Ecofurb Plan

1 SAMPLE ROAD, LONDON, X17 7XX

Address of the home:	1 SAMPLE ROAD, LONDON, X17 7XX
Ecofurb reference number: XXX	
Survey date: 16/05/2024	**Ecofurb Coordinator**
Report date: 17/05/2024	hello@ecofurb.com

ECOFURB

The Low Carbon Home Service

Table of Contents

***DISCLAIMER**: This sample report **serves** only as an example of the type of information included in an Ecofurb Plan. There may be inconsistencies in the data due to using multiple sample properties.*

Section 1:

About your Ecofurb Plan

Introduction

Welcome to your Ecofurb Plan for **1 SAMPLE ROAD, LONDON, X17 7XX**.

This document looks into the energy performance of your home and lays out a clear guide to improve its efficiency, reduce energy bills and your carbon emissions.

We have produced this plan following a home assessment carried out by a Retrofit Coordinator and your completion of our online household questionnaire. The information collected is used to understand your home's current energy performance and to calculate options for improvement. This calculation incorporates your priorities and budget, to generate a range of appropriate improvements bespoke to your home.

The Summary overleaf may cover everything you need at this stage, but for reference the remainder of this Plan shows how those recommendations were reached.

How are the calculations made?

We have evaluated your current energy performance by looking at the existing thermal properties of your home, such as insulation, windows and draughts. We also assess the home's heating and lighting, and how you use your home.

Using our model, we then identified all the possible improvements that could reduce your energy bills and environmental impact. This gives us a long list of options.

How are the proposed improvements chosen?

To get to our short list of recommended measures, we test combinations of measures to find the best option for you. We chose improvements relevant to your budgets and priorities. We set out your options, packaged into phases, and included estimated costs and benefits of each stage.

What's next?

When you have read this plan, please follow the instructions that your Retrofit Coordinator has emailed you, to book your 30 minutes follow up consultation call. Your Retrofit Coordinator will talk you through the proposed improvements and answer any questions you might have.

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Plan at a Glance

Before we get to the detail, here's a summary of our key findings and recommendations.

Current performance and potential improvement

A snapshot of your home's existing performance and a glimpse of what could be achieved with our recommendations.

Annual performance	Current energy performance	Improved energy performance	Change
Carbon Emissions	2.74 tonnes of CO2	0.58 tonnes	2.15 tonnes less
Energy Bills	£2,323	£1,716	£608 less
Energy	12,794 kWh	163 kWh	12,631 kWh less
kWh/m²/year	134 kWh/m2	2 kWh/m2	132 kWh/m2 less
Energy Rating	66 D	96 A	3 bands better

Summary list of improvements

Here are the improvements we've selected in your plan for a total estimated cost of ***£31,783***.

All prices are calculated estimates and are not quotes. Estimates are calculated on the basis of the detailed measurements captured in our survey, and average market prices – which are subject to change.

- Remove secondary heaters - fixed electric	***£240***
- Low energy lighting	***£30***
- Humidity controlled kitchen extractor	***£500***
- Humidity controlled extractors per wetroom	***£1,000***
- 300mm loft insulation from unknown insulation - no access to loft	***£1,625***
- External insulation (150 mm) to pre 1900 solid walls	***£8,628***
- Install PV system where potential has been identified	***£8,760***
- ASHP (45 degree emitters) with enhanced existing radiator central heating and hot water, from A rated gas boiler	***£11,000***

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Your home and priorities

Home: Here are some of the key features, identified during the survey, and considered in our modelling for your home.

- Your home is not listed or in a conservation area.
- It is a two-storey mid-terrace house and was built around 1890.
- The kitchen was extended and a loft conversion added in 2013.
- The ground floors are a mixture of suspended timber and solid construction. The suspended timber floor has been insulated (100 mm of mineral wool assumed). Insulation could not be inspected in the solid floors, but thicknesses have been assumed based on the age of each building part.
- The original walls are of uninsulated solid brick construction. The walls of the kitchen extension also appear to be of solid brick with the same thickness.
- Insulation could not be inspected in the kitchen roof or front eaves loft space, but thicknesses have been assumed based on the age of each building part.
- The windows are double-glazed, mostly of unknown age and with trickle vents.
- There is one main heating system, an A rated gas combi boiler.
- There is also electric underfloor heating in the kitchen.

Priorities: These are the goals and areas of focus you identified in your online householder questionnaire.

- Your main priorities are improving internal comfort and reducing overheating.
- The loft conversion and kitchen are cold in winter and overheat in summer.
- You are potentially interested in a number of measures, including solid wall insulation, solar photovoltaics (PV) and an air-source heat pump (ASHP).

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Section 2:

Current performance

Let's start by looking at your home's current energy and environmental performance. This helps us focus on what can be improved.

Summary

We've looked at the annual CO_2 emissions, bills and energy use of your home – they are linked to each other but are affected differently by various improvements, so all three need to be taken into consideration.

