

**Planning, Sustainable Development and  
Regulatory Services**

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# **External wall insulation**

**Technical advice note**

**Guidance on the planning and  
building control requirements when  
adding external wall insulation to a  
property or renovating a solid wall in  
Oxford**



# External Wall Insulation – Technical advice note

## Oxford City Council – June 2017

### 1. Introduction and advice

#### **Purpose of this document**

This note provides guidance on the planning and building control requirements when adding external wall insulation to a property or renovating a solid wall in Oxford.

It aims to provide Oxford residents who are planning to externally insulate their property with a user friendly guide through the planning and building control process. It also acts as a standard guide for Oxford City Council staff, including planners, energy efficiency and building control officers. It will also offer guidance on external wall insulation including design and possible additional works, and give you links to websites offering more detailed guidance on issues raised.

Some properties won't require planning permission as it is "permitted development", provided the materials are of a similar appearance to those used in the construction of the house. This guide will tell you when this is the case and when it isn't.

This guidance will also help you check if you need Building Control approval and, if so, how and when to apply for this.

#### **Types of houses where external wall insulation may be appropriate**

Houses built before 1930 (and some in later years) typically have solid masonry walls meaning that cavity wall insulation cannot be applied. Some non traditional system builds (can be found primarily in Rose Hill, Blackbird Leys and Barton) may also not be appropriate for cavity wall insulation. External wall insulation is a larger construction project than cavity wall or internal insulation, which requires scaffolding and substantial changes to be made to the outside of the building.

#### **What is external wall insulation (also known as solid wall insulation?)**

External wall insulation is generally a composite system made up of a layer of insulation fixed with either mechanical fixings or adhesive to the wall and covered with a protective decorative finish of render or cladding. The finish is often designed to be similar to the wall finish prior to the works e.g. paint, pebbledash or brick slips. For the installation to be permitted development the materials used shall be of a similar appearance to those used in the construction of the exterior of the existing house.

Insulating external walls can:

- greatly reduce heat loss, saving up to 25% of fuel bills
- improve the weather proofing of the wall
- provide sound resistance
- reduce condensation and damp on internal walls when applied correctly and in appropriate circumstances

## What else should be considered to save energy before/with insulation?

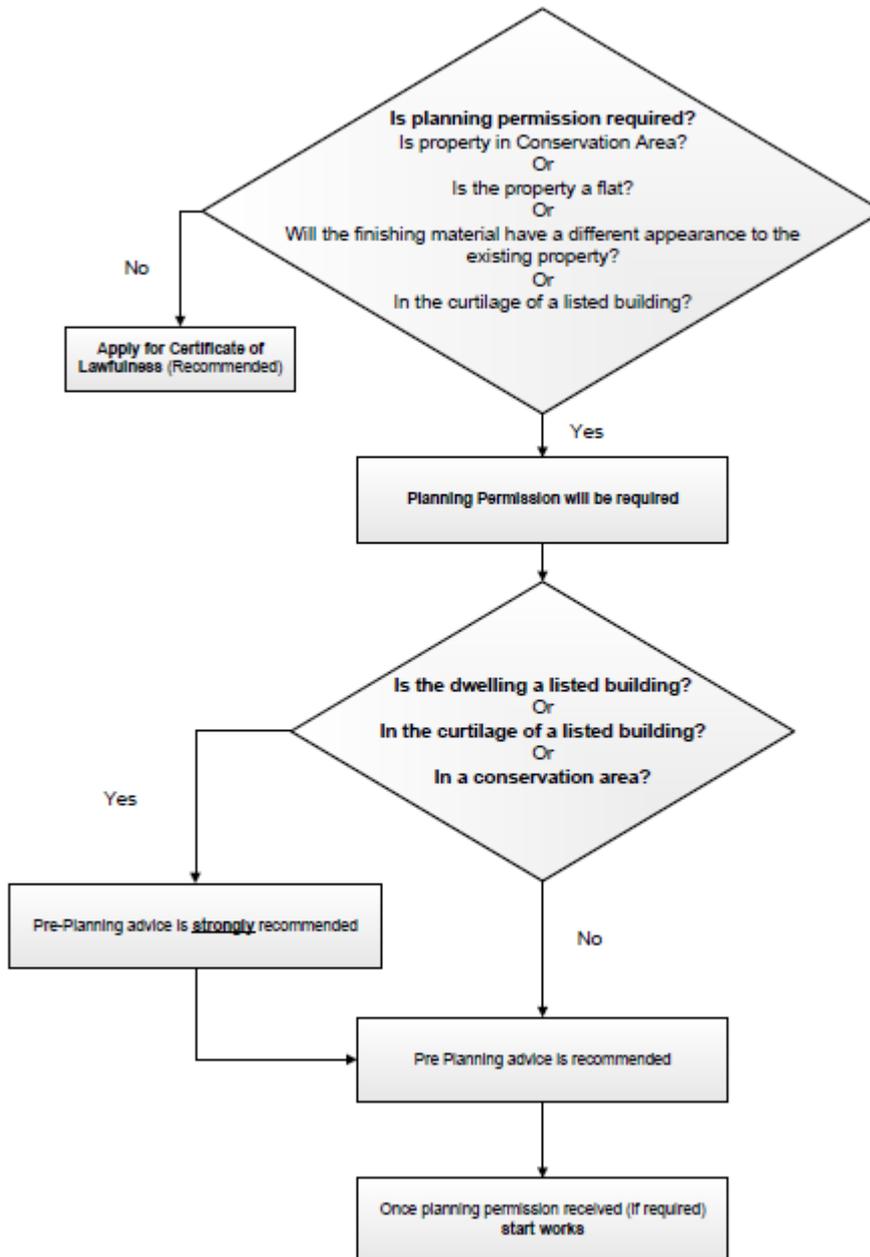
The Council encourages residents to consider the simpler, cheaper energy efficiency measures that have less impact on your home before moving to the more expensive ones like external wall insulation. One way to find out what energy efficiency measures can be carried out in your home is by getting an Energy Performance Certificate of your property – you can check if you already have one [online](#). If not, you can find someone to carry one out for you [online too](#). Recommended energy efficiency measures in these reports are roughly aligned to the table below:

