

Co-ownership Le Rhodanien

by HELOISE POSS / 2021-02-16 16:52:09 / France / 3143 / FR



Renovation

Primary energy need :

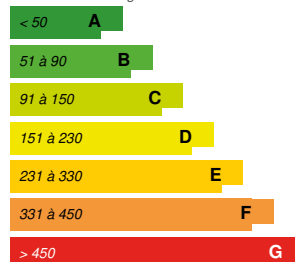
99 kWhep/m².an

(Calculation method : Other)

ENERGY CONSUMPTION

Economical building

Building



Energy-intensive building

Building Type : Collective housing < 50m
Construction Year : 1970
Delivery year : 2015
Address 1 - street : 72-84 Cours Charlemagne 69002 LYON, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 7 200 m² SHON
Construction/refurbishment cost : 400 000 €
Cost/m2 : 55.56 €/m²

Proposed by :



General information

The renovation of a successful Lyon co-ownership.

Built in the 1970s, the "Le Rhodanien" condominium in Lyon 2^e comprises 96 homes and shops. It sought to optimise the combination of proven solutions, such as external EPS insulation combined with a gas condensation system, to achieve energy savings of almost 35%.

Anticipating and planning to achieve performance

In addition to work on the building envelope, discussions are underway with the VINTECH engineering firm on the oil-fired boiler room in order to plan an investment plan and achieve high performance levels in the medium term, via the heating network or natural gas. The Trade Union Council and Antonio de OLIVEIRA, manager of the condominium, first raised awareness among the occupants and then accompanied the future actors of energy sobriety to implement complete insulation work on the exterior of the building envelope in early 2014.

The initial installation consisted of three oil-fired boilers over 30 years old, located in the basement (one of which was out of service) and provided only heating for the building via radiators and radiant floors in the flats. Hot water was provided by individual electric water tanks in each dwelling.

Controlling costs and usage

While the delivery of the ITE works was scheduled for June 2015, the drilling of the 50,000-litre single-wall oil tank precipitated the renovation of the boiler room in April 2014.

In order to minimise the financial impact of the work for the co-ownership, ENGIE - Entreprises & Collectivités proposed a global energy performance offer including a "turnkey" renovation, the financing of the work and an energy improvement commitment of 19% from the first year, then a revision of the commitment after the ITE work was completed.

In order to carry out this exemplary operation, it was essential to strengthen the collaboration of all the players, right from the design stage. The requirements of the co-ownership were relayed and the teams from GRDF, THERMOFUEL and ENGIE - Entreprises & Collectivités worked across the board, from design to operation and implementation.

In 2015, the first energy consumption report was very conclusive, with the condominium achieving 35% energy savings on its heating consumption.

New boiler room: priority to condensation

The choice was finally made to combine two all-stainless steel natural gas condensing boilers (VARMAX Atlantic Guillot model with a 10-year guarantee), with a total output of two 450kW units, to supply a low-temperature circuit serving underfloor heating and some radiators with a water temperature of 40/30°C. As a back-up, the burner of one of the oil-fired boilers was replaced by a low-temperature natural gas boiler of 870 kW. This means that the heating distribution temperatures are low to allow for optimised condensation by means of an integrated automatic control system.

Before the boiler room could be renovated, the oil-fired boilers had to be dismantled and disposed of in accordance with current health regulations (waste management), and the buried oil tank had to be neutralised and filled with lean concrete. The existing chimney flue was reused thanks to a lining that guarantees its watertightness and resistance to condensates. The renovation did not concern the distribution and private areas, apart from the essential de-silting and adjustment of the network flows. An ion exchange resin softener was installed in the boiler room, mainly to meet the water quality requirements of the condensing boilers.

ENGIE monitored and ensured the safety of the site, accompanied and verified the commissioning of the equipment and remains vigilant with regard to operation and maintenance in order to guarantee a performance result over 8 years.

An extremely positive result

Thanks to the reinforcement of the insulation (delivered in April 2015) and the conversion of the oil-fired boiler room to natural gas, 2015 has produced a very positive initial assessment.

Without deteriorating the comfort level of the occupants, the condominium achieved 31% energy savings on its reference heating consumption, i.e. a financial gain on the heating expenditure item of approximately 28 kEUR (P1-P2-P3 and reimbursement of work included).

With seasonal efficiencies of close to 97% with condensing boilers, this 31% saving breaks down as follows:

- 4% on production efficiency,
- 6% through condensation,
- 6% through burner modulation,
- 15% thanks to ITE insulation (although incomplete during the 2014-2015 heating season)

Translated with www.DeepL.com/Translator (free version)

Sustainable development approach of the project owner

An objective of modernization and improvement of comfort at constant loads

Testimony of Antonio DE OLIVEIRA, Director of building management:

"Once the heating needs were clearly reduced, the Union Council wanted the equipment to also be a source of comfort and reduction of costs. We therefore reasoned in overall cost of "investing more to consume less" and we wanted the players alongside us to continue to get involved in controlling consumption over time. The partners GRDF, ENGIE and THERMO FUEL partly contributed to this request. The main actors are the occupants of the condominium, who voted in December 2015 for new improvement actions by planning the repair of the insulation of the secondary distribution circuit (vertical and horizontal)."