	Current
Carbon Emissions	**2.74 tonnes**
Energy Bills*	**£2,323**
Energy	**12,794 kWh**
Energy Rating	**66 D**

Comparing the fuels you use

Here we've broken your energy usage down by the types of fuel used. You can see that the cost and environmental impact varies significantly between fuels.

	Energy use (kWh)	Tonnes CO_2	CO_2 Proportion	Energy Bills*	Energy Bills Proportion
Mains Gas	9,634	2.02	74%	£733	32%
Electricity	3,159	0.71	26%	£1,590	68%
Total	**12,794**	**2.74**		**£2,323**	

*includes any standing charges

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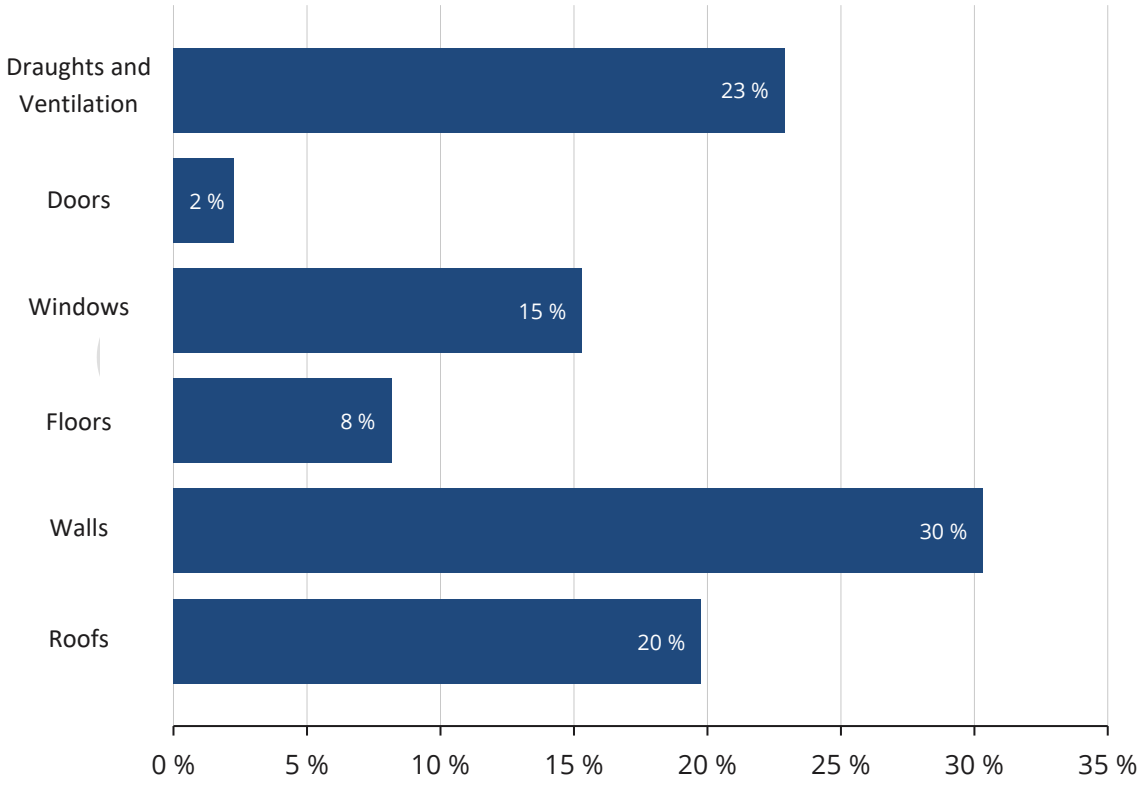
How energy is used in your home

This table shows you where the above energy ends up being used in your home.

	Energy use (kWh)	Tonnes CO_2	CO_2 Proportion	Energy Bills*	Energy Bills Proportion
Heating losses (Broken out below)	6,274	1.27	46%	£796	34%
Heating system losses	586	0.12	5%	£58	2%
Hot water	3,330	0.70	26%	£330	14%
Lights and appliances	2,604	0.64	23%	£1,140	49%
Total	**12,794**	**2.74**		**£2,320**	

Where does heat leave your home?

This table illustrates the relative heating losses of your home from physical things like walls and windows - it often contains some surprises.