Simple/cheaper measures	More expensive measures	Renewables and more technical solutions
Loft insulation (ceiling or rafters)	Replace old gas boilers with efficient condensing boilers	Solar PV panels
Install heating controls – e.g. thermostatic radiator valves	Replacement of old electric with more efficient electric heating	Solar thermal panels
Insulation to hot water tank and pipes	Solid wall insulation - external	Heat recovery systems
Water efficient taps	Solid wall insulation - internal	Biomass boilers
Chimney balloons – draught proofing	Floor insulation	Ground source heat pumps
Window/door draught proofing	Double or triple glazing	Air source heat pumps
Foil behind radiators on external walls		Heat recovery systems
Secondary glazing		

Further guidance that particularly applies if you have an older building, a building in a conservation area or a listed building is available in our [Heritage Energy Efficiency Tool \(HEET\)](#)

## 2. Planning

What falls under Permitted Development (when planning permission isn't required) and what needs planning permission?



Since January 2013, external solid wall insulation has been permitted development for single houses. These are rights for the enlargement, improvement or other alteration of a house. However, this doesn't apply to all homes so it's important that you read this section and check with the Council.

Oxford City Council has policies that support energy efficiency. However, the benefits of the insulation need to be balanced with the impact of the changed character and appearance of the property. This means not just the change in the materials but the change in the detailing

of the building, such as the relationship between façade, eaves, window reveals etc. Both the appearance of the property and the street or locality is changed as a result and this needs careful consideration.

### **What properties will definitely need planning permission?**

- Buildings in [conservation areas](#)
- Buildings within the curtilage of listed buildings
- Listed buildings where different external materials (eg brick to render) are being used
- Flats and maisonettes

Listed buildings will also require [listed building consent](#).

### **Conservation Areas**

In Conservation Areas and their curtilage (areas around them), external wall insulation cannot take place without planning permission, since this has the potential to erode the character and appearance of the area. The Council, in considering an application, will look at whether the insulation will preserve, enhance or harm the character and appearance of the conservation area.

For most properties within these areas it is unlikely that planning permission would be granted to externally insulate the front facade of the property. However depending on visibility and architectural features it may be acceptable to add external wall insulation to the side and/or rear elevations. For walls that cannot be insulated externally, it may be possible to insulate them internally, ensuring that important external features are retained on a property.

**Please check Oxford [conservation areas](#)** to find if your home is in one or close by and subject to these restrictions.

### **Listed Buildings**

If you have a listed building, listed building consent will be required. Planning permission is required where the development leads to different external materials (eg brick to render) being used. Checking our website [here](#) will help guide you through the process.

For either a listed building or a property in a conservation area, we advise you to seek [pre-application advice](#).

