energy-intensive building

Building Type : Collective housing > 50m
Construction Year : 2018
Delivery year : 2019
Address 1 - street : 67-69 Avenue Edison 75013 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 685 m²
Construction/refurbishment cost : 4 300 000 €
Cost/m2 : 2551.93 €/m²

Certifications :



Proposed by :



General information

A green co-residence with the objective of Zero co-ownership charges

Winner of "Reinvent Paris" (call for innovative urban projects launched in November 2014 to developers, investors and designers from all over the world, on 23 Parisian sites), the Edison Lite project was born from the desire to imagine an innovative building on the integration of biodiversity into the building and on energy aspects and living together.

The site, placed in a very dense urban context of the 13th arrondissement of Paris, has the ambition to become a landmark and an unifying element of the district. The decision was thus taken to explore the architectural freedoms allowed by the plot and the PLU. In addition, the 21 housing units spread over 1,685 m² are accompanied by shared common spaces, a nursery and a commercial space which helps to finance part of the housing units. The total area of the set is 2261 m².

In this building, no less than six major innovations were implemented, making this operation an ambitious operation:

- **To imagine innovative construction methods.** The expressive architecture stems from innovative construction methods, in particular a three-material concrete-wood-metal structure.

- **To promote living together.** Focused on sharing and social cohesion, the Edison Lite project adds more than 30% of the living space to shared living spaces such as a 2.0 cellar-workshop, a rooftop vegetable garden and terraces including in particular an open kitchen for the community residents.
- **To invent the first concept of habitat.** Edison Lite is one of the first buildings that puts people, their needs and desires, at the heart of the process of programming, designing, producing and managing their "tailor-made housing".
- **To offer an art of living around a productive residence.** The plant is at the center of the project, it radiates and is diffused in several forms and at different scales, for the district as well as for its residents. The facade is in natural wood and entirely vegetated.
- **A goal of "zero charges" for co-ownership.** The building is designed as a self-sustaining profit center, an asset that generates revenue to offset its own operating costs.
- **Bioclimatic architecture.** The building is compact and efficient, the site was clean and "silent" so as not to harm the neighborhood. The targeted energy performance is that of the Effinergie + label.

The desire of the Edison Lite group is for the community of residents to become the main ambassador and activist of this showcase building, thus promoting the emergence of similar projects in the urban landscape.

These major programmatic orientations are implemented in particular through innovative solutions that make it possible to achieve the energy performance objective RT2012 -20%, entitling to obtaining the Effinergie + label and the E2 level with regard to the E+C- benchmark :

- the association of two aerothermal heat pumps with natural gas absorption installed on the roof, coupled with two cascade condensing boilers located in the basement boiler room ensuring the production of hot water for heating and sanitary uses
- 30% of glazed surfaces made of wood joinery

The group's partners, including several national or international companies: GRDF, ENGIE Solutions, Socfim Banque, INLI, expert in intermediate housing (Action Logement); the startup HABX specializing in new custom housing, the Notariale Rebérat study, the law firm Joffe & Associés and the construction economist VPEAS, have enabled the implementation of economically realistic innovations and sufficiently mature to be implemented short-term while responding to the real issues of future residents of the Edison Lite.

Sustainable development approach of the project owner

Testimony of Maximilien Motto, Loftissime:

"Our primary objective was to carry out a project with zero co-ownership charges. For that, it was necessary to look into the question of uses, and therefore to offer a building that was as energy efficient as possible.

It is the rent of the shop that we will rent at the foot of the building will allow us to cover the costs related to the maintenance of the building. These amount to around 20 to 25 € / m2.

While this is our first zero-load building, it is also our first green building.

Before, our buildings were always aligned with the RT2012, whereas with Edison Lite, we achieved a performance level RT2012 -20%. It is also the first time that we have used a gas heat pump. "

Architectural description

The architect Manuelle Gautrand knew how to propose an innovative, original and expressive architecture composed of metal planters participating in the greening of the facade. The co-residence will be designed according to an energy performance objective of RT2012 -20% level, allowing a strong **reduction in energy consumption**.

If you had to do it again?

We would find solutions upstream to simplify the facade. Indeed, the implementation of 280 planters with a wooden facing was very complex. The technical constraints were numerous during the installation.

See more details about this project

<https://www.construction21.org/france/data/sources/users/13378/docs/fiche-reference-edison-lite.pdf>

<https://www.actuarchi.com/projet/edison-lite-paris-manuelle-gautrand/>

https://4cdd11c1-452f-4940-b030-2d8e8c4a023d.filesusr.com/ugd/2be818_99850287a677445bab4cbe29453d9afa.pdf

<https://www.amc-archi.com/photos/les-laureats-de-reinventer-paris-13-22-edison-lite-xiiie-arr,4695/reinventer-paris-edison-l.1>

