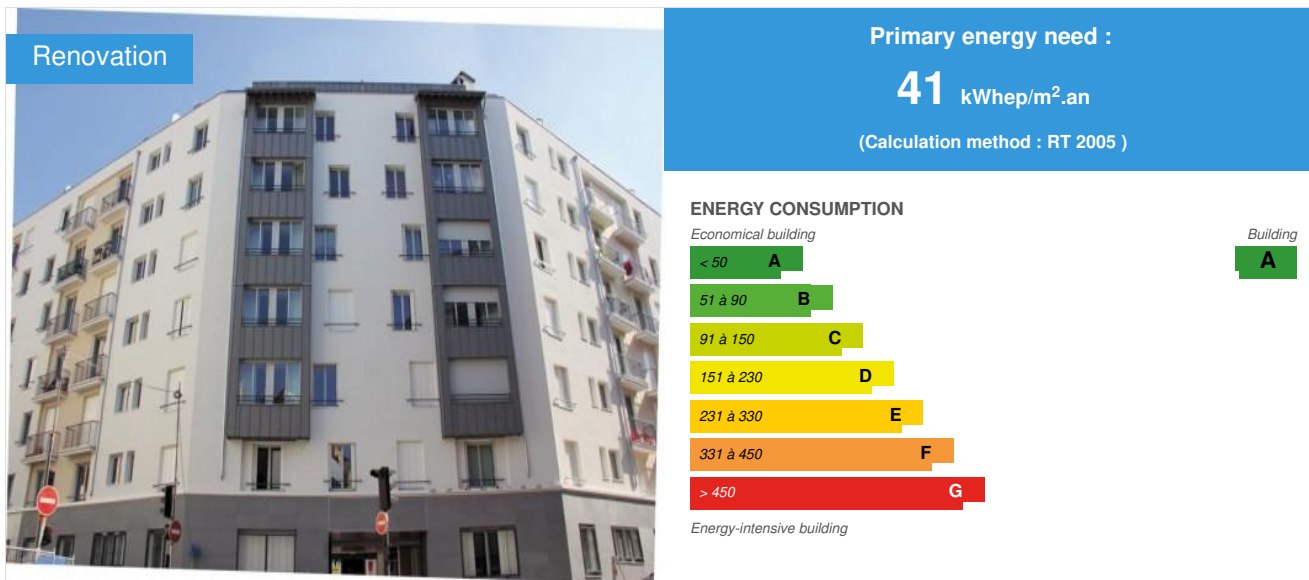


Cotentin-Falguiere: ICF Habitat Novedis / Beem 'Up accelerators energy renovation

by Charlotte Thélot / 2014-02-12 11:38:05 / France / 12240 / FR



Building Type : Collective housing < 50m
Construction Year : 1959
Delivery year : 2014
Address 1 - street : 75015 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 5 759 m² SHON
Construction/refurbishment cost : 4 000 000 €
Number of Dwelling : 82 Dwelling
Cost/m² : 694.57 €/m²

Certifications :



General information

ICF Habitat performed the renovation of 87 apartments in the Contentin Falguière residence with its subsidiary for intermediate housing, ICF Habitat Novedis within the context of the Experimental Project Europe , in Beem'Up - Building Energy Efficiency for Massive Market Uptake. This european project , covering 3 sites (one in the Netherlands and one in Sweden), aims to share innovative, economic and repeatable solutions between actors of the construction field, in order to accelerate energetic renovation of collective housings in Europe. The common objectives are:

- Reduction of energy consumptions by 75%
- Establishing a quality approach enshrined in the time
- Accompanying tenants throughout the project
- Proposing innovative solutions
- Analysis of the gain of the project and its potential for replication.

The rehabilitation program of the Cotentin Falguière residence includes:

- External thermal insulation of the façade (partially with BASF innovative thin insulant), the roof and the terraces.
- Woodwork replacement and mechanical ventilation implementation.
- Boilers replacement associated with regulation and performance monitoring.
- Consumption measuring and automatic reporting to the tenants.
- Implementation of a ERS biofluid system for heat recovery from greywater to the hot water system.

Sustainable development approach of the project owner

Within the context of the Grenelle de l'Environnement, ICF Habitat plans to divide by their greenhouse gas emissions by 4 for 2050, notably through their Patrimony Strategic Plan, their Energy Masterplan and their carbon footprint action plan.

To reduce their emissions by 10,000 tonnes CO₂eq per year (ie 2.5%) at constant perimeter, ICF Habitat elaborated a three-year action plan that focuses on five main areas:

"Energy in the rental stock" or the integration of energy efficiency criterias in the strategy for reconfiguration of rental housing and energy optimization (major projects not included).

"Paper and responsible purchasing" or how to reduce consumption, including paper through a deliberate dematerialisation policy.