### **Non-listed buildings not in a conservation area**

For the works to be permitted development (not require planning permission) the materials must be of a similar appearance to those used in the construction of the exterior of the existing house. The table overleaf summarises guidance on what may or may not be judged as similar appearance from common examples.

Please note this is for guidance purposes only and the ultimate decision rests with the planning department on a case by case basis.

Existing house	Finishing material	Similar Appearance?	Requirement/Advice Check <a href="#">here</a> for costs
Brick	Brick slips	Yes (Certificate of Lawfulness advised)	Certificate of Lawfulness <sup>1</sup>
Render	Same colour render	Yes (Certificate of Lawfulness advised)	Certificate of Lawfulness
Render	Different colour render	Yes (Certificate of Lawfulness advised)	Certificate of Lawfulness
Brick	Render	No (discuss with planning department)	Planning application for alteration to single dwelling
Brick and render	Render	Yes (Certificate of Lawfulness advised)	Certificate of Lawfulness
Pebbledash	Render	Arguable (discuss with planning department)	TBC – either Certificate of Lawfulness or Planning application for alteration to single dwelling
Pebbledash	Pebbledash	Yes (Certificate of Lawfulness advised)	Certificate of Lawfulness
Textured render	Smooth render	Yes (Certificate of Lawfulness advised)	Certificate of Lawfulness
Stone	Render	No (discuss with planning department)	Planning application for alteration to single dwelling
Listed Building	Any	No (discuss with planning department) Yes (discuss with conservation team)	Planning application for alteration to single dwelling (when external materials changed) plus Listed Building permission
Dwelling in conservation area	Any	Any (discuss with planning department)	Planning application for alteration to single dwelling
Flat or maisonette	Any	Any (discuss with planning department)	Planning application for alteration to single dwelling

If you are unsure whether the finishing surface of the insulation will be deemed to be of a similar appearance then a Certificate of Lawfulness should be sought. This will provide a formal confirmation that planning permission is not required. Many householders choose to apply for a Certificate of Lawfulness to gain certainty and for use as evidence when selling the property. **If there is a change in appearance then full planning permission will be required.**

### **Planning process – what do you need to do now?!**

It is important to engage with the planning department early in your decision making process.

Seek [informal advice](#)

Seek [pre-application advice](#)

Apply for a [certificate of lawfulness](#)

Apply for [planning permission](#)

Apply for [listed building consent](#)

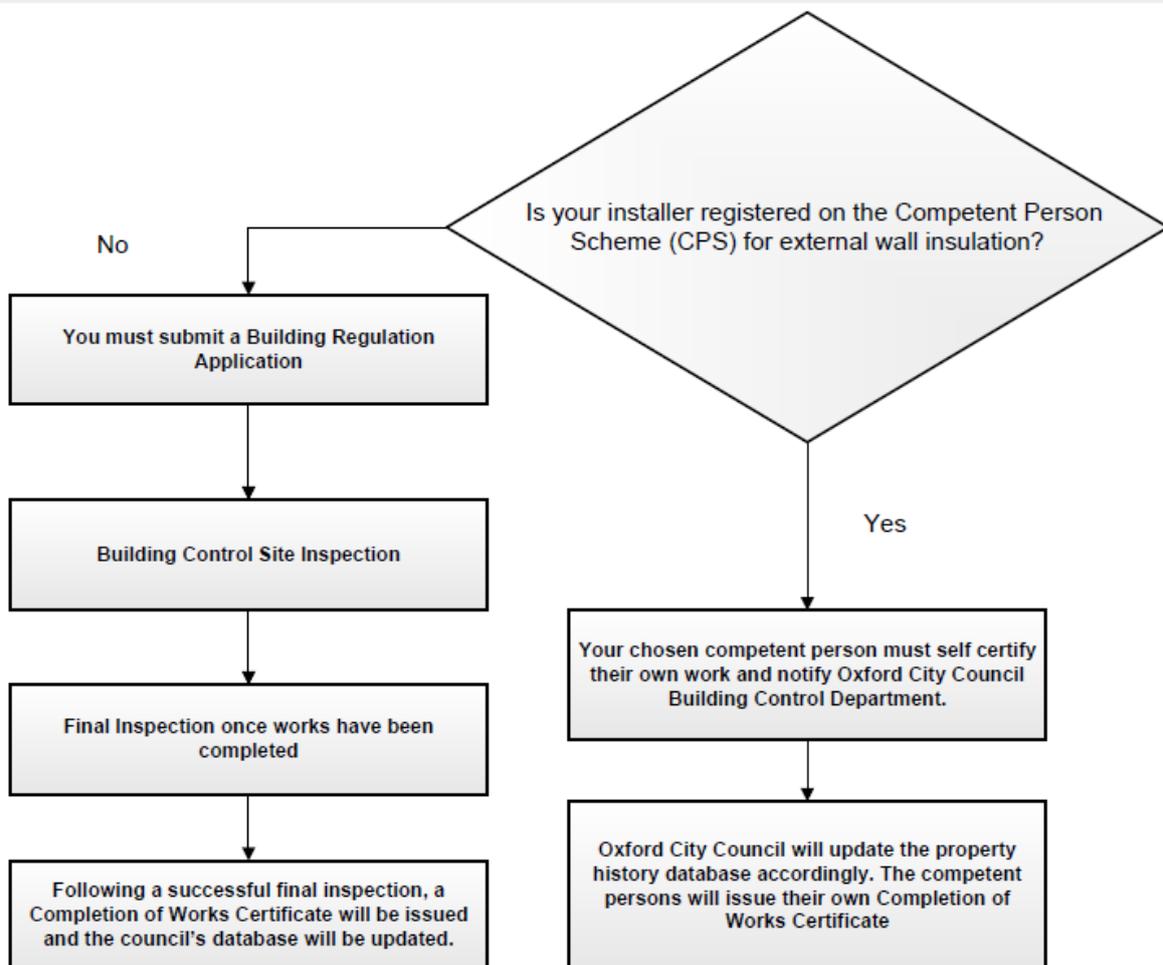
<sup>1</sup> If you want to be certain that your proposal does not require planning permission you should apply for this from the Planning Authority

