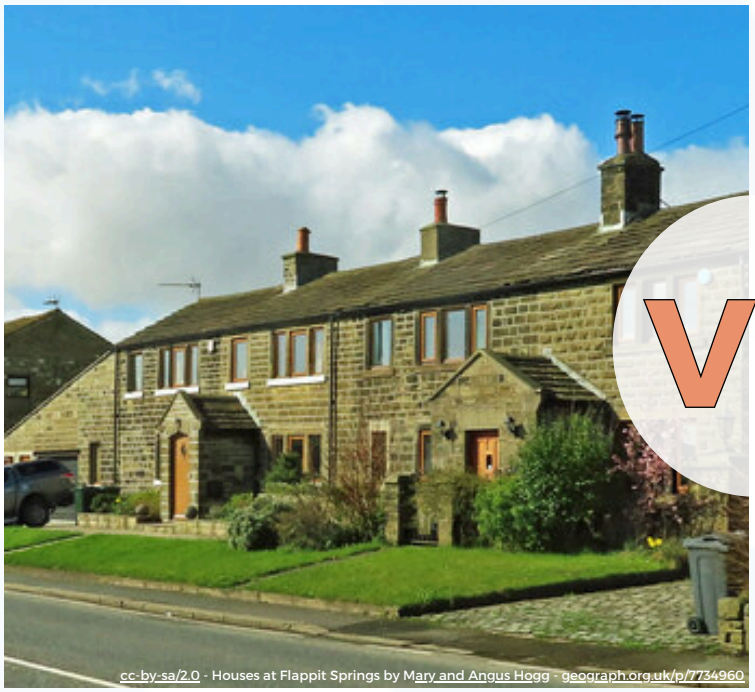
Traditional Vs Modern Building Flood Resilience Guidance



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Contents

Traditional Vs Modern Buildings

Introduction

When protecting your home against flooding, it's essential to consider various factors that can influence the effectiveness of property flood resistance and resilience measures. This booklet explores the unique characteristics of both types of homes, considering factors such as age, construction methods, and location within conservation areas or listed status. It discusses the challenges and opportunities for flood protection, highlighting the differences in flooring, insulation and structural resilience.

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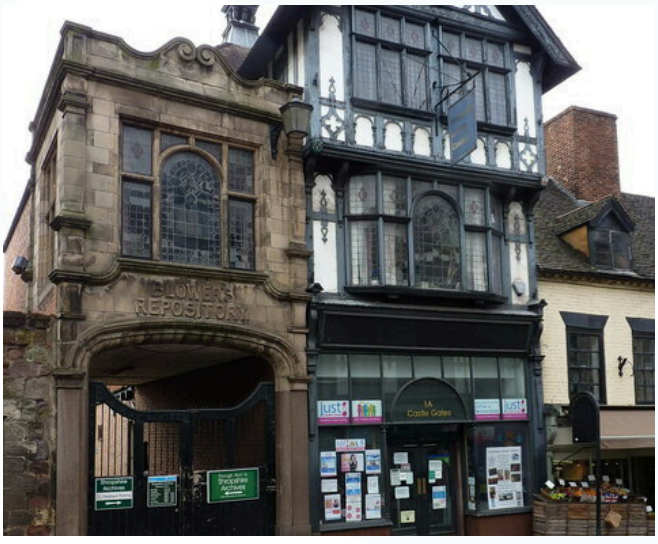
Image: The Flood Hub

Age of Properties

When protecting your home from flooding, it's important to consider the age of the property and its potential implications, such as being listed or situated in a conservation area.

Older, more traditional properties often pose greater challenges in flood protection and require different methods of protection. However, if your building is listed, you will need to consult and seek approval from your local conservation officer at your Local Authority before installing any protective measures on the property.

You can easily determine whether your property is listed by entering your postcode on the Historic England website: www.historicengland.org.uk/listing/the-list/ .



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How they are Built

Traditional buildings are often built of stone, brick or timber, with lime based renders and mortars. Lime renders allow moisture that is absorbed during a flood to evaporate through them, meaning they can be more flood resilient than modern buildings as they can deal with some short term wetting and drying. It is important that any pointing or rendering is done using a lime based plaster to enable the building to "breathe".

Image: The Flood Hub

Modern building practices began around 1919. In contrast to traditional buildings, they have cavity walls with cement mortars and renders which are used to prevent moisture percolating through. They often have suspended floors and a damp proof course to help prevent moisture rising through walls and causing damp.

Resistance and Resilience Measures for Building Structure

Using the correct materials, such as lime based mortar for repointing, is crucial on traditional buildings to ensure that it can absorb moisture and remain breathable.

On modern buildings, water resistant mortars and renders should also be used for any repointing or rendering work. Waterproof coatings may also be applied to walls up to the likely flood height (~500mm).

Many traditional buildings also have lime plaster on the walls. A benefit of this is that if the wall became damp, it can be allowed to dry out and the plaster doesn't need replacing. Lime based paints should also be used, however waterproof coatings should not, as they prevent the building from breathing. Breathable sealants can be used instead.

