Condominium Nice st - Paris 11th

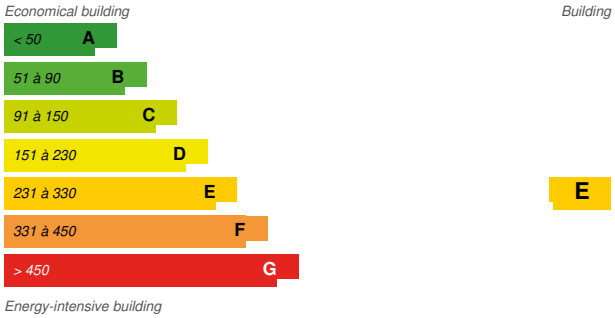
by Joséphine LEDOUX / 2019-02-21 10:56:04 / France / 5425 / FR

Primary energy need :

301 kWhep/m².an

(Calculation method :)

ENERGY CONSUMPTION



Building Type : Collective housing < 50m
Construction Year : 1893
Delivery year : 2018
Address 1 - street : 2 bis rue de Nice 75011 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 845 m²
Construction/refurbishment cost : 303 870 €
Number of Dwelling : 23 Dwelling
Cost/m2 : 359.61 €/m²

General information

It is a condominium located in the 11th district of Paris and built in 1890.

The condominium, uninsulated and heated by electric heaters, is an energy strainer.

The co-owners therefore wanted to study the feasibility of **thermal insulation from the outside** .

They first appealed to an architect for a refurbishment project with ITE. The budget announced by the architect seems too important to them, they asked ENERA Council to carry out a **study of contradictory Mastery of work** .

Our mission focused on the study of the renovation of building facades, to which we recommended to add the insulation of the roof, the insulation of the floors on cellars and the implementation of a hybrid ventilation .

We want to highlight this project to show that a thermal renovation of a condominium building is feasible despite significant constraints:

- Small condominium with a low number of lots (23 apartments - 845m ²) and therefore budgets little diluted (high share by co-owner).
- An old building with a constructive system "porous" and a special attention not to degrade the frame.
- Chilly companies using new materials
- 3 buildings adjoining with a problem of encroachment.
- 70% of landlords.

From a technical point of view, the solution to this project was to propose a **fiber - wood insulation** on most facades and to propose a hygro A hybrid ventilation in order to ensure air renewal.

We have put in place a **progressive communication process** to establish the legitimacy of all actors involved and to carry out step-by-step validation. It is this approach of close accompaniment and conductor that has led to a more ambitious project than it was at the beginning for an acceptable cost.

This renovation allowed to go from an energy label G to E.

Consult the map of renovated condominiums on the Paris metropolis

https://paris.coachcopro.com/pages/carte-des-coproprietes-renovees

Sustainable development approach of the project owner

The aim was to combine a need for facade renovation and treatment of wetness problems with **efficient energy renovation** and the use of **bio-sourced materials** . The performance of this project, in addition to **saving 52% on primary energy** , was the **project management** to succeed despite strong constraints to lead a successful project to the end. Indeed, in the context of a condominium renovation, the difficulty and innovation are not technical strictly speaking. They are found in the communication between the different actors of the project and the **technical and social management** of the project.

The actors of the project:

The assembly of the co-owners - the union council - the trustee - SOLIHA (the public utility organization accompanying the helpers) - the companies - the neighboring condominiums - the urban planning department of the town hall.

The communication objectives:

- Inform the union council regularly of each advancement with clear and complete information from a financial point of view.
- Validate each step to avoid blockages and backtracking.
- Accompany the company in the handling of new materials (wood fiber) and new techniques of implementation.
- Ensure the proper transmission of information between ENERA Council and SOLIHA and between SOLIHA and the union council / trustee

Communication and project management tools

- Monthly meetings with the union council to indicate progress and allow the SC to make a decision on the next steps.
- 2 meetings of condominiums: 1 presentation of the DCE + 1 presentation in AG to allow an optimal communication around the project. We sent the neighboring condominiums a personalized document explaining the progress of the project and the impacts on their building.
- 2 on-site meetings with the renovation company, the wood fiber manufacturer PAVATEX, the manufacturer of ZOLPAN façade and plaster preparation products in order to fully understand the project and maximize costs.
- Permanences during the construction to answer the interrogations of the occupants.
- Regular communications at each stage of the project.
- A final presentation of the work and the project.