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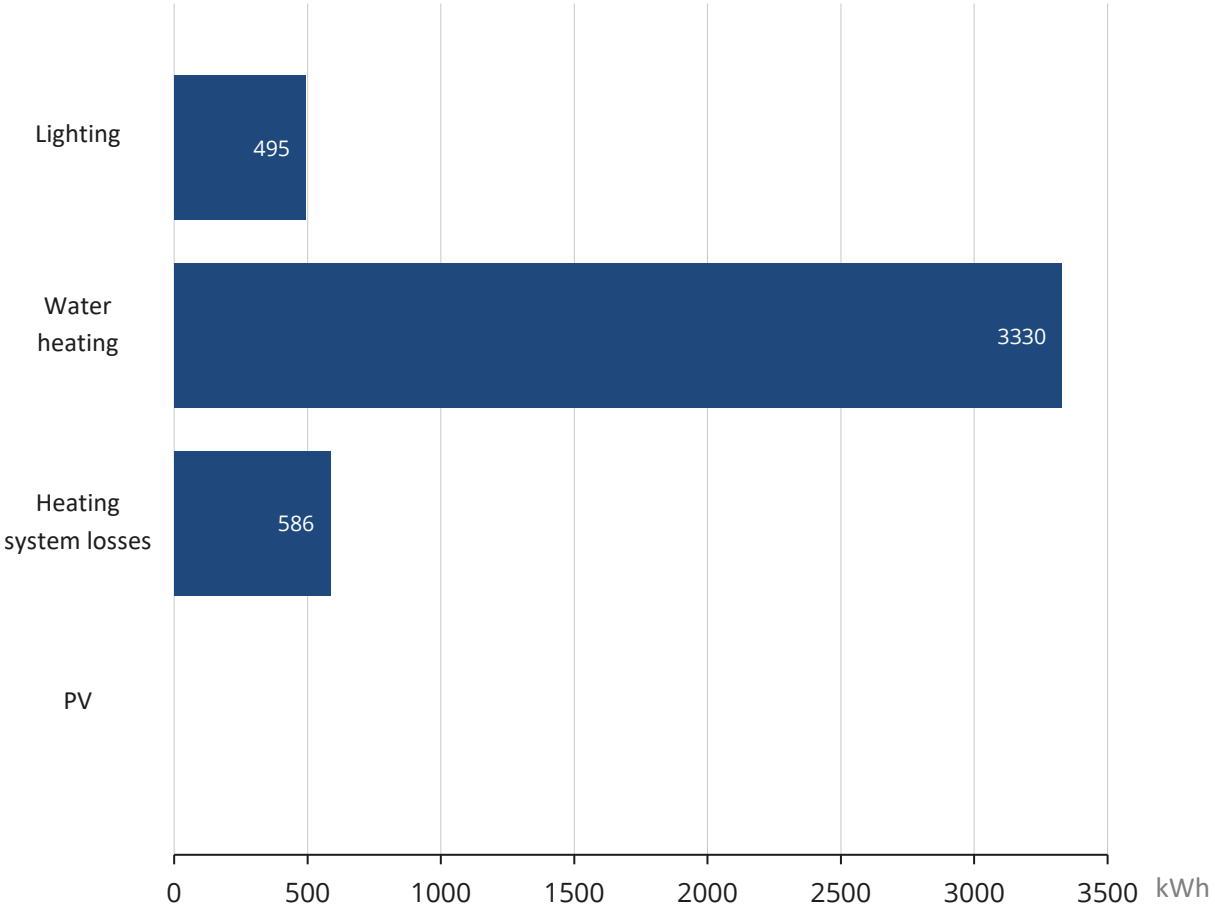
Other energy uses (and gains)

Below shows where other energy uses (and gains) occur. Heating system losses occur out the boiler flue or chimney. Some of the PV will be used in the home and some will be exported – typically around half of it.



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Section 3:

Potential improvements

Here are the improvements we've included in your plan for a total estimated cost of ***£31,783***.

All prices are calculated estimates.

- Remove secondary heaters - fixed electric	***£240***
- Low energy lighting	***£30***
- Humidity controlled kitchen extractor	***£500***
- Humidity controlled extractors per wetroom	***£1,000***
- 300mm loft insulation from unknown insulation - no access to loft	***£1,625***
- External insulation (150 mm) to pre 1900 solid walls	***£8,628***
- Install PV system where potential has been identified	***£8,760***
- ASHP (45 degree emitters) with enhanced existing radiator central heating and hot water, from A rated gas boiler	***£11,000***

Our knowledge bank has more information about typical improvements.

Phases of improvements

Home energy improvement is often a journey over time. We've structured the plan into manageable phases, ensuring a smooth and logical progression. It's usually sensible to make sure your home is well insulated before looking at the heating system.

We have estimated installation costs based on our experience with contractors for similar work. **They are not quotations.** Savings are based on typical energy prices at the time this report was made.

Improvements per phase

Before we get into more detail, here's a summary of how your home could perform following each phase of improvements.

	Energy Rating	Tonnes of CO_2	Energy Used (kWh)	Energy Bill	Estimated Cost
Current energy performance	*66 D*	*2.74 tonnes*	*12,794*	*£2,320*	-
Phase 1 improvements	71 C	2.80 (-2% lower)	12,880.47 (-1% lower)	£2,175 (6% lower)	£1,770
Phase 2 improvements	77 C	2.23 (18% lower)	9,257.45 (28% lower)	£1,970 (15% lower)	£10,250
Phase 3 improvements	96 A	0.58 (79% lower)	162.96 (99% lower)	£1,716 (26% lower)	£19,760
Total cost and savings	**96 A**	0.58 (79% lower)	162.96 (99% lower)	**£1,716** (26% lower)	**£31,783**

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Phases Cost Breakdown

Phase 1 comprises low-cost 'easy win' measures causing minimal disruption, and a ventilation upgrade;

Phase 2 includes insulation measures;

Phase 3 comprises solar panels and a low-carbon heating system.