### 3. Building Regulations

If you are carrying out work to more than 50% of a thermal element (i.e. floor, external wall or roof) or where more than 25% of the surface area of the building envelope undergoes renovation, Building Regulations require the installation of insulation so the improved thermal performance of that element achieves the 'U'-value stated in Table 3 Approved Document L1B.

#### Do you need to submit a Building Regulation application?

You must check if you need Building Control approval before you construct or change buildings in certain ways. You don't need to get Building Regulations approval yourself, if you [use someone registered with a competent person scheme](#). [Approved EWI competent persons schemes](#).



If you decide not to opt for the Competent Person Scheme please note, all external wall insulation installations are notifiable works for Building Control purposes. Also, whatever renovation you are undertaking to your wall, where a thermal element is subject to a renovation through undertaking an activity such as external wall insulation (EWI), the performance of the whole thermal element should be improved to achieve the required U-value of 0.30 W/m<sup>2</sup> K or greater if the property is of solid wall construction. However, this is only applicable if the renovated area is greater than 50% of the surface of the individual

thermal element or constitutes a major renovation where more than 25% of the surface area of the building envelope undergoes renovation.

### Notifiable building work not carried out under the Competent Person Scheme.

In this instance, a [Building Control application form](#) will need to be submitted by the applicant or an appointed agent on their behalf, prior to work commencing. As part of the application process you will need to describe the works to be undertaken, and should include the name and type of insulating material to be used. In addition, information should be provided whether or not the insulating material is approved by the British Board of Agreement or conforms to a British Standard specification and whether the installer is approved under PAS 2030.

Further information regarding the Building Control process and the associated fees can be found on Oxford City Council's website at [www.oxford.gov.uk/buildingcontrol](http://www.oxford.gov.uk/buildingcontrol) alternatively, telephone Oxford City Council, Building Control on 01865 252807 if you wish to discuss this process further.

### Building Regulations 2010 - Approved Document – L1B.

The Building Regulations 2010 Approved Document L1B is technical guidance which provides key technical information with regard to thermal elements. For example, with reference to a wall structure the “thermal element” refers to a wall which separates the heated part of the building from the external environment. Furthermore, the Building Regulations 2010 (Part L1B) requirement is to ensure walls achieve a specific U-value (The U-value is a measure of the flow of heat through a thermal element. As a measurement of compliance, the lower the U-value the better an insulator it is.) Please refer to Table 3 (below) and to the document for more details on what this requirement means in practice.

