Futureproof Your Home

HomeNotes

BE—ST

Part 1:

What is retrofit and why should you do it?

See video 1 for details

Is retrofit right for you?

Are you;

- Receiving scarily high energy bills and would rather use that money to invest in your home to reduce your home running costs?
- Fed up of living in a cold, draughty house?
- Worried about the long term issues related with living in an environment that may be detrimental to your health and well being?
- About to renovate or extend your home and want to make sure that the works you do are as energy efficient and future proof as possible?
- Living in your forever home and what to make it comfortable and affordable to run in the long term?

If you answered yes to any of these statements then investigating the process of retrofit is for you!

What is Retrofitting?

Retrofitting your home is the process of adding materials or technologies to make it more energy efficient, comfortable and resilient for the long term.

Why should you do it?

Making energy upgrades to your property can;

- transform your daily life and create a warm, safe and healthy place for you, your family and friends to share.
- give you the long term security of lower running costs and peace of mind that you aren't exposed to energy price fluctuations.

And if already upgrading your property it can ensure the investment you are making will benefit your home for many years to come.

Part 2:

4 retrofit principles you need to know

See video 2 for details

When considering your retrofit it's helpful to understand the key concepts of retrofitting your home and the different types of works they would include.

1 Keeping heat in

Reducing the loss of heat through the fabric of your building is key to a comfortable home and reduced energy bills.

You can do this through insulating your property with works such as;

- Upgrading your doors and windows to double or triple glazed.
- Insulating your walls / floors / roofs.
- Considering the position and size of glazing to contribute to passive solar through the winter months.
- When extending your home, going above the minimum insulation requirements of building regulations to make your works as energy efficient as possible.

You can also reduce heat loss by reducing air leakage and drafts with works such as;

- Draft proofing existing doors, windows and floorboards.
- Ensuring new construction works are carried out with air tightness practices

2 Ventilation

Reducing the drafts in your home means that your building will perform better, but you still need to allow controlled ventilation to ensure a healthy living environment whilst keeping the heat in.

You can ventilate your property with works such as;

1. Installing adequate bathroom and kitchen extractors to remove moisture odours.
2. Ensuring adequate background ventilation is allowed for to allow fresh air to breath and toxins to be removed.

OR

1. Installing a whole house ventilation system such as a mechanical ventilation and heat recovery unit (MVHR) which controls the ventilation in an airtight house save energy by recovering heat from the air it expels to ensure that heating your home is more efficient.

3 Keeping cool

We often think about energy loss in our homes, but overheating is also a big problem. Not only does it make our homes uncomfortable to live in, it also causes many people to mechanically cool their properties which adds to their energy requirement.

You can keep your home cool with works such as;

1. Considering glazing locations and sizes to reduce solar gain in the warmer months.
2. Reduce solar gain through glazing treatments such as additional films and glass types to reflect the heat .
3. Applying additional shading in the form of blinds, canopies or even trees.
4. Install an insulation that is good at keeping the heat out .
5. Using the right type of insulation.

4 Saving energy

Improving the efficiency of our energy usage in the home will help reduce the costs and create a comfortable living environment.

You can improve the energy efficiency of your home with works such as;

1. Install energy efficient LED lighting instead of halogen.
2. Improve the efficiency of your existing boiler by reducing the flow temperature.
3. If your boiler requires upgrading, look at installing an Air Source Heat Pump which is more efficient and can use electricity from a renewable source.
4. Install solar panels to provide additional low cost electricity.

Part 3a:

Who can help you achieve your retrofit project?

See video 3 for details

To ensure quality and safeguard any risk of unintended consequences, it is crucial to engagement professionals who are appropriated accredited and knowledgeable. Those involved in retrofit should understand the need to take a whole house approach.

Route 1: Understand the current energy performance of your home:

Find out if you have an up to date Energy Performance Certificate (EPC) or to get an updated EPC.

EPC Registers:
UK Gov - Find Energy Certificate
Energy Savings Trust - Scottish EPC Register

A registered Domestic Energy Assessor can carry out a new assessment of your home.

Route 2: Understand the condition of your home and start your retrofit journey:

A Retrofit Assessor can help you understand the condition of your building and assist with planning your retrofit journey and potential pathways to a more resilient home.