Phase 1 improvements	Estimated Costs	Energy Rating
Remove secondary heaters - fixed electric	£240	71 C
Low energy lighting	£30	71 C
Humidity controlled kitchen extractor	£500	71 C
Humidity controlled extractors per wetroom	£1,000	71 C
Phase 1 Cost	**£1,770**	**71 C**

Phase 2 improvements	Estimated Costs	Energy Rating
300mm loft insulation from unknown insulation - no access to loft	£1,620	73 C
External insulation (150 mm) to pre 1900 solid walls	£8,630	77 C
Phase 2 Cost	**£10,250**	**77 C**

Phase 3 improvements	Estimated Costs	Energy Rating
Install PV system where potential has been identified	£8,760	93 A
ASHP (45 degree emitters) with enhanced existing radiator central heating and hot water, from A rated gas boiler	£11,000	96 A
Phase 3 Cost	**£19,760**	**96 A**

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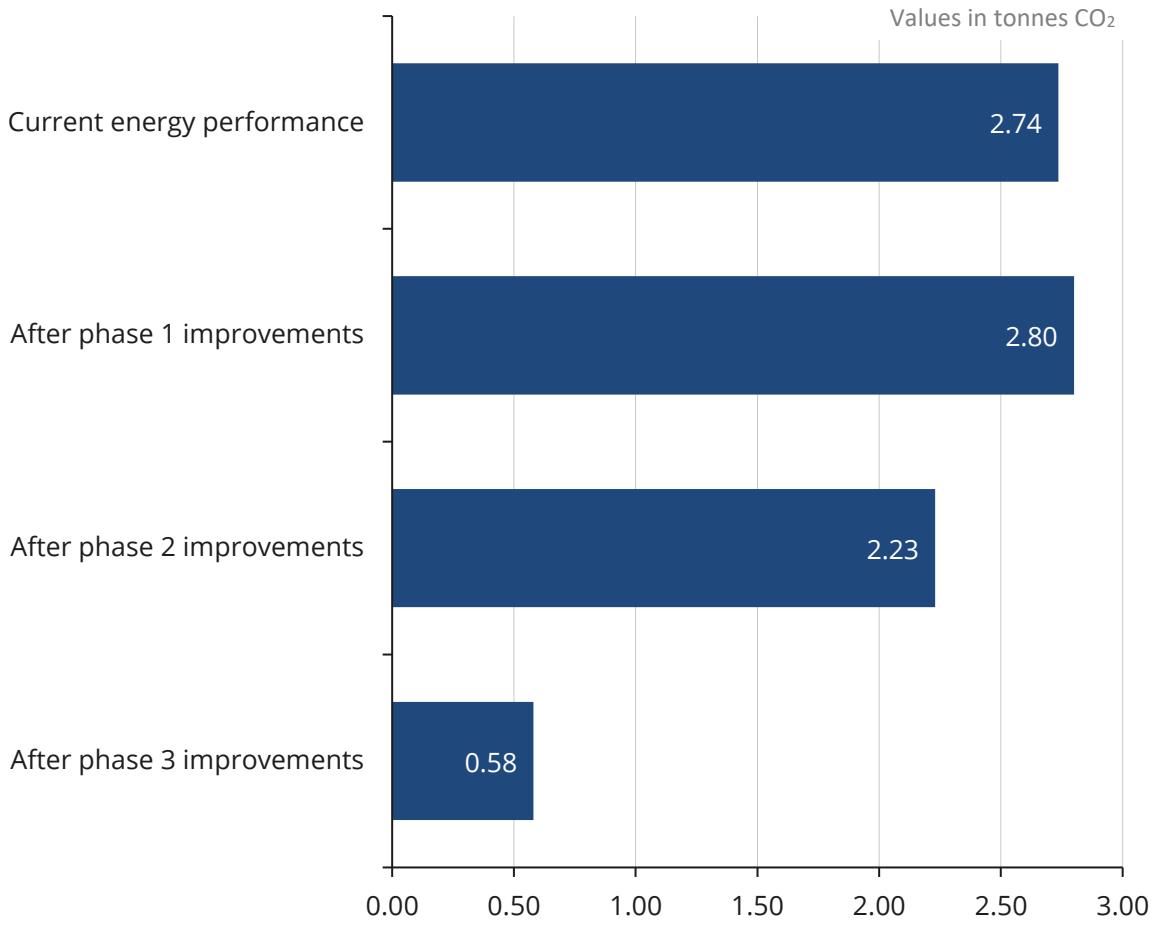
Carbon impact of your Ecofurb Plan

This graph shows the impact of the improvements we've selected on your carbon footprint. As the electricity grid continues to decarbonise with more large-scale renewables the figures will keep improving.