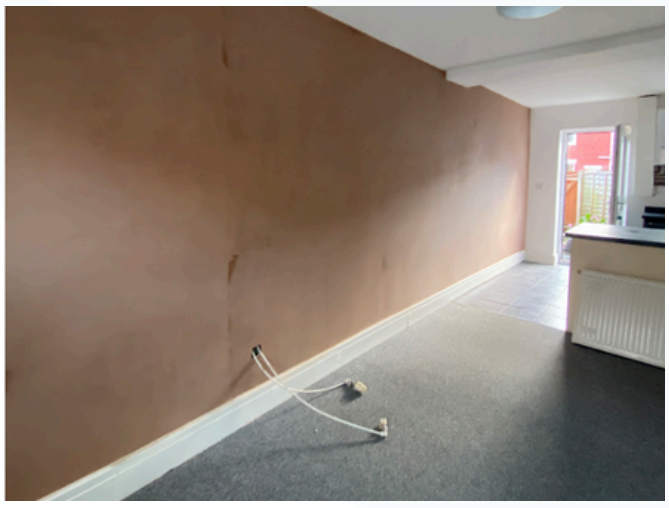

Image: The Flood Hub

On the other hand, gypsum plaster is often used on modern buildings, but it is not breathable and would need replacing if the wall was damaged by flood water. Using gypsum plasterboard and installing it horizontally will save time and money if your modern building was to flood, this is because less plaster boards would need to be replaced, unless the flood water rose over 3 or 4ft. An additional option is using water resistant, magnesium oxide boards. Lime based plaster could also be used on modern buildings instead of gypsum to improve resilience

Airbricks

Many modern buildings have air bricks which can be a potential water entry point during a flood, but permanently sealing these off could result in damp issues. Therefore air brick covers or automatic self closing air bricks may be the most appropriate solution to protect from flood water.

Image: The Flood Hub

Differences in Flooring

Older, traditional buildings generally have flagged or earth floors with water resistant or lime mortars, which have to be maintained to ensure they are in good condition. Stone flooring may just require a wash down and disinfecting after the flood water has subsided.

Modern methods of construction mean a property may have a suspended timber floor with a void beneath which could potentially be filled with water during a flood. An expensive measure to overcome this potential issue would be to replace the suspended floor with a concrete floor.

However, sump and pump systems can be used instead. They remove flood water from the property as it enters, using a submersible pump. This reduces the amount of time that water is in the property, the height of the flood water, and the consequential damage caused.

In both modern and traditional properties, using rugs is a better alternative to carpets, which are often destroyed during floods, as they can be rolled up and put away at the time of a flood.

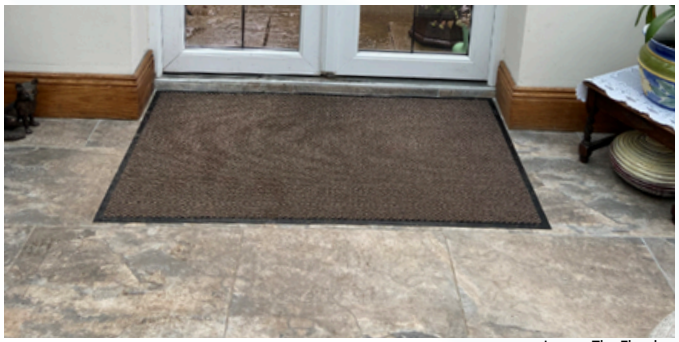

Image: The Flood Hub

Insulation

It is important to select the best insulation method for your home whilst improving your energy efficiency as much as possible. There are Building Regulations in place for this, with special exemptions and considerations for traditional buildings. It is important to choose the correct insulation type for traditional properties, as some can cause damp and condensation.

It is advised to choose an insulation type which is breathable and can dry out well to ensure any moisture from flood water causes minimal damage. Insulation media such as loose fill are breathable and porous, but they will fail and collapse if they were to become saturated with water and will be ineffective. In the aftermath of a flood, saturated insulation should be removed to allow buildings to breathe.

Alternatively, insulation that is breathable and does not absorb water should be temporarily removed after a flood event if it is preventing the water evaporating and the walls from drying out. It should be put back in place after clearing.

Summary tips for resistance and resilience in older, traditional or listed buildings

Conservation areas/ listed buildings: If your property is in a conservation area, discuss with the Local Authority to obtain permission and demonstrate the necessity of the measures to preserve the building's visual integrity.

- **Basic Maintenance:** Ensure that essential maintenance tasks such as pointing are regularly carried out to maintain the structural integrity of the building. Seal any gaps around pipes or wires entering the property.
- **Flood Barriers:** Fit temporary or permanent flood barriers, but ensure they do not compromise the architectural integrity of the building. Chanel covers can help them blend in visually. Seek advice from your local council to ensure discreet fitting and appropriate storage solutions.
- **Temporary resilience methods:** Install property flood resilience products which prevent permanently altering the building's architecture e.g. expanding flood barriers.
- **Hardwood Doors:** Replace any damaged hardwood doors with new hardwood ones, as they are water resistant compared to modern doors, and fits with the look of traditional buildings.
- **Verify Product Quality:** Ensure that any flood protection measures installed have a kitemark certificate, indicating that the product has undergone testing in a BSI facility.
- **Draught-Proof Windows and Doors:** Draught-proof windows and doors to prevent rainwater and floodwater from entering the property, enhancing overall flood resilience.

Sources used: Historic England, Cumbria Action For Sustainability and National Flood Forum