



# Energy Efficient Homes

## The Retrofit Toolkit

### Sheet no 1: Fabric First

#### Planning changes to your home?

- reduce energy bills
- improve insulation
- cut carbon emissions?

We all want to live in a home that's warm and healthy for our family - somewhere comfortable throughout the year, that uses less energy to heat, and has less impact on the environment for future generations.

The climate crisis and the current world-wide crisis in energy prices are making it all the more urgent to move away from fossil fuels like gas and oil, and improve our homes for a carbon-free future based on renewable energy.

#### Fabric first!

Energy efficiency depends on improving the building to reduce heat losses.

This is how the "Fabric First" approach is described in the PAS 2035 standard (see below):

*"A 'fabric first' approach aims to reduce the heat demand of a building as much as possible and to ensure newly airtight homes are well ventilated and avoid issues with damp and humidity."*

The Centre for Alternative Technology (CAT) advises:

*"When allocating your retrofit budget, concentrate first on the building fabric, which means improving insulation, airtightness, and ventilation. This includes addressing the risks from cold bridging and thermal bypass, and how to prevent summer overheating."*

See the Designing Buildings website:

[www.designingbuildings.co.uk/wiki/Fabric\\_first](http://www.designingbuildings.co.uk/wiki/Fabric_first)

#### A Whole House Plan

- Don't do it piecemeal!
- Plan a series of integrated steps to make your home ready for Net Zero Carbon
- This way, jobs get done in the right way and right order – potentially saving money by only doing things once.

PAS 2035 defines the Whole House approach as follows: *"A 'whole house approach to retrofit' aims to ensure retrofit plans for homes consider improvements to the fabric, services and renewable energy generation in a coherent way to minimise both risks and carbon emissions."*

The Whole House retrofit approach is comprehensively set out in the *"Net Zero Carbon*



Toolkit” promoted by the West Oxfordshire, Cotswold and Forest of Dean District Councils, which we strongly recommend. It can be found at:

[www.westoxon.gov.uk/media/2ddb125k/net-zero-carbon-toolkit.pdf](http://www.westoxon.gov.uk/media/2ddb125k/net-zero-carbon-toolkit.pdf)

Other websites which describe the Whole House approach include:

<https://cat.org.uk/info-resources/free-information-service/eco-renovation/eco-retrofit>

<https://retrofitacademy.org/what-does-whole-house-retrofit-mean-to-me>

[www.trustmark.org.uk/homeowner/information-guidance/retrofit-your-home](http://www.trustmark.org.uk/homeowner/information-guidance/retrofit-your-home)

[www.yumpu.com/en/document/view/50446335/eco-retrofit-beginners-guide-superhomes](http://www.yumpu.com/en/document/view/50446335/eco-retrofit-beginners-guide-superhomes)

[www.cse.org.uk/advice/advice-and-support/low-carbon-retrofitting](http://www.cse.org.uk/advice/advice-and-support/low-carbon-retrofitting)

## From simple improvements to high standards

From DIY first steps you can move towards the best modern retrofit standards.

Examples of simple first steps are given in Information Sheets 2 and 5.

The best modern retrofit practices are set out in the PAS 2035 standard: [www.trustmark.org.uk/ourservices/pas-2035](http://www.trustmark.org.uk/ourservices/pas-2035)

The PAS 2035 standard requires you “to appoint an accredited **Retrofit Coordinator** who will take responsibility for demonstrating compliance with the PAS 2035 standard. This is a relatively new role and different projects require input from different retrofit specialists depending on the risk category. The Retrofit Coordinator identifies whether the

## Other sheets available in this series

1. Fabric First: Planning changes to your home?
2. Preparing for Retrofit: Resources on your doorstep
3. The Energy Hierarchy: The Principle behind the Whole Building Plan
4. Opportunities to Begin the Journey
5. First Retrofit Priorities
6. Insulation: Roof & Attic
7. Insulation: Walls
8. Insulation: Windows & Ventilation
9. Insulation: Floors
10. Water Efficiency
11. Heating systems
12. Lighting
13. Renewables
14. Costs & Grants

*project falls into a low, medium or high-risk category and advises on appropriate steps to minimise risk.”*

See also the Passive House Institute:  
<https://passivehouse.com>