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How your home could perform

A closer look into what these improvements will mean across energy use, carbon emissions and your fuel bills:

	Energy use (kWh)	Tonnes CO_2	CO_2 Proportion	Energy Bills*	Energy Bills Proportion
Heating losses	3,607	0.49	35%	£1,303	38%
Free heat from outside (heat pump magic!)	-2,731	-0.37	-%	-£849	-
Hot water	2,171	0.30	21%	£784	23%
Lights and appliances	361	0.61	44%	£1,314	39%
PV used at home	-1,622	-0.22	-	-£418	-
PV exported to the grid	-1,622	-0.22	-	-£418	-
Total	-1,622	0.58		£1,716	
Your home's current performance	12,794	2.74		£2,323	

*does not include any historic Feed In Tariff revenue

Retrofit Coordinator's technical insights

General

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Condition of Property

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Retrofit principles

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Phasing

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Build quality of extensions

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Remove secondary heating

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Low-energy lighting

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Airtightness and ventilation

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Junctions and thermal bridges

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Loft insulation

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Sloping ceiling insulation

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Solid wall insulation

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Suspended timber floor insulation

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Solid floor insulation

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New windows

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Solar photovoltaics (PV)

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Air-source heat pump (ASHP)

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Costs

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Section 4:

What's next?

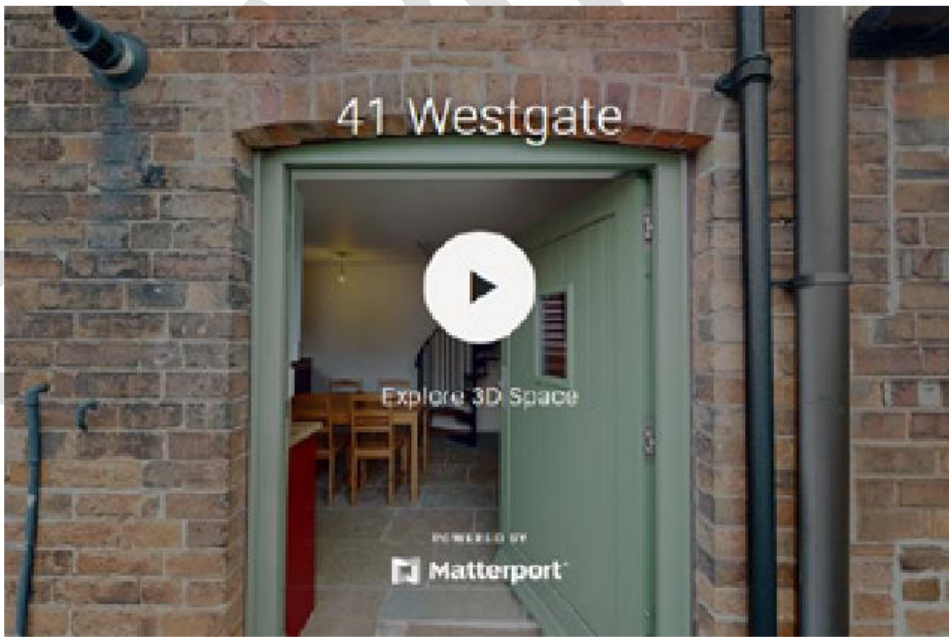
Book a follow-up call

Next step is a 30-minute phone call with your Retrofit Coordinator to discuss this report and its findings. Please book your appointment by following the instructions in the email from your Coordinator. If you have not received a booking email, please contact your Retrofit Coordinator or email hello@ecofurb.com.

Section 5:

Resources and additional information

360° tour of your home



https://vt.ehouse.co.uk/emtttqmGCXG

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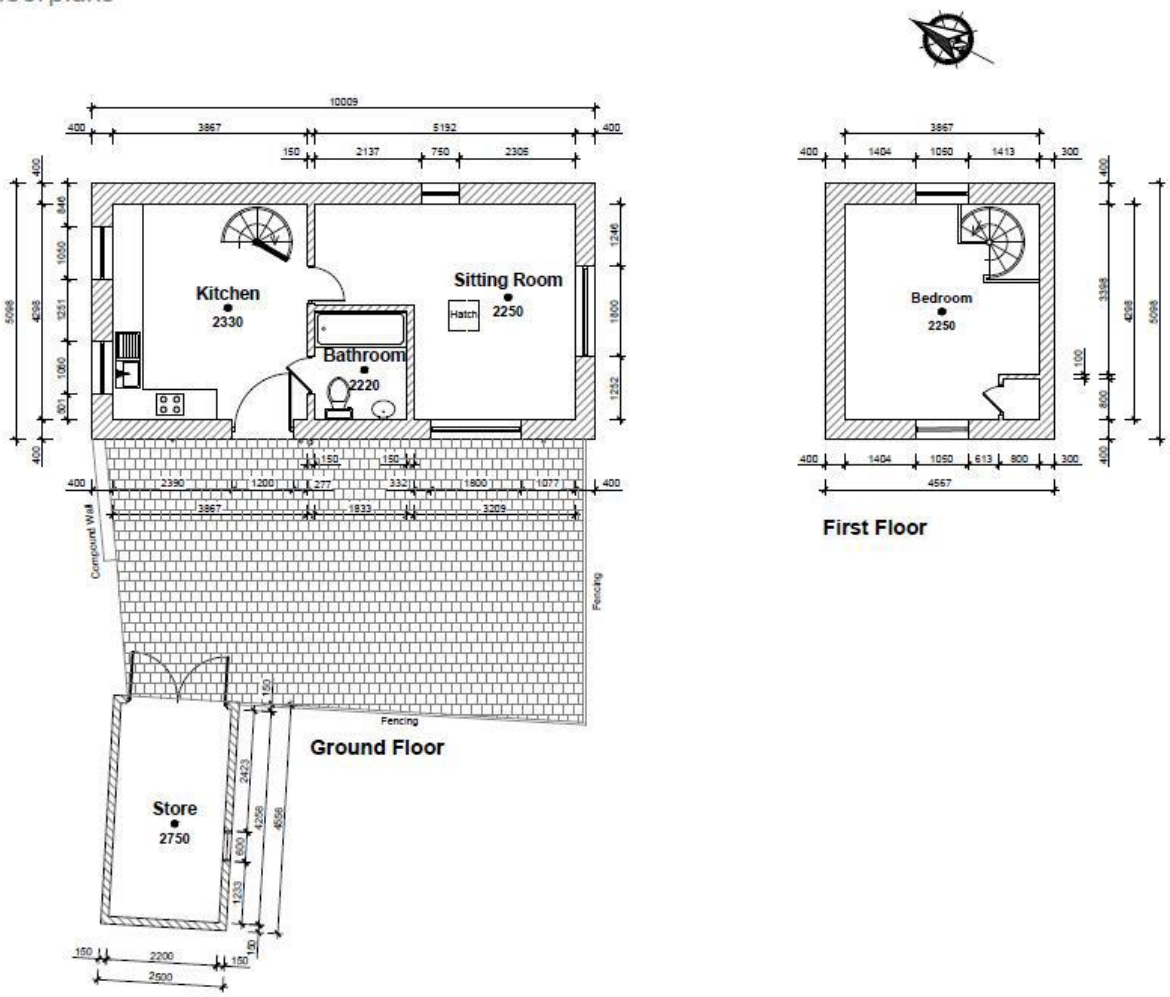
Floor plans, elevations and photography

We've utilized advanced drone technology and cutting-edge Matterport software to meticulously capture the floor plans and elevations of your property.

Note: Do not scale from these drawings. All dimensions to be checked on site.

Floorplans



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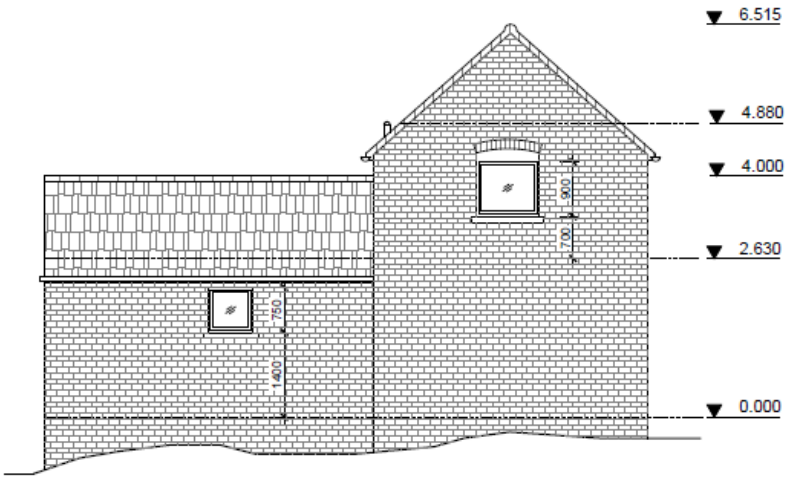
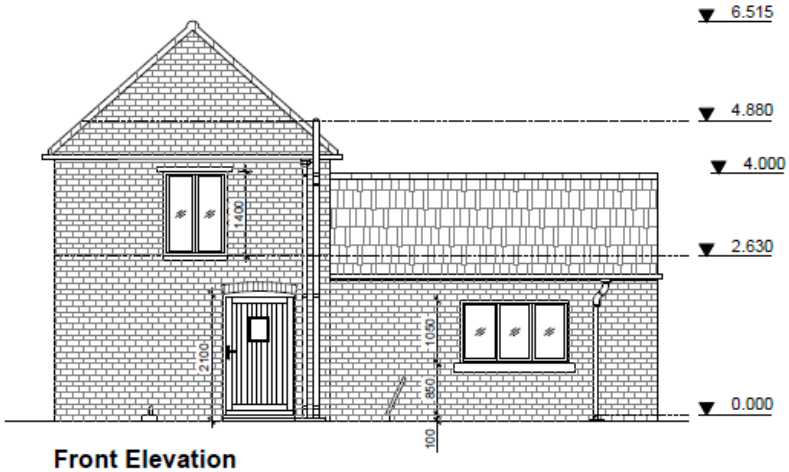
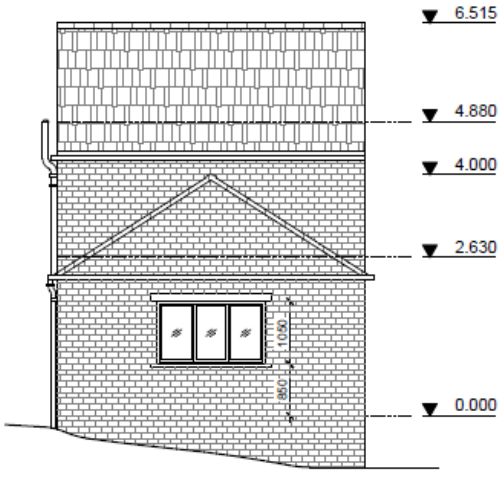
Elevations