"Instrumentation and behavior" or how to foster the evolution of our tenants to more sober behavior in matters of energy and waste, pedagogical use of smart meters;

"Real estate project ownership" with experimentations in construction low carbon renovations;

"Life at work" or how to mobilize all employees around sustainable development objectives of the Group.

ICF Habitat took part in several European research projects:

After the implementation of the first Energy Performance Contract (EPC) with a third investor in Schiltigheim (France), ICF habitat demonstrates once again with Beem'Up project, its willingness to participate fully in the search for innovative solutions to renovate the existing housing. ICF Novedis Habitat pioneers also in sustainable management of green spaces.

Architectural description

Challenges :

- bringing the building to current safety and comfort standards ;
- improving thermal efficiency of the building and limiting the consumptions;
- highlighting the assets of the building;
- improving comfort and quality in housings;
- limiting expenses due to energy consumptions;
- check on implemented upgrades efficiency.

Program:

- Building envelope: thermal insulation, renovation of the façades, roof and terraces, woodwork replacement;
- Outside spaces: yard and bike parking lots;
- Common areas: halls, circulations and technical spaces;
- Collective equipments: ventilation, heating system and collective hot water;
- Housings: consumptions tracking on videophones, restructured housings, heaters and sanitary systems, electricity;
- Energy consumptions monitoring before and after renovation.

Building users opinion

Various actions were led very early par the project owner and allowed tenants' expectations to be considered and to teach them about the economy savings approaches promoted by Beem Up.

Among them, as soon as late 2011: meetings, workshops, surveys among tenants, letters, renovation guide,. After the project is delivered, end of April 2014, an energy savings kit will be given to the tenants and workshops will teach them how to use their new equipments. A survey among tenants will be led at the end of 2014. Following the same approach, the contracting company put a complaint book for the tenants and a dedicated staff member is present to listen to them.

The majority of these actions, mandatory within the european project, had already been implemented by ICF Habitat Novédis. Through them, the goal for reduced consumptions can be achieved. The results of the survey will be used to elaborate models for lessors to commit toward their tenants.

See more details about this project

<https://www.construction21.org/france/data/sources/users/2766/docs/cotentinprogramrehighlightconstruction21.pptx>

Stakeholders

Stakeholders

Function : Contractor

ICF Habitat Novedis

Function : Designer

Cabinet Georges Roux Architectes, Dominique Le Ferrand

Function : Other consultancy agency

COTEC

Function : Construction company

Brezillon

Function : Manufacturer

BASF

guillaume.dethan@basf.com

<http://construction.basf.com>

Function : Manufacturer

BIOFLUIDES ENVIRONNEMENT

contact@biofluides.com

<http://www.biofluides.com>

Type of market

Realization

Energy

Energy consumption

Primary energy need : 41,00 kWhep/m².an

Primary energy need for standard building : 130,00 kWhep/m².an

Calculation method : RT 2005

Breakdown for energy consumption : Project data in kWh ep / m² SHON / year:

- Heating 13.17 gas heating
- Hot Water 27.90 ECS gas minus the heat recovery ERS system biofluids 10.00
- Ventilation electricity 2.60
- Auxiliary electricity 0.48
- Lighting electricity 6.05

Initial consumption : 205,00 kWhep/m².an

Real final energy consumption

Final Energy : 44,62 kWhep/m².an

Envelope performance

Envelope U-Value : 0,53 W.m⁻².K⁻¹

More information :

Initial Ubat = 2.124 Current part, 18cm NEOPOR, polystyrene foamed graphite, are installed. Level balconies, 5cm SL-DP, isolating a base silica airtel.

More information

Within the Beem'Up project, the verification of energy efficiency targets is planned by measuring consumptions over one year through the center of technological resources NOBATEK. ICF Habitat Novédis also provides monitoring of consumption of the residence over the long term to optimize its usages, maintenance and check up. For this purpose, the building and equipments are equipped with Siemens sensors monitored by their intelligent control system Synco Living. The first results are expected by the end of 2014.

Renewables & systems

Systems

Heating system :

- Condensing gas boiler
- Water radiator

Hot water system :

- Condensing gas boiler
- Heat pump

Cooling system :

- No cooling system

Ventilation system :

- Humidity sensitive Air Handling Unit (Hygro B)



Renewable systems :

- Other, specify

Renewable energy production : 20,00 %

Environment

Urban environment

Land plot area : 1 228,00 m²

The entire property is located in the 15th arrondissement of Paris, a 7-minute walk from Montparnasse train station and 5 minutes from the metro station "Volunteers" (Line RATP n° 12 - Aubervilliers / Mairie d'Issy). The area enjoys all types of businesses and various public services (Post Office, schools, etc...). The building is built on the corner of two streets and has an input on each. The plot is subject to a servitude of passage through a porch, allowing entry on a courtyard (Parcel 31 CM) where a building is located for professional or commercial use.