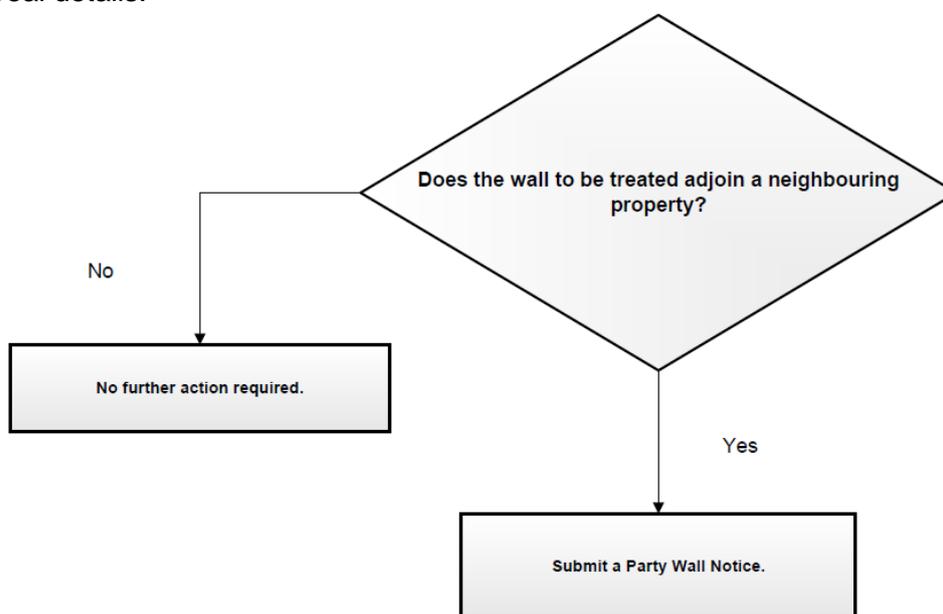
Table 3 Upgrading retained thermal elements		
Element <sup>1</sup>	(a) Threshold U-value W/(m <sup>2</sup> ·K) <sup>2</sup>	(b) Improved U-value W/(m <sup>2</sup> ·K) <sup>3</sup>
Wall –cavity insulation <sup>2</sup>	0.70	0.55
Wall – external or internal insulation <sup>3</sup>	0.70	0.30
Floor <sup>4,5</sup>	0.70	0.25
Pitched roof – insulation at ceiling level	0.35	0.16
Pitched roof – insulation between rafters <sup>6</sup>	0.35	0.18
Flat roof or roof with integral insulation <sup>7</sup>	0.35	0.18

1 'Roof' includes the roof parts of dormer windows and 'wall' includes the wall parts (cheeks) of dormer windows.  
2 This applies only in the case of a wall suitable for the installation of cavity insulation. Where this is not the case, it should be treated as 'wall – external or internal insulation'.  
3 A lesser provision may be appropriate where meeting such a standard would result in a reduction of more than 5% in the internal floor area of the room bounded by the wall.  
4 The U-value of the floor of an extension can be calculated using the exposed perimeter and floor area of the whole enlarged building.  
5 A lesser provision may be appropriate where meeting such a standard would create significant problems in relation to adjoining floor levels.  
6 A lesser provision may be appropriate where meeting such a standard would create limitations on head room. In such cases, the depth of the insulation plus any required air gap should be at least to the depth of the rafters, and the thermal performance of the chosen insulant should be such as to achieve the best practicable U-value.  
7 A lesser provision may be appropriate if there are particular problems associated with the load-bearing capacity of the frame or the upstand height.  
8 Area-weighted average values.

Source: Paragraphs 5.7 and 5.8 of [http://www.planningportal.gov.uk/uploads/br/BR\\_PDF\\_ADL1B\\_2010.pdf](http://www.planningportal.gov.uk/uploads/br/BR_PDF_ADL1B_2010.pdf)

### What else do I need to consider?

If you want to insulate a Party Wall which is the wall dividing two properties (even if it is just the end of the party wall where it joins the front elevation) a [Party Wall agreement](#) in accordance with the Party Wall Act, may be required. A Party Wall Notice should therefore be sought prior to or at the same time as submitting the Building Regulations application. A useful guide to assist you with this matter can be found [here](#). Further design implications should be considered e.g. extending boiler flues; guttering, rainwater pipes and window reveal details.



### Cases for special consideration

If the building being altered is considered in one of the classes listed below then a lesser standard may be accepted by Building Control if it is a requirement of the Conservation Team.

- Listed buildings
- Buildings in a conservation area; or
- Scheduled ancient monuments.