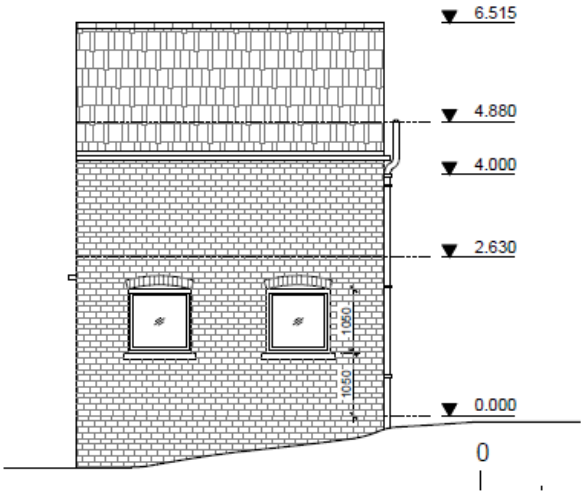


Rear Elevation



Front Elevation





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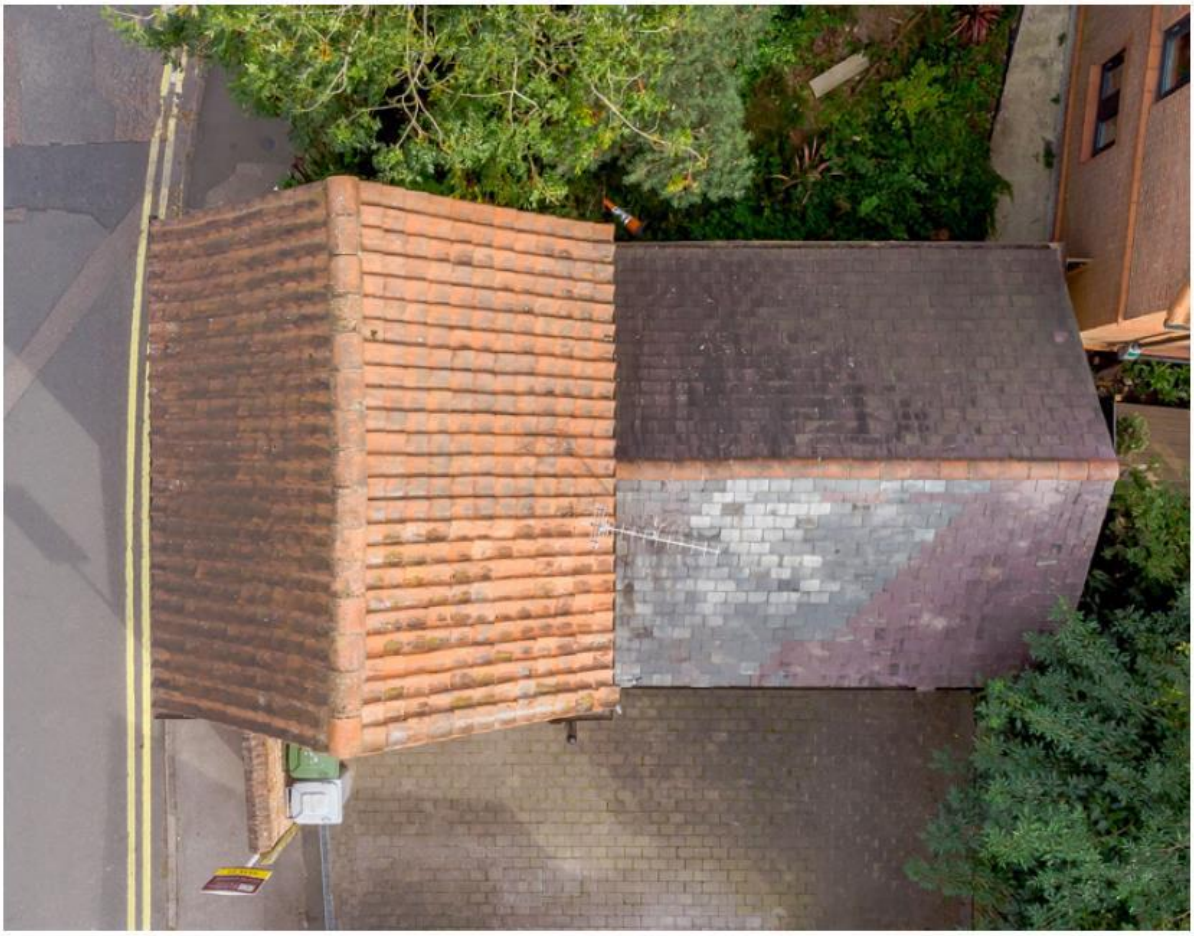
Roof Survey



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Glossary, References & Useful links

Demystifying technical jargon, the glossary offers clear explanations for terms used throughout the plan.