There are a number of different routes to find an assessor, from the Trustmark Register, through to cooperatives and One-Stop-Shop models*

Trustmark
Retrofitworks
SuperHomes
People Powered Retrofit
LocoHome Retrofit

*List not exhaustive

Route 3: Embark on your retrofit project... find a suitably qualified retrofit designer

For help in designing and specifying your retrofit journey and help managing the process along the way, Retrofit Architects or Designers and Retrofit Coordinators could be the right choice. Look to the registers of professional institutions and bodies such as:

AECB
PassivHaus Trust
RIBA - Find an Architect

A deeper look: PAS 2035 explained and the roles involved in retrofit

PAS 2035 is a framework to follow for the energy retrofit of domestic buildings.

It sets out best practice guidance for domestic retrofit projects and delivers a 'whole- house' approach which considers the occupants of the home, the specifics of each home and construction type, and has oversight of the whole process including assessment, design, delivery, use and evaluation.

Currently it is only mandated for publicly funded retrofit projects but it does provide a safe framework for all domestic retrofit.

It was established to resolve the problems of retrofit measures being considered in isolation which risks accidentally damaging a building's condition and energy efficiency overall. You can read more about this in the government's 'Each Home Counts' review.

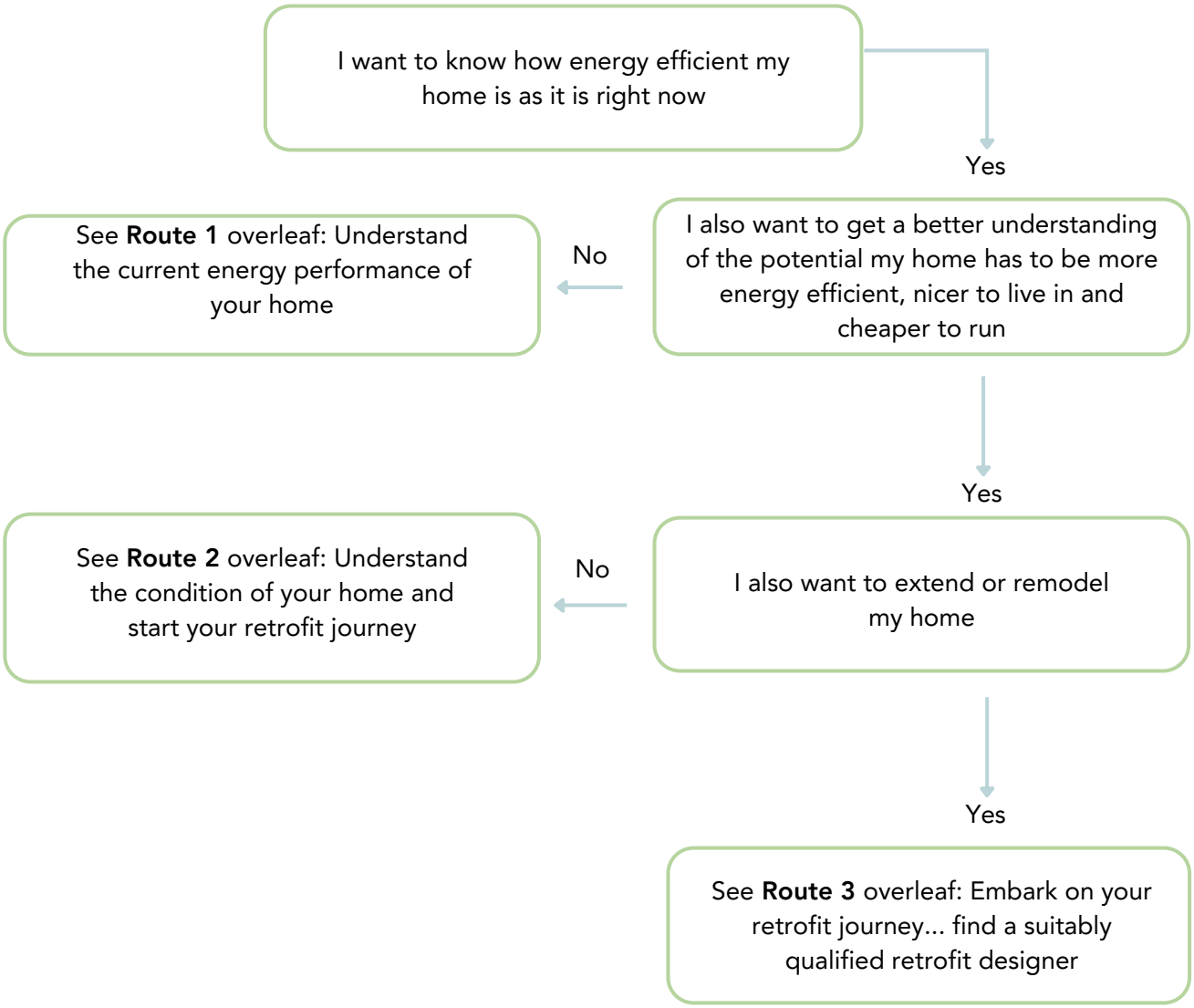
The Retrofit Roles identified in PAS 2035