Architectural description

The building dates back to the end of the 19th century and we wanted to respect and maintain the architectural style of the time by producing a plaster of the same color as the existing plaster. The original appearance of the building has been maintained.

If you had to do it again?

The condominium decided to insulate the attic with rock wool while we had proposed an optional cellulose wadding solution whose additional cost did not exceed 1 000 € TTC. Given the assistance that the condominium receives for the use of wood fiber facade, it seemed consistent to continue the process with bio-based materials. The return of joinery will not be treated. To treat the tables, it would have had to remove the shutters installed individually by the co-owners. But the town hall has banned the installation of shutters in case of removal. So, not to lose the use of shutters, it was decided not to isolate the tables. We had 4 months to manage the "study" phase of the project. We would have liked to have more time, to negotiate with the mayor on the shutters and find a solution acceptable to everyone and likewise, have time to convince the co-owners to isolate the attic with cellulose wadding.

See more details about this project

https://paris.coachcopro.com/fiche-de-site/d5be8935-9960-4cfc-a32f-e33cc1c0b614

Stakeholders

Contractor

Name : Copropriété 2bis rue de Nice représentée par Cabinet C.-P. Rinaldi (syndic)

Construction Manager

Name : ENERA Conseil
Contact : Joséphine LEDOUX
https://www.enera-conseil.com/

Stakeholders

Function : Company

Europtherm

https://www.europtherm.fr

Natural ventilation

Function : Company

COULON SA

https://www.coulon-sa.com

ITE, insulation attics and floors, facade

Contracting method

Separate batches

Type of market

Table 'c21_belgium.rex_market_type' doesn't exist

Energy

Energy consumption

Primary energy need : 301,00 kWhep/m^2.an

Primary energy need for standard building : 234,00 kWhep/m^2.an

Calculation method :

CEEB : -0.0002

Breakdown for energy consumption : Heating 68% ECS: 28% Lighting 4% Auxiliary 0%

Initial consumption : 613,00 kWhep/m^2.an

Real final energy consumption

Final Energy : 116,80 kWhef/m^2.an

Envelope performance

Envelope U-Value : 0,67 $W.m^{-2}.K^{-1}$

More information :

The walls are composed of old building materials permeable to water vapor. To avoid any risk of degradation, it is necessary to provide insulation also permeable to water vapor.
Our decision was to choose rockwool insulation for the south and west facades. The firebreaks required to comply with the fire regulations would have led to an excessively high cost in comparison with wood fiber.
We could not include the replacement of all glazing, some of them having already been replaced by double glazing certainly poor performance.

• Insulation of all exterior walls with insulated insulation.
• Bio-sourced wood fiber insulation on East / North and Southwest façades
R = 3.8 kWh / m².K
• Attic insulation with mineral wool R = 7 kWh / m².K
• Low floor insulation by mineral wool flocking R = 3 kWh / m².K

The outer insulation:
• Resume of railings
• No insulation of window frames
• Treat degraded concrete parts
• Remove the vegetation present on the facades
• Consideration of the risk of spread to fire (C + D)
• FIBER WOOD insulation
• Consultation of neighboring condominiums for the right of encroachment

More information

Heating and hot water production being individual it is difficult to obtain the exact consumptions. Nevertheless, by experience, we know that the consumptions including electrical ECS are overvalued by calculation RT ex.

Renewables & systems

Systems

Heating system :
- Electric radiator

Hot water system :
- Other hot water system

Cooling system :
- No cooling system

Ventilation system :
- humidity sensitive Air Handling Unit (hygro A

Renewable systems :
- No renewable energy systems

Other information on HVAC :
We have not been able to process the heating and hot water production systems in view of the budgets. Nevertheless, the building insulation significantly reduced heating requirements from 58kW of maximum requirements to 18kW of maximum need after renovation. The ventilation system selected is not mentioned in the above list, it is a hybrid hygro A stato-mechanical ventilation adapted to the renovation of natural ventilation ducts and chimneys, to maintain sufficient flows by the force of the wind or an integrated motor.