Glossary			
ASHP	Air source heat pump	**kWh**	Kilowatt hours
Cavity wall insulation	Insulation between the inner and outer bricks of a cavity wall	**LPG**	Liquid petroleum gas
COP / Coefficient of Performance	The notional efficency of a heat pump	**PV**	Solar photovoltaic panels
EPC	Energy Performance Certificate	**RHI**	Renewable heat incentive
EWI	External wall insulation	**Standing charge**	The daily charge you pay to have an electricity or gas connection no matter how much you use
FGHRS	Flue gas heat recovery system	**tCO_2**	tonnes of carbon dioxide
Flue	The boiler pipe that goes thorugh the wall or roof	**tCO_2**	tonnes of carbon dioxide
GSHP	Ground source heat pump	**TRV**	Thermostatic radiator valves
Infiltration	Uncontrolled air loss in a building i.e. draughts	**Ventilation**	Controlled air loss e.g. through an extractor
IWI	Internal wall insulation	**WWHRS**	Waste water heat recovery system

Useful Links
Retrofit Coordinator
UKCMB - Ventilation
STBA - Solid Wall Insulation
Trustmark - PAS 2035
OFGEM - RHI
RHI calculator
CCC - Homes for the Future
SAP – Standard Assessment Procedure

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Frequently Asked Questions

A curated list of answers to common initial questions we have about our modelling and our Ecofurb Plans.

Frequently asked questions	
How does my home compare to others?	Obtaining current statistics for an average home, especially one closely resembling a specific individual's residence, presents significant challenges. Numerous static and dynamic factors come into play, making it difficult to establish a precise and meaningful comparison.
What does 'good' look like?	While it might be tempting to respond with a simple "it varies," we prefer to offer some guidance. If you aim for an annual carbon footprint of less than 0.25 tonnes per person, particularly when your primary heating source is electricity, you can confidently consider yourself well-prepared for a Net Zero transition.
How can a heat pump be greater than 100% efficient?	While it might appear to be a form of energy magic, the truth is that a heat pump operates by concentrating available heat from the external environment, whether sourced from the air or the ground, and then transferring it into your home. Remarkably, it remains efficient even in subzero outdoor temperatures, as there is still sufficient heat available for it to work.
Where do you get your costs?	Our Retrofit Coordinators maintain ongoing communication with installers and regularly review their quotes. They keep us informed when our pricing starts to diverge from the actual market rates.
Why is it so expensive to improve my home?	There's a tendency to blame the messenger in this situation! The truth is that materials or equipment can be quite costly, and many of these measures involve substantial labour expenses.
How realistic are the costs?	Although the Retrofit Coordinator can overide our calculated cost estimates if there is anything they identify factors that would increase expense e.g. rectifying damp, in genearl the costs provied will be our figures. These should include all costs that are typically associated with an installation e.g. scaffolding for PV. However, they will exclude costs that are occasionally encountered but not typically, such as modifying drainage before applying external wall insulation or installing designer radiators with a new heating system. If you think you may want a higher specification finish, there may be more enabling works or your property may need a more bespoke solution then you should budget for some additional costs above the figures provided.
Why are the predicted current energy bills different to my actual bills?	Modelling properties and energy use is a complex business - luckily for use! Additionally there are lots of ever changing tariffs available on the market - even more so for delivered fuels like oil and LPG. We therefore model using commonly available tariffs and update them frequently.
Will the improvements increase my property value?	Certainly, energy upgrades are likely to increase your property's value through reduced utility costs, an improved EPC rating, and heightened appeal to environmentally conscious buyers. Evolving energy efficiency regulations also play a role in making an energy efficent home more marketable. Additionally, these improvements can enhance the overall comfort and livability of your home.
Are there risk associated with making energy efficenty improvements to my home?	Upgrading a home is not without risks which is why we only work with suitably qualified contractors
Is my house suitable for a heat pump?	The majority of houses can accommodate heat pumps, and although there are instances where they might not be the best choice, these scenarios are generally less frequent than commonly believed. In brief, if someone tells you that your home isn't suitable, it's advisable to challenge their judgment, especially given that the solutions have evolved to be suitable to a broader range of situations.
Why does ventilation make the energy efficiency worse?	Introducing ventilation into your home will result in the removal of some warm, occasionally moist and smelly air. While this process does have a minor energy expense, when done in a controlled way, such as with humidity control, the advantages of improved indoor air quality outweigh this cost. It is possible to offset this energy cost by implementing energy-saving measures elsewhere in your home.

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