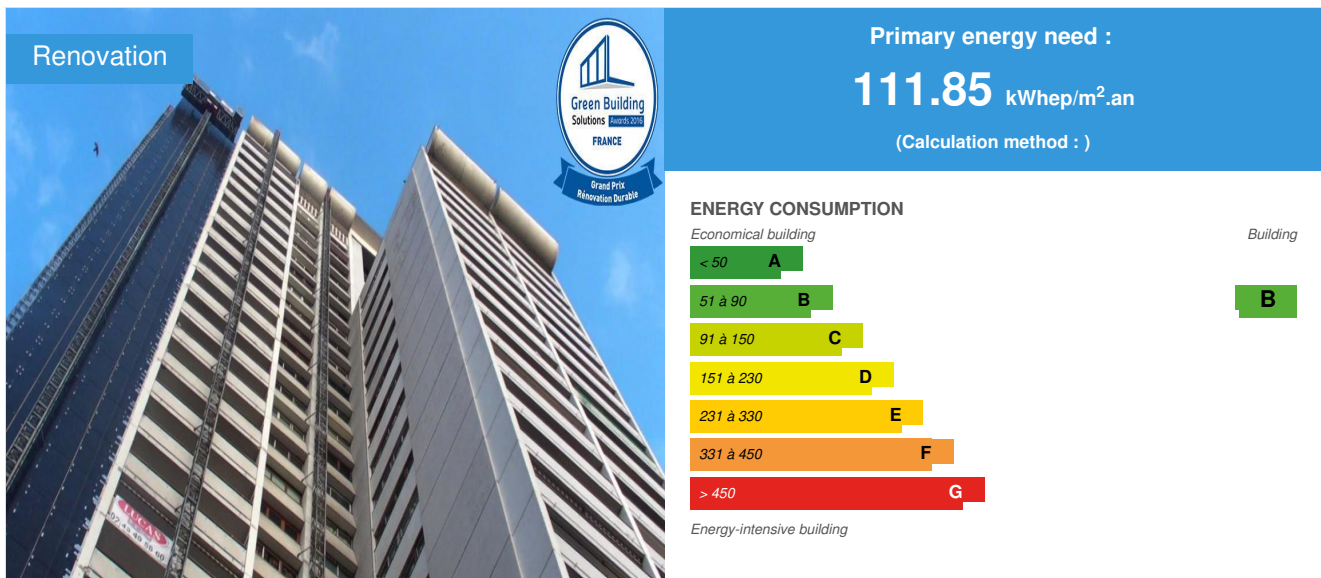


Supermontparnasse Tower

by francois PELEGRIN / 2020-07-29 17:16:40 / Francia / 18434 / FR



Building Type : Collective housing > 50m
Construction Year : 1968
Delivery year : 2015
Address 1 - street : 15 rue Georges Pitard 75015 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 15 000 m²
Construction/refurbishment cost : 5 000 000 €
Number of Dwelling : 270 Dwelling
Cost/m2 : 333.33 €/m²

Certifications :



Proposed by :



General information

An atypical project by its size:

- 270 private dwellings,
- 30 floors
- A high building signed by Zehrfuss built in the 60ies.
- loggia balconies
- a glass paste facade crumbling and falling on bystanders.

The condominium installed scaffolding to secure its surroundings. A facelift is needed but this round is not insulated and heating loads are heavy.

Why not imagine a more global action? the co-owners did an energy audit, then mounted an ambitious energy and architectural improvement program, unusual for a private condominium. The operation was conducted smoothly. Usually, decisions are hard to take in condominiums and often pushed back from one year to

another. Meanwhile the building is deteriorating. The people do not have the same status, the same income, and not necessarily the same interest. If everyone is investing heavily its housing, public areas and the "common good" are associated with "fillers" high financial.

in Super-Montparnasse, a virtuous process began with the consent of co-owners, thanks to the commitment and dynamism of the union council, the participation of many stakeholders (APC, city of Paris etc.) and especially through the digital model. Indeed, the BIM has been a great dialogue tool to understand the issues, explore hypotheses, agree and especially reassure each owner still cautious about the idea of spending a lot of money on things that do not really see (insulation). He was able to understand the whole project, view her apartment and her apartment consequences, follow the site daily, be warned interventions inside etc.

The site is in progress. A copy requalification that values each apartment and illustrates use of BIM as a communication tool and ownership of the project towards a Master of unprofessional work.

Sustainable development approach of the project owner

The Supermontparnasse tower designed by ZEHRFUSS in 1968 showed different pathologies:

- molten glass facade with elements that fall,
- high energy consumption bill (inefficient carpentry, insulation failure),
- district heating difficult to regulate on thirty floors.

