

RISE

Retrofit information,
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Advice Pack

Understanding the fabric first approach

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www.riseretrofit.org.uk

Overview

The UK government has set an ambitious target to achieve net zero carbon emissions in the housing sector by 2050. This commitment involves transforming the way homes are built, renovated, and powered, aiming to significantly reduce the carbon footprint of the housing stock.

2050 is the long-term ambition. On the journey to that ambition, social housing providers are working towards ensuring their housing stock meets an Energy Performance Certificate (EPC) rating of band C by 2030.

To achieve this, they will need to deliver a combination of retrofit measures focussing on building fabric improvements and improvements to building services.

What is meant by a fabric first approach?

The process of thermally upgrading older buildings, is known as retrofitting. Retrofitting is a key activity in achieving net zero. There are various strategies for retrofitting, but the "fabric first" approach is the key approach recognised by the Government to support the delivery of large scale retrofit projects, and is promoted in PAS 2035

The fabric first approach focuses on improving a building's envelope, insulation, and ventilation systems to reduce energy consumption and move towards net zero emissions.

Understanding the fabric first approach


The fabric first approach to net zero retrofitting involves improving a building's energy performance primarily through modifications to its physical fabric, rather than solely relying on advanced technologies and renewable energy systems.

This approach is built on the principle of minimising energy demand first before any change to building services by enhancing the building envelope and employing passive design strategies.

What are the key principles of a fabric first approach?

The key principles of a fabric first approach are the following:

- **Optimising Insulation:** Retrofitting with a fabric first approach starts with enhancing insulation in walls, roofs, and floors. High-quality insulation



materials and techniques are used to prevent heat loss during winters and heat gain during summers.

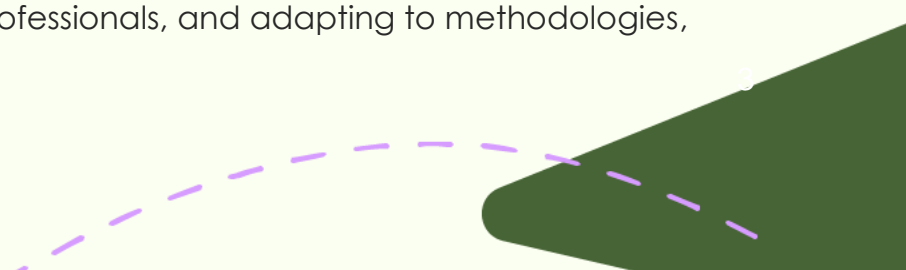
- **Reducing Thermal Bridging:** Thermal bridging occurs when heat escapes at junctions between fabric elements such as around windows and doors, or junctions between walls, between the wall and roof or between the wall and floor. The fabric first approach addresses these issues to ensure a continuous and effective thermal barrier.
- **Airtightness:** Preventing unwanted air leakage is crucial for energy efficiency. By sealing gaps, cracks, and joints, the building's airtightness is improved, reducing the need for excessive heating or cooling.
- **Passive Design Strategies:** The principles of passive design, such as optimal solar orientation, natural ventilation, and shading, are integral to a fabric first retrofit. These strategies harness natural elements to regulate temperature and lighting, minimising reliance on active systems.
- **Balanced Ventilation:** While ensuring airtightness, a fabric first retrofit also incorporates balanced ventilation systems that maintain indoor air quality without compromising energy efficiency.

What are the benefits of a fabric first approach?

- **Significant Energy Savings:** A fabric first retrofit can lead to significant energy savings by reducing the need for heating, cooling, and lighting. This not only reduces running costs, but also contributes to achieving net zero energy consumption.
- **Long-Term Impact:** A fabric first approach redefines the energy demand for the property, resulting in lasting benefits.
- **Cost-Effectiveness:** While the upfront costs of a fabric first retrofit might still be significant, the long-term operational savings on energy bills and maintenance costs often outweigh the initial investment.
- **Enhanced Comfort:** Improved insulation, airtightness, and passive design strategies enhance occupant comfort by maintaining consistent indoor temperatures and reducing draughts.
- **Reduced Carbon Emissions:** A building's energy consumption is directly linked to its carbon emissions. By significantly reducing energy demand, a fabric first retrofit contributes to lowering a building's carbon footprint.

Supply chain challenges and other considerations

Implementing a fabric first approach to retrofitting may face challenges such as initial costs, availability of skilled professionals, and adapting to methodologies,



such as PAS 2035. However, with increasing emphasis on sustainability and net zero targets, the benefits far outweigh the challenges.

Useful links

You can access additional resources to support retrofit project planning and delivery [here](#).

 www.riseretrofit.org.uk

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