Building property on the edge of street: alignment with the street is preserved

Urban right of preemption (DPU): simple.

Local Development Plan of Paris: Urban A General Area

Nature of public utility servitudes: Protection perimeter of historic monuments, ancient quarries zones, monitored and controlled zone against termites, area at risk for lead exposure, Enhancement of vegetation.

Products

Product

Biofluids ERS Energy Recycling System

Biofluides

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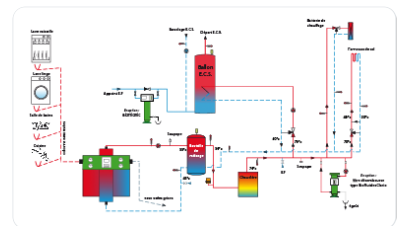
<http://biofluides.com/ers.php>

Product category :

Noting that a large amount of heat was released directly to sewers, biofluids Environment created the Energy Recycling System ERS ®. This pool of heat, hitherto untapped, is now captured and used again to produce hot water for sanitary applications, heating or industrial processes.

System operating day and night and not dependent on the climate, it perfectly makes the need for hot water match with the available pool of heat.

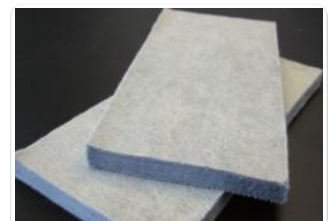
The E. R. S. ® benefits from the Title V as a system and already provides thirty sites in hot water supply. Efficient, reliable, compact, E. R. S. ® meets the RT 2012 requirements and allows energy savings of 30-70% compared to regulatory consumption.



NEOPOR

Product category :

Neopor Â® is used for thermal insulation of exterior renovation project BEEM UP. The expandable polystyrene (EPS) has been created in the laboratories of BASF in 1951. This material that has become common nowadays, was improved by BASF to turn into Neopor Â®. This new material for modern insulation systems expands in the same manner as Styrofoam Â® (trademark of BASF conventional EPS) then turns into plates and moldings. The difference is visible to the naked eye: graphite is added to the raw material, which gives Neopor Â® a silvery gray color. The graphite absorbs and reflects a part of the thermal radiation up to 20% and improves the insulation capacity of the PSE compared to that of the conventional white EPS, a density equal. The various insulation systems outside (ITE) including Neopor Â® are mostly foamed plates covered with a mesh and plaster. IMPROVED thermal insulation: the lambda thermal conductivity of 0.032 W / mK and superior insulating



power of 20% than traditional white EPS guarantee a thin insulating layer in favor of floor space (ideal for renovation). The thermal performance of Neopor meet the criteria of current thermal regulations and futures. Mise in 'PIECE on easy site: economy of material, fast installation and easy thanks to low weight of the material, hot wire cutters for a net decrease of dust and waste, 'Neopor Å® also offers a real warranty of quality and efficiency. All the products use subject to official controls and obtained the certifications Acermi, CSTBat are integrated in DTU or have a technical review.

BASF

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<http://construction.basf.com>

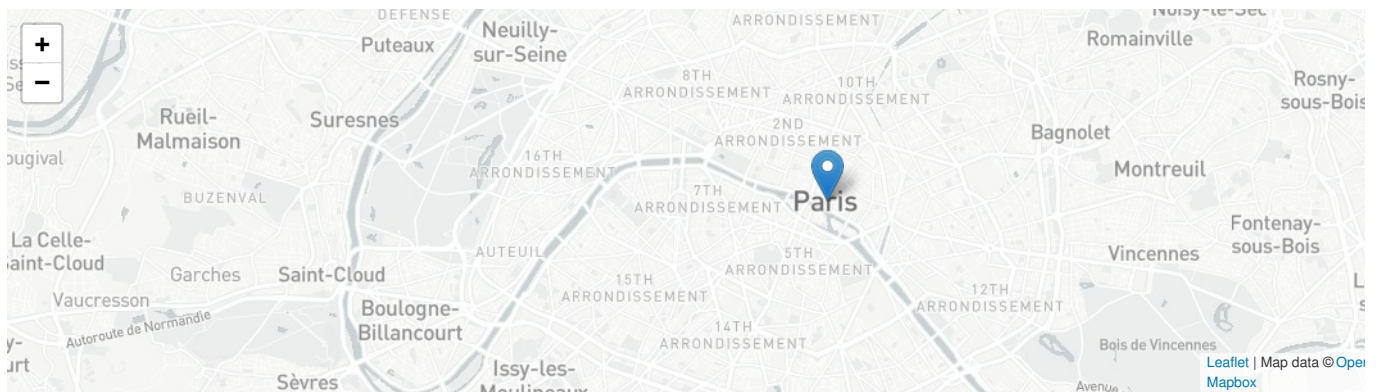
Product category : Second œuvre / Cloisons, isolation



Contest



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