Architectural description

The audit established by PAZIAUD has allowed to target the points on which it was necessary action to improve the energy balance of the tower:

- Insulation of walls / treatment of thermal bridges.
- Replacement of windows.
- Replacement of the exhaust openings
- Implementation of humidity sensitive ventilation

The architects have addressed these points in order to respect the architecture of the tower.

This results in particular in the choice of materials, with insulation of different thicknesses facades but of equal performance to the shape of the building.

The insulation is covered with a facade cladding types "shells MD" is a cladding system reported with ventilated air space has base metal cassettes what is innovative for a building of this size.

Maintaining visual comfort for the occupants and despite the addition of external insulation, light glazing is identical to the old woodwork, thanks to optimization profiles and built carpentry, while allowing better performance acoustic and thermal.

See more details about this project

<http://www.construction21.org/france/articles/fr/ranovation-de-la-tour-super-montparnasse--un-pari-energetique-raussi.html>

Stakeholders

Stakeholders

Function : Designer

ARCHITECTURE PELEGRIN

PELEGRIN François tél:06.60.64.03.03 mail: francois.pelegrin@architecture-pelegrin.com

<http://www.architecture-pelegrin.com>

design + execution

Function : Designer

LAIR ET ROYNETTE ARCHITECTES

LAIR philippe tél: 06.09.84.85.34 mail: ph.lair@lair-roynette.fr

<http://www.lair-roynette.fr>

conception+élaboration cctp

Function : Company

LUCAS REHA

NOUVEAU Jacques+JAOUANNET Jean Marie tél:06.03.79.94.01 + 06.23.53.31.89 mail:reha@lucas.fr

<http://www.lucas-reha.fr/>

Facade

Function : Company

NORBA

<http://www.norba-menuiserie.com>

Carpentry

Function : Company

PAZIAUD INGENIERIE

<http://nepesen.fr>

Function : Assistance to the Contracting Authority

LE TERROIR (SYNDIC)

tél: 01.43.87.27.60 Mail : contact@cabinetleterroir.fr

<http://cabinetleterroir.fr>

Joint property

Contracting method

Separate batches

Type of market

Table 'c21_italy.rex_market_type' doesn't exist

Energy

Energy consumption

Primary energy need : 111,85 kWh/m².an

Primary energy need for standard building : 73,82 kWh/m².an

Calculation method :

CEEB : -0

Initial consumption : 206,00 kWh/m².an

Envelope performance

Envelope U-Value : 0,80 W.m⁻².K⁻¹

Renewables & systems

Systems

Heating system :

- Urban network

Hot water system :

- Urban network

Cooling system :

- No cooling system

Ventilation system :

- humidity sensitive Air Handling Unit (hygro A)

Renewable systems :

- No renewable energy systems

Environment

Urban environment

The tower is located in the 15th arrondissement of Paris, in a dense urban fabric.
With 30 floors it dominates the surrounding cityscape.

Products

Product

facade siding types "MD shells"

SOCOTEC

3 avenue du centre -Guyancourt 78182 Saint-Quentin en Yvelines cedex

<http://www.socotec.com/fr/>

Product category : Table 'c21_italy.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '12'

A cladding system reported with ventilated air space has basic plan appearance of metal cassettes and simple type skin made of stainless steel or sheet aluminum alloy.

Protect the insulation for a sober facade treatment while keeping a gloss appearance similar to that of existing glass pastes.



Costs

Construction and exploitation costs

Total cost of the building : 5 000 000 €

Subsidies : 536 000 €

Contest

Reasons for participating in the competition(s)

Il s'agit de la rénovation thermique d'un immeuble de grande hauteur, construit dans les années 60.

Cette rénovation de part les performances obtenues, la technicité et le contexte (copropriété de 270 logements en milieu occupé) est citée en exemple par la ville de Paris et l'APC.

Architecture PELEGRIN created the digital model of the existing building then enriched it all along the project with technical solutions selected by the team and the owner.

BIM was a communication tool and live decision tool for the 270 co-owners. It allowed "quick decisions" when decision timescales for condominiums is usually terribly long and the multiplicity of statuses (living onsite owners and landlords, retired and first-time buyers, and more...) don't make things easy. During presentations in front of the co-owners, each inhabitant of the building could comprehend the project in its globality and visualize the consequences for their own apartment. Without BIM, the decision to vote the project would have required one year or even longer.

All the design team (architects, engineers, etc...) used the same digital model.

For the companies, BIM facilitated the construction phase in an occupied site: marked windows (what choices, what color) but also the coordinates of each inhabitant to make each intervention easier and ensure as low nuisance as possible.

Building candidate in the category



Bâtiment rénové / grand projet





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