If you had to do it again?

Joint work by the project stakeholders Testimonial from Gérard ALEU, Director of Thermo Fuel "The breakthrough tank was the trigger for a modernization that was essential given the obsolescence of heat production and the prospect of being able to guarantee occupants comfort that is always maintained by reducing energy consumption. The strong involvement of the engineering teams of THERMOFUEL and ENGIE in all meetings with the union council, the guarantee of energy savings, the valuation of the EWCs, the third-party investment of ENGIE - Companies & Communities on the works, and GRDF's participation in connection to the gas network were all key elements for the success of this operation when faced with a connection offer to a heating network."

Stakeholders

Contractor

Name : Régie des Gones

Contact : Antonio DE OLIVEIRA, Directeur Gestion de Copropriété (2015)

<https://regiedesgones.fr/>

Construction Manager

Name : ENGIE

Contact : Jérémie ELVIRA, jeremie.elvira[a]engie.com

<https://entreprises-collectivites.engie.fr/>

Stakeholders

Function : Site manager

THERMO FUEL

Gérard ALEU

<http://www.thermo-fuel.com/>

Replacement of the heating system and maintenance of equipment.

Contracting method

Lump-sum turnkey

Energy

Energy consumption

Primary energy need : 99,00 kWh_{ep}/m².an

Primary energy need for standard building : 150,00 kWh_{ep}/m².an

Calculation method : Other

CEEB : 0.0001

Breakdown for energy consumption : The primary energy consumption announced only takes into account the heating and DHW stations.

Initial consumption : 195,00 kWh_{ep}/m².an

Real final energy consumption

Final Energy : 127,00 kWh_{ef}/m².an

More information

Before the insulation and replacement of the heating systems, the building consumed 195 kWh_{EP} / m².year of heating & DHW. Its renovation has resulted in 31% energy savings.

Renewables & systems

Systems

Heating system :

- Condensing gas boiler

Hot water system :

- Condensing gas boiler

Cooling system :

- No cooling system

Ventilation system :

- compensated Air Handling Unit

Renewable systems :

- No renewable energy systems

Product

2 VARMAX condensing boilers

Atlantic GUILLOT

Marc MONTESINO

<http://www.atlantic-solutions-chaufferie.fr/>

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

These are 2 VARMAX Guillot natural gas condensing boilers, with a total power of 2 times 450kW. The two new boilers are sufficient to cover the needs of the building. The entire boiler room supplies a low temperature distribution circuit (water regime 40/30 ° C) serving the heated floors of the apartments as well as some radiators of the premises. commercial.



With seasonal yields on PCS close to 97% with condensing boilers, this saving of 31% breaks down as follows:

- 4% on the production yield,
- 6% by condensation,
- 6% by modulating the burners,
- 15% thanks to ITE insulation (although incomplete during the 2014-2015 heating season)

Burner the 870 kW

Weishaupt

Thierry GIRARD

<https://www.weishaupt.fr>

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

As a backup, the burner of one of the oil boilers was replaced by a Weishaupt natural gas burner to obtain a low-temperature boiler of 870kW. This renovated low temperature boiler is only used as a backup.

Costs

Construction and exploitation costs

Total cost of the building : 600 154 €

Subsidies : 11 700 €

Additional information on costs :

The project was carried by ENGIE through a global energy performance offer including a "turnkey" renovation, the financing of the works and a commitment to energy improvement of 19% from the first year, followed by a revision of the engagement after the finalized ITE works.

Energy bill

Forecasted energy bill/year : 14 760,00 €

Real energy cost/m² : 2.05

Real energy cost/Dwelling : 153.75

Carbon

GHG emissions

GHG in use : 22,00 KgCO₂/m²/an

Methodology used :

Carbon impact of heating and domestic hot water consumption

GHG before use : 54,00 KgCO₂ /m²

Building lifetime : 100,00 année(s)

,ie xx in use years : 2.45

Contest

Reasons for participating in the competition(s)

The renovation of this condominium, located in Lyon Confluence, focused on the installation of facade insulation from the outside and the renovation of the dilapidated fuel oil boiler room with efficient gas condensing boilers.

The occupants have gained in thermal comfort, have improved the heritage value of their building and limited their environmental impact, while reducing their energy consumption for heating and domestic hot water by more than 30%, and by maintaining a constant amount of load .

The project was carried out within the framework of a global offer including a turnkey renovation, the financing of the renovation works of the boiler room and a commitment to energy improvement over time. The performance of the installation is therefore guaranteed over time.

Building candidate in the category



Santé & Confort



Date Export : 20230310110443