- **The Retrofit Advisor** provides advice on what may work in terms of retrofit and any user guidance once the work is undertaken.
- **The Retrofit Assessor** provides an assessment of the current condition and construction of the property and how it may be improved using a range of data including surveys and visits.
- **The Retrofit Coordinator** is an end-to-end role with full responsibility for demonstrating compliance with PAS 2035. Considered the primary role as they have full oversight of both installation and handover and work alongside the installer.
- **The Retrofit Designer** develops the assessment and the retrofit strategy to provide a fully compliant retrofit design. This is also overseen by the Retrofit Coordinator to ensure that risk is managed and the retrofit assessment requirements are met.
- **The Retrofit Installer** is a contractor who installs the retrofit measures specified in accordance with PAS 2030 (the framework for installers).
- **The Retrofit Evaluator** carries out monitoring and evaluations post retrofit. This can include data gathering or can be in-depth analysis of data using a number of control monitors and in depth survey works.

The same person can perform multiple roles if suitably qualified and any conflicts of interest managed

For a successful retrofit project you will need the support of a person with knowledge and skills to help you. The best match will depend on your situation.

Which retrofit professional is right for you?



Questions to ask

- Does the assessment include an in person house visit?
- What methods will be used to assess the property? A desktop study or in-person?
- What will be included in the initial Whole House Assessment - Will they provide a 'Whole House Retrofit Plan' or similar named document to outline suitable works, energy savings and costs?
- Will the provide advice of phasing of works?
- Do they offer services to create a scope of works to allow contractors to price against?
- Do they offer services to oversee the build on site?
- Can they offer training to your contractors on site to ensure retrofit works are installed correctly?

Part 3b:

What to expect from your retrofit journey

See video 3 for details

Regardless of which retrofit professional you use for your project, the steps your retrofit process will follow will be the same. Here's what to expect;

1 Assess the property

The first step in your retrofit process is to understand your existing property. Whichever professional is helping your with your retrofit works will need to do the following;

1. Visit your property to visually assess the existing condition of your home, its condition, your current heating system and existing insulation and ventilation and a measured survey to capture the size of your home.
2. Confirm your current energy usage.
3. Ask you questions to understand how you use your home.
4. Find out the type of improvements you want to carry out and your end goals eg, Are you seeking to reduce your energy bills? Do you want to improve your comfort? Are reducing carbon emissions your main concern?

2 A Whole House Plan

Using the information gathered in Step 1, your professional will create a Whole House Plan (or similar named equivalent) which will detail all the measures you could take to make your home as energy efficient and comfortable as possible.

It will include recommendations on which measures are the most cost effective, have the most impact, and in which order the need to be carried out. This will allow you to make an informed decision on which works make sense for you to do first.

3 Design and Contracting

Once you have decided upon your preferred choice of measures to be undertaken, this needs to be translated into a scope of works and other technical information to allow a contractor to price the works just as would happen for a typical construction or renovation project.

On site

4

It's important that the work you're having done is installed correctly.

Not all contractors are up to date on the level of installation that retrofit works require to deliver the energy savings you've invested in.

If your contractor is not an Approved Retrofit Installer it is crucial that you have someone overseeing the project who understands the whole house plan, so that unintended consequences can be avoided.

This person will likely be your Retrofit Coordinator, your Retrofit Architect or an Energy Consultant working with your architect.

Futureproof Your Home

HomeNotes

Our mission at HomeNotes is for you to create the home you want, stick to your budget and enjoy the process of renovating.

Find out how you can get the most out of your renovation through our online courses, one-to-one consultations, and webinars at homenotes.co

BE—ST

BE-ST is the launchpad to a zero carbon built environment.

We bring together world-class academia, government bodies and industry at all levels to future-proof the commercial and environmental road forward for our sector. Find out more: be-st.build