<http://manuelle-gautrand.com/projects/edison-lite/>

Photo credit

Loftissime

Contractor

Name : SCCV Edison Lite

Construction Manager

Name : Manuelle Gautrand Architecture

<http://manuelle-gautrand.com>

Stakeholders

Function : Contractor

Loftissime

<https://www.loftissime.com>

Function : Designer

Manuelle Gautrand Architecture

<http://manuelle-gautrand.com>

Function : Thermal consultancy agency

S2T Ingénierie

<https://www.s2t.fr/>

Function : Company

GTM Habitat Bâtiment Ile-de-France

Function : Environmental consultancy

Vpeas

<https://www.vpeas.com>

Construction Economist

Function : Environmental consultancy

Bureau Bas Smets

<http://www.bassmets.be>

Function : Other consultancy agency

Qualiconsult

<https://www.groupe-qualiconsult.fr/en/>

Function : Assistance to the Contracting Authority

Nouvelles Fonctions Urbaines

<http://www.nfu.fr/#/Home>

Function : Company

GRDF

<https://www.grdf.fr>

Function : Company

ENGIE Solution

<https://www.engie-solutions.com/fr>

Function : Environmental consultancy

HABX

<https://www.habx.com/fr/>

Specialist in new custom housing

Function : Environmental consultancy

Joffe & Associés

Function : Investor

Socfim Banque

<http://www.socfim.com/societe.html>

Function : Environmental consultancy

INLI

<https://www.inli.fr>

Energy

Energy consumption

Primary energy need : 55,00 kWhep/m².an

Primary energy need for standard building : 71,00 kWhep/m².an

Calculation method : RT 2012

Breakdown for energy consumption : Heating: 20.3 kWh EP or 36% of the Vine DHW: 24 kWh EP or 43% of the Vine Auxiliaries Ch / Raf / DHW: 2.3 kWh EP or 4% of the Vine Ventilation auxiliaries: 5 kWh EP or 9% of the Vine Lighting: 3.9 kWh EP or 7% of the Vine See the diagram in the photos. The complete Bbio of the building (21 housing + crèche + commerce) is at 62.5 points

Envelope performance

Envelope U-Value : 0,63 W.m⁻².K⁻¹

More information

The DPE covers the 21 dwellings. TH-BCE 2012 method for RT2012

Renewables & systems

Systems

Heating system :

- Condensing gas boiler
- Heat pump

Hot water system :

- Condensing gas boiler
- Heat pump

Cooling system :

- No cooling system

Ventilation system :

- Single flow
- Humidity sensitive Air Handling Unit (Hygro B)

Renewable systems :

- Heat pump

Other information on HVAC :

Heating and DHW production:

Basically, two aérothermal absorption gas heat pumps with a thermal power of 2 x 38 kW placed on the ground floor

In addition, 2 gas condensing boilers in cascade located in the boiler room in the basement.

750 L DHW storage tank

Renewable energies:

- aérothermal absorption gas heat pumps (up to 40% RE on outside air).

Environment

Urban environment

Land plot area : 418,00 m²

The site, placed in a very dense urban context in the heart of the 13th arrondissement, with a relatively heterogeneous character, allows a certain daring, technological, environmental, but also architectural. The winning team takes advantage of this density to imagine a welcoming and benevolent project, to create a landmark in the neighborhood and ensure that it becomes a unifying element. Despite the narrowness of the place, the project asserts itself through a frame of posts giving verticality to the building, it is then stratified by planters that slide between its verticals, offering green areas in this mineral place.

400m² of shared spaces

Rooftop vegetable garden

Green and edible residence

Products

Product

DD MCA65 gas boiler

De Dietrich

<https://www.dedietrich-thermique.fr>

Product category : HVAC, électricité / heating, hot water

This is a wall-mounted gas condensing boiler from the INNOVENS PRO range with an output of 65 kW.

DD heat pump PGA38H

De Dietrich

<https://www.dedietrich-thermique.fr>

Product category : HVAC, électricité / heating, hot water

This 38 kW natural gas absorption aerothermal heat pump can achieve an efficiency of up to 165% on PCI (lower calorific value) in primary energy. Its share of RE varies between 25% and 40%, making it possible to achieve high levels of energy performance as well as labels.

Ventilation simple flux EasyVEC® C4 micro-watt +

Aldes

<https://pro.aldes.fr>

Product category : HVAC, électricité / ventilation, cooling

Very low consumption EC motor, delivered with a very intuitive remote control.

Costs

Construction and exploitation costs

Total cost of the building : 4 300 000 €

Additional information on costs :

The total cost mentioned does not take into account technical fees.

Carbon

GHG emissions

GHG in use : 13,00 KgCO₂/m²/an

These are GHG emissions for heating, domestic hot water production and cooling, resulting from the DPE of 21 housing units.

Contact

Reasons for participating in the competition(s)

Le projet Edison Lite répond à une démarche d'innovation technologique et sociale. Les solutions techniques mises en œuvre permettent au projet d'atteindre l'objectif de performance énergétique RT2012 -20%, d'obtenir un niveau E2 en expérimentation E+C- et le label Effinergie+. Le choix s'est porté sur l'association de deux PAC aérothermiques à absorption au gaz naturel installées en toiture, couplées à deux chaudières à condensation en cascade situées dans la chaufferie en sous-sol assurant production d'eau chaude pour le chauffage et les usages sanitaires. 30% des surfaces vitrées ont également été réalisées en menuiseries bois. Pour l'aspect social, l'enjeu de ce bâtiment était de proposer des logements de qualité au-dessous du prix du marché. Cela a été possible, en intégrant notamment au rez-de-chaussée un espace commercial qui participe au paiement des charges. L'accent a également été mis sur les espaces communs. Un atelier et une salle polyvalente permettent aux habitants de se rencontrer et de réaliser des activités ensemble.

Building candidate in the category



Energie & Climats Tempérés

