

Cosy Homes transformations

Retrofit for the environment at an East Oxford terrace

We recently completed an environmental retrofit for Lis and Sarah in a beautiful terrace home in East Oxford.



Motivated by the need to reduce carbon emissions, they wanted to make their home environmentally friendly and were delighted to find their home much warmer and cosier too.

In this case study, we'll tell you more about Lis and Sarah's experience and the measures they got installed in their home.

About the home

Lis and Sarah's home is a terrace in East Oxford built in the late 1800s with solid brick walls. The home was heated by a gas boiler and had a small wood stove in the downstairs living area as a means for providing warmth.

The house had little to no insulation and had trouble keeping a steady constant temperature, making it cold to live and work in.

What motivated the retrofit?

Reducing carbon emissions

Lis and Sarah were very conscious of the environment and that was their main drive to retrofit. At the same time, they have ended up with a warmer more comfortable house which will cost less to run.

Making their home more energy efficient combined with low carbon heating means they will reduce carbon emissions from their home for years to come.

Project management

The couple were keen to have Cosy Homes Oxfordshire manage the project to reduce the stress and remove potential barriers from arranging and accessing contractors themselves.

Having a Retrofit Coordinator helped managed multiple energy efficiency measures to be implemented to the home at once. Any potential issues could be resolved by our team leading a discussion with contractors, taking the pressure off Lis and Sarah while they stayed elsewhere.

Gaining expert guidance

They wanted to have expert input and guidance from their Retrofit Coordinator to consider several different measures and how they would combine and interact to fully reduce their home's carbon impact for the future. As part of the Cosy Homes service, the measures in the house received a quality assessment to make sure they performed as promised.

“The fact that Cosy Homes sourced all the contractors made the whole project possible from our point of view.”

Lis Burch, Cosy Homes client

What measures were installed?

The couple were lucky that they could move out of the house during the retrofit to allow work to develop at a faster rate as soon as the house had been cleared.

In a house during a retrofit is possible, but contractors will need to work around you to minimise disruption.

Their retrofit measures included:

- | A new Solar PV array
- | Replacing windows with triple glazed where needed, especially older sash windows
- | Air source heat pump
- | Internal wall wood fibre insulation (IWI)
- | Cavity Wall Insulation (CWI)
- | Loft insulation on the main roof with a controlled ventilation system
- | Flatroof insulation on the smaller backroom of the house
- | Underfloor heating combined with insulation

Solar PV array



Internal wall insulation



Underfloor heating



Air Source Heat Pump



What impact has the retrofit made?

After the retrofit measures were installed, the Lis and Sarah could see a clear difference between parts of their home.

Initially, they were presented with a difficult decision to get rid of their wood burner, which added a nice cosy atmosphere to the home, but decided to proceed and install underfloor heating to improve the environmental credentials. The house can now be kept at a steady temperature by an air source heat pump and underfloor heating, making it cosier than ever, while reducing the home's carbon emissions as well as air pollutants from the stove.

A solar PV array on the roof was installed on the south-facing aspect to create added energy that is sent to the heat pump's thermal store.

In the loft, insulation was installed in between the joists with aluminium spreader plates. Across the house as a whole, there's a continuous layer of insulation to prevent thermal bridging.

The home was fitted with specially made traditional timber sash windows with enhanced glazing. As the frames are made from wood they will be easily repairable in the future while maintaining beautiful the history, style and character of the home.

“Working from home and being here most of the day, I'd got used to it being really cold, but now it's just a constant pleasant temperature.”

Lis Burch, Cosy Homes client

