Case Study

AIMING TO IMPROVE THE ENERGY EFFICIENCY OF APARTMENT BLOCKS

lowenergyapartments.eu

Les Mouliniers, Saint Etienne, France

Background

Built in 1951 this residential apartment building consists of four apartments, two of which are owner-occupied, the remaining two are rented out by one private landlord.

The building is of concrete construction and had no insulation. Heating and hot water is supplied by individual gas boilers, which vary in age. The apartments had double glazing but this was very old and had deteriorated considerably.

One of the owners has taken on the role of property manager.

Case study block pre retrofit

Motivations for retrofit

The project was instigated by the landlord who wanted to maintain the value of his properties and encourage tenants to rent the apartments.

In Saint Etienne supply of apartments far outstrips demand; so landlords need to make their apartments as attractive to rent as possible. Improving the energy rating of the EPC is one way of doing this. Demand for making energy efficiency improvements is therefore relatively high in this area.

The owner-occupiers were motivated by the potential to reduce their energy bills.

Case study block during retrofit

Results

An EPC showed the energy consumption of the building was very high: around 380 kWh/m^2 per year, with an 'F' energy rating.

As a result the following measures were recommended and installed: external wall, loft and floor insulation, a new ventilation system, replacement double glazing and upgrade of two of the older boilers to condensing versions.

It is hoped that these measures will reduce the energy consumption by an estimated 72%.

The projected savings for each measure are outlined in Table 1, overleaf.

Case study block after retrofit

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Measures installed	Details	Reasons for installation	Projected annual savings for whole block		
			Kilowatt hours (kWh)	CO_2 (t)	Fuel bill (€)
External wall insulation	Whole block	The original concrete construction of the building had no insulation, resulting in significant heat loss	29,184	2	1,999
Loft insulation	Whole block	No existing insulation	20,385	4	1,396
Floor insulation	Whole block	No existing insulation	14,142	3	968
New ventilation system	Communal	A new ventilation system will work more efficiently	11,376	2	779
Double glazing	All dwellings	Double glazing had been installed but it was old and had deteriorated	6,195	1	424
Condensing boilers	Two dwellings	All dwellings have individual gas boilers, two of which were older and less efficient	14,580	3	998
Energy efficient lighting	Communal	Traditional light bulbs in communal areas have a higher electricity demand than newer energy efficient versions	No data available	No data available	No data available

Table 1: Details and associated savings of the measures installed

Challenges

The main barriers were the lack of consistent funding and the complexities of the related administration. These challenges were overcome by assistance from LEAF partner ALEC42 who supported the owners giving them information about the subsidies and the administrative requirements.

Successes

The success of this case study was underpinned by a number of factors. In terms of engagement there were a small number of owners who talked regularly to one another and the leader is an owner who is motivated to make improvements. Thermal imaging was carried out which gave the owners more precise information in addition to the EPC. The owners have an average income which meant that they could afford to contribute towards the measures. However, they also benefited from subsidies which no longer exist. The owners received support from ALEC42, an independent third party, and there was also an engineer involved in planning the works.

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