FLUTTER SHUTTER™
CASE STUDY

The installation and data analysis of Flutter Shutter™, a shutter/window system for retrofit

Client: LIVV Housing Group, Knowsley, Liverpool

THE PROJECT

In December 2021 Flutter Shutter™ successfully installed 5 properties for LIVV Housing Group. The pilot was set up to monitor the system over a 9-month period to ensure seasonal changes were also captured and reflected in the study. data analysis and a full report was carried out by Liverpool John Moores University's Low Carbon ECO Innovatory.

Properties chosen had varied structures, orientations, occupancy dynamics and Building Regulation age bands. Flutter Shutter was installed in all but one window in each property, meaning that comparable data was available for windows with and without the measure installed. Upon completion of the study/pilot the tenants/ customers were able to have the last window installed. Behavioural studies were also carried out and all tenants gave continuous feedback and answered all questionnaires on a periodic basis throughout.

THE OBJECTIVE

To smoothly retrofit a fully independent window system with an excellent permeability tightness and ventilation, coupled with a high SAP rating and low U–Values which then reflects on a post EPC. The measure is a shutter combined with a transparent, thermal, high grade roller blind which sits directly behind the shutter. This is the only shutter in the world that doubles up as a fully independent window system. It has been specifically designed to keep heat in during colder climates and heat out during warmer climates. The aesthetic nature and high quality of the product means that it is a huge incentive for retrofit. Flutter Shutter™ is also a 'Fabric First' energy measure.

The objective was to mitigate hassle for RSL's and tenants/customers by using this simple but highly effective shutter/window system which causes less disruption time for the end user and leaves them with a beautiful window feature which has comparable energy efficiency ratings to that of triple glazing.

FINANCIAL DATA

Property example:

3 bed semi detached

Approximately 15m²

Time to install:

1/2 to 1 day

Lifetime of energy measure: **30 years**

Manufacturers guarantee: **25 years**

Yearly savings upon install: **£235 PA**

Approximate cost to install

£5265

Savings over lifetime

£7050

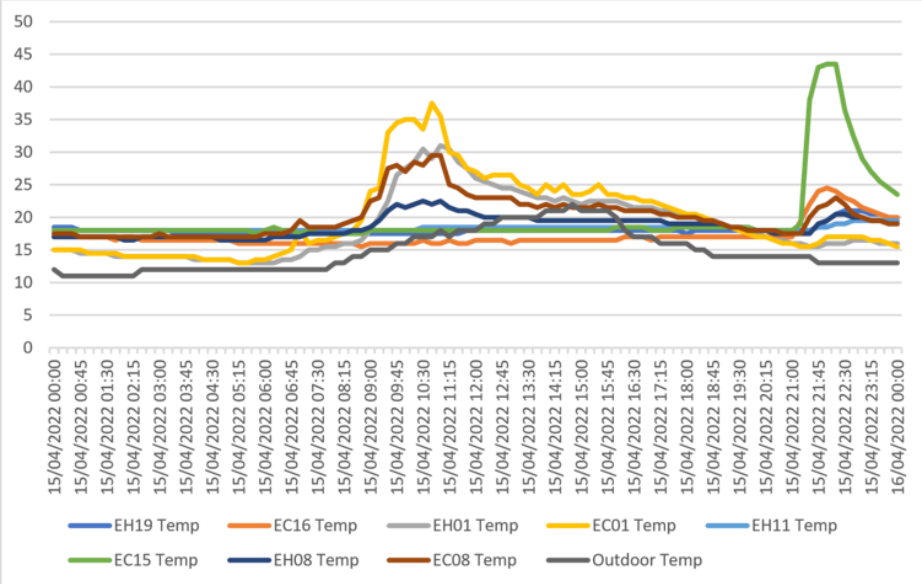
Return on investment

£1785

RESULTS

Ongoing testing from LJMU and BRE has conclusively demonstrated the benefits and savings.

'This thermal performance improvement shown in the tests was due to the installation of the Flutter Shutter™. Results showed high success rating especially during winter. The Flutter Shutter™ installation can reduce the heater temperature and reduce the usage of energy for heating.
Testing showed that the heater temperature was lower in the rooms with Flutter Shutter™ installed meaning less fuel energy being used and a steady overall temperature was kept. Tenants explained that they felt more 'comfortable' and did not have to adjust the heating or thermostat all that much throughout the day.
This chart showed a bold difference in the heater temperature and shows the heating energy conservation. Like in the first phase, there was a possibility of overheating in the living room. This was acknowledged in the AI model, which has a wider red coloured areas in the psychometric chart. This reflects in the questionnaire result that the occupants felt comfortably warm. The solution we can propose is to reduce their heating costs. Although the relative humidity in the living room (with shutter) was slightly higher than in the bedroom for both phases, the average values are very healthy. The occupants also state in the questionnaire that the humidity is just proper.'— *Results (quoted from Low Eco Innovatory Report (LJMU)*



(Steady lines indicate rooms fitted with Flutter Shutter™ and clearly show a consistent and reliable temperature, whereas the room without shows more erratic indications of a temperature needing to be regularly altered, meaning it was either too hot or too cold at any given time)

"Since having the Flutter Shutter™ fitted, we have seen a big difference in the temperatures in our bungalow. Prior to having the Flutter Shutter™ fitted we would have set the temperature to 27 °C to make the bungalow comfortable, with the Flutter Shutter™ fitted we can now set the temperature to between 20 and 21 for the same comfort. The Flutter Shutter™ will help to reduce our electricity bill, the Flutter Shutter™ also help to keep noise out and are very modern and make a big difference to the appearance of our bungalow. We cannot see anything that can better the service to customers." - *Occupant A (Customer of LIVV Housing Group)*