Environment

Urban environment

Heart of Paris, in a dense neighborhood of which most buildings are old, well served by public transport.

Products

Product

DYN ASTATO

ASTATO

Patrick Candela

http://www.astato.com

Product category : Génie climatique, électricité / Ventilation, rafraîchissement

Hybrid statomechanical ventilation allows a natural ventilation draw by venturi effect when the outside temperature or the wind draft permit. When external conditions are not sufficient for natural draft, a motor located under the cap creates the vacuum to provide the necessary low-pressure ventilation flow. This process is particularly suitable for renovation when existing ducts (natural ventilation or old chimney) are difficult to duct. The hygro A low-pressure specific extraction vents allow the ventilation flow to be controlled according to actual needs and occupancy.

This system has been validated without difficulty because it is very suitable for the project and necessary to maintain sufficient air quality after insulation.

Costs

Construction and exploitation costs

Cost of studies : 27 283 €

Total cost of the building : 385 325 €

Subsidies : 250 288 €

Energy bill

Forecasted energy bill/year : 15 866,00 €

Real energy cost/m2 : 18.78

Real energy cost/Dwelling : 689.83

Carbon

GHG emissions

GHG in use : 16,00 $KgCO_2/m^2/an$

Methodology used :

RT ex

GHG before use : 38,00 $KgCO_2$ $/m^2$

Building lifetime : 300,00 année(s)

, ie xx in use years : 2.38

Life Cycle Analysis

Eco-design material :

The life cycle analysis was not performed. Considering the age of the building, namely 129 years, its carbon construction impact has been amortized for a long time. We have not conducted a study on the carbon impact of materials used for renovation, but wood fiber is a biobased material.

Contest

Reasons for participating in the competition(s)

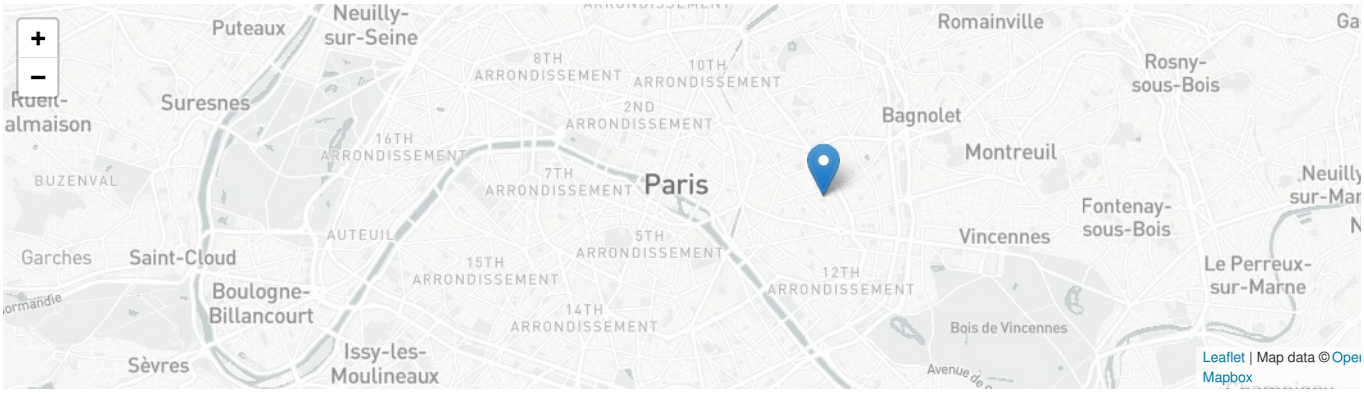
The project is part of a process of reducing consumption, carbon impact and improving comfort. Heated by electric radiators, this co-ownership isolated its envelope and installed a powerful ventilation system. These actions led to a 57% reduction in greenhouse gas emissions and a rate of 16kgCO2eq / m².year.

Building candidate in the category

Bas Carbone

Prix du public

Prix des Etudiants



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