RISE | Retrofit information, support & expertise

Climate aspects of PAS 2035: 2023

Supply chain advice pack

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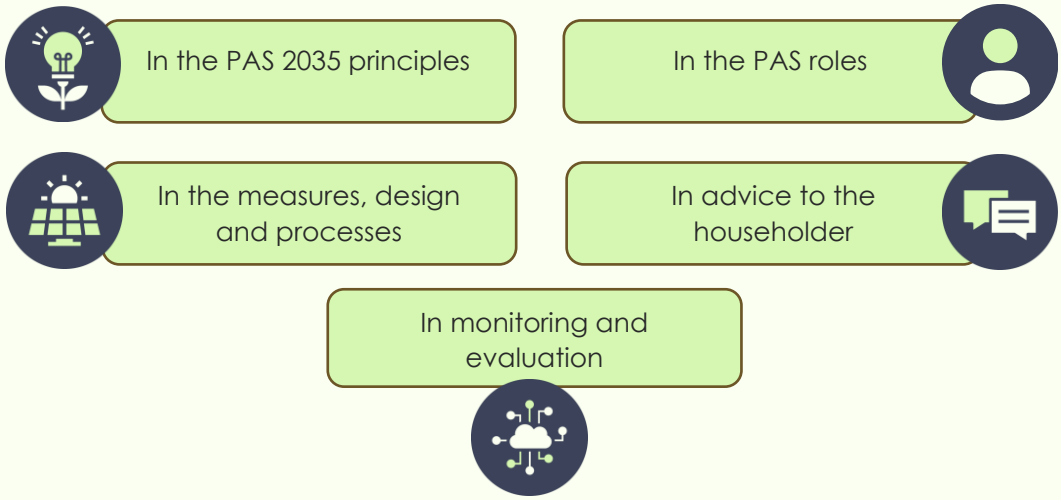
Introduction

In the context of PAS 2035:2023, climate adaptation refers to the process of adjusting buildings to actual or expected climate conditions to reduce harm or take advantage of beneficial opportunities. This includes designing and implementing retrofit measures that enhance a dwelling's resilience to risks such as overheating, flooding, and extreme weather events. The aim is to ensure that people and homes remain safe, comfortable, and efficient not only under current climate conditions but also as those conditions evolve in the future.

PAS 2035:2023 talks to climate adaptation in several ways, embedding it into the retrofit process to ensure homes are resilient to current and future climate risks. Below are the main areas where it is addressed.

The diagram below introduces how climate is considered in PAS 2035.



In the PAS 2035 principles

Climate adaptation as a core objective

In the Scope (Clause 1), PAS 2035 explicitly states that the purpose of PAS and Energy Efficiency Measures (EEMs) is to 'reduce the impact of climate change on the building and the occupant"[1]. It also states that PAS 2035 covers:

"...*climate change adaptations needed to improve the resilience of the building to existing and/or future risk from climate change*."

This means retrofit projects must consider not only energy efficiency but also how homes will perform under future climate conditions (e.g. overheating, flooding, extreme weather).

1 PAS 2035:2023

In the measures, design and processes

Design requirements for climate resilience

In Clause 8.2.21, retrofit designs must:

- Provide resilience against:
    - Rainwater ingress
    - Flooding
    - Increased future rainfall
- Include fire safety and maintenance provisions.

This ensures that energy efficiency measures (EEMs) do not compromise the building's ability to withstand climate-related stresses.

Overheating risk and passive cooling

Clause 8.2.31–8.2.32 requires that retrofit designs:

- Include measures to inhibit overheating, such as:
    - External shading
    - Secure night ventilation
    - High thermal mass exposure
    - Low-transmissivity glazing
    - Smart zoning of heat-generating spaces

- Use tools like:
    - CIBSE TM59 for overheating risk assessment
    - UKCIP tools for future climate vulnerability
    - BBSA Guide to Low Energy Shading

Medium-Term Improvement Plans

Clause 5.3 and 8.1.7 require that these plans:

- Identify climate-related risks and constraints
- Include adaptation measures as part of a staged retrofit strategy

In the PAS 2035 roles

Retrofit Assessor's Role

In clause 7.3.2, the retrofit assessor must consider:

"additional information that might have an impact, on the retrofit project now and in the future, including but not limited to environmental risks, such as noise, air pollution or flooding, and climate change-induced environmental risks, such as

increased flooding, extreme weather conditions, overheating and increased relative humidity."

Retrofit Coordinator's Role

In Clause 6.2.1, the Retrofit Coordinator must consider:

"*...improving the resilience of dwellings to existing and/or future risks from climate change*"

This includes flooding, overheating, and other environmental risks, and must be reflected in the intended outcomes of the project.

In advice to the householder

It is also a requirement of PAS 2035 to provide the household with retrofit advice. This can include climate-related areas such as clause 12.1.5:

'1) use of ventilation, heating and hot water systems, lights and appliances and their controls;

2) minimisation of overheating;

In monitoring and evaluation

Clause 13 ensures that post-retrofit performance is assessed, including whether climate adaptation goals (e.g. overheating mitigation) have been met.

Summary

PAS 2035:2023 embeds climate adaptation into the retrofit process by requiring that retrofit designs address resilience to current and future climate risks such as overheating, flooding, and extreme weather. It mandates that Retrofit Coordinators and Designers consider climate resilience as a core project outcome, using tools like CIBSE TM59 and UKCIP guidance to assess overheating risk and future vulnerability. Measures such as external shading, secure night ventilation, and flood resilience must be incorporated into designs, ensuring that homes remain safe, comfortable, and efficient in a changing climate.

Resources

Masterclass: "Understanding Climate Change for Housing Providers" available here.

Masterclasses: "PAS 2035" playlist available here.

Masterclass: "Climate resilience and social housing available" here.

Advice packs: "PAS 2035: 2023 What's new?" available here.