Low Energy APARTMENT FUTURES

Case Study

ENERGIAKLUB CLIMATE POLICY INSTITUTE APPLIED COMMUNICATIONS

AIMING TO IMPROVE THE ENERGY EFFICIENCY OF APARTMENT BLOCKS

lowenergyapartments.eu

Dolgozó 2, Budapest, Hungary

Background

This multi-storey residential building situated in Budapest was built in 1966. The building has 36 dwellings, all of which are under private ownership. The building's communal areas are owned by a housing association.

The building is constructed of very thin concrete walls and a flat roof without insulation. The block is serviced by district heating.

In the last few years the residents decided to install thermostatic radiator valves (TRVs), to give greater control over the temperature of their rooms. They now want to take this further and try to improve the energy efficiency of the building fabric.

Case study block

Motivations

The residents decided to become involved in the LEAF project to find technical and financial solutions to improve the efficiency of their building. The main reasons for this were high energy bills and a lack of information about the possible measures and associated savings.

A survey carried out with the residents highlighted a willingness to improve comfort. They also explained that damp and mildew had appeared after the renovation of heating system. Residents were also very interested in possible financial state support.

Energy assessors visiting the block

Results

The EPC showed that the building has an annual energy consumption of 275 kWh/m^2 meaning that the energy rating of the building is 'G'. Thermal images were also taken which clearly identified problems with thermal bridging.

As a result the energy efficiency measures recommended were: external wall insulation, flat roof insulation and double glazed windows.

If all of these measures were installed there would be a potential to reduce CO_2 consumption by 62%. See Table 1 for more information on the potential savings for each of these measures.

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Measures installed/ recommended	Details	Reasons for installation/ recommendation	Potential annual saving for whole block		
			Kilowatt hours (kWh)	CO_2 (t)	Fuel bill (€)
External wall insulation (recommended)	10-15cm on walls whole building	Reduce heat loss on uninsulated walls, improve the appearance and reduce the impact of thermal bridging	31,3767	67.7	13,600
Double glazed windows (recommended)	50% of the windows	Half of the windows have already been replaced. The others have thin glass and poorly insulated frames; a source of heat loss	11,1678	23.6	4,800
Flat roof insulation (recommended)	Whole building	Relatively low saving potential but ensures the continuity of the insulated surface	29,249	24.1	1,250

Table 1: Details and potential savings associated with the recommended measures

Barriers

Despite the attractive potential savings associated with these measures the residents decided to postpone the retrofit. This was largely due to the high investment costs required to install the measures and a lack of financial assistance.

At the time this project was carried out there were no financial support available in Hungary for residential buildings. Many residents are not able to finance retrofit from their own assets, and bank loans are a high risk to the owners. This was compounded by a recent trend in decreasing energy prices which reduce the potential financial savings and therefore residents' incentive.

The residents hope to be able to continue the retrofit as and when further grants become available.

Successes

The proposed measures for this case study are a good example of the high energy saving potential which could be achieved in multi-occupancy buildings in Hungary. In fact, these relatively high savings could easily be achieved with readily available technologies.

The energy survey, detailed renovation plan and financial savings calculations provided useful information to the community and helped them make an informed decision. Further, the technical documents and easy-to-understand brochures made available to residents means they can continue to progress technical and financial solutions to energy retrofit in the future.

Active communication from the association's chairman was very useful in motivating and engaging residents, and helped them to understand both the benefits and challenges of retrofit.

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