Three further classes of buildings where special considerations in making reasonable provision for the conservation of fuel and power may apply are:

- Buildings which are of architectural and historical interest and which are referred to as a material consideration on the Local Authority's Local List.
- Buildings which are of architectural and historical interest within national parks, areas of outstanding natural beauty (AONB), registered historic parks and gardens, registered battlefields, the curtilages of scheduled ancient monuments and world heritage sites.

- Buildings of traditional construction with permeable fabric that both absorbs and readily allows the evaporation of moisture.

When undertaking work on or in connection with a building that falls within any of the six classes listed above, the aim should be to improve energy efficiency as far as is reasonably practicable. The work should not prejudice the character of the host building or increase the risk of long-term deterioration of the building or fittings. The guidance provided by English Heritage should be taken into account when determining appropriate energy performance standards for building work in historic buildings.

## 4. – Undertaking the Works

### Design implications

To achieve the necessary thermal performance levels insulation of a thickness of approximately 50mm to 150mm will be required. The resulting increase in wall thickness will have an impact on other elements of the property e.g. window sills, boiler flues, roof overhangs and external pipe work which may need extending or relocating.

To prevent cold surfaces and condensation, insulation must be extended into window and door recessed areas. This will slightly reduce window sizes and in some cases may impact window functionality. However, this may need to be balanced with the impact on the visual character of the property, where appropriate.

The installation process is weather-dependent and consideration should be made of timings. The installation will take approximately 7 days, during which external temperatures need to be between 5 °C and 30 °C, with low rain risk. It is important that manufacturer's details of materials and installation methods are adhered to in order to ensure that insulation panels are protected from rain exposure. If confirmation cannot be provided by contractors Building Control Completion Certificates may be withheld and manufacturer's warranties placed in doubt. In addition consideration may be given to enforcement proceedings under Building Regulations.

### Additional works that may be required

To give a flavour of the level of work, the below additional works could be additions to your external wall insulation – some of these will be included in the price but you should check and get additional items costed.

- Extend gas boiler flue
- Extension of cast iron pipework per metre
- Remove existing alarms and refix, including rewire
- Remove existing light fittings and refix, including rewire
- Renew fascia & soffits & gutters complete with rain water piping
- Renew rainwater pipes
- Renew soil vent pipe when cast iron
- Remove and reinstate BT overhead cables
- Telephone cables remove reinstate
- Remove temporary fix and permanently fix satellite dishes including wiring
- Adjust soil vent pipe (UPVC)
- Adjust to drainage and gullies
- Extend window sills
- Extend overflows/condensing pipes
- Extend external tap
- Remove redundant services
- Alterations around gas/electric meter boxes, fireman switches, door entry
- Cut back and remove trees/bushes/vegetation on substrate
- Remove and refit wall mounted guards
- Remove and refit signs
- Renew airbricks to suit new insulation
- Remove and reinstate hanging baskets, signs etc
- Adjusting attached gates to suit External wall insulation

- Adjusting attached brick wall to suit new external wall insulation
- External gas pipe alterations - per linear metre
- Renew GRP (glass-reinforced plastic) flat top single door canopy.
- Renew electrical or gas meter box
- Repair defective render for external wall insulation - per square metre

### **Workmanship**

The addition of wall insulation should be undertaken by a qualified contractor. Householders should check that the insulation system they are using either has a British Board of Agreement (BBA) certification or European Technical Approval (ETA).

If the work is to be conducted via Green Deal or the Energy Companies Obligation (ECO) then the installer will need to carry the Green Deal Mark (PAS 2030 certification) to demonstrate they comply with the Green Deal standards. To gain ECO funding the insulation will need to be accompanied by a SWIGA (Solid Wall Insulation Guarantee Agency) or equivalent guarantee, or if the property is more than four storeys high then Building control and clerk-of-works sign off will be needed.

### **What difference does external wall insulation make?**

Below is an example of the change to properties before and after external wall insulation in the Barton area of the city:



**Before**



**After**

### **What products are best for older buildings?**

Traditional solid walled buildings are often referred to as 'breathing' structures, meaning that they exchange moisture readily with the indoor and outdoor environment. Where insulation is introduced it is important that this breathing performance is taken fully into consideration. If it isn't, it can exacerbate existing problems or cause damp and condensation problems.

Useful materials for the external insulation itself include:

- Hemp-lime composites
- Mineral wool
- Wood fibre panels

All these insulation materials need to be protected from both the weather and mechanical damage, although to differing degrees. Suitable moisture-permeable finishes include:

- Lime renders
- Rain-screen cladding (tile hanging etc.) with lapped joints

Materials which can be used as a single coat are available, such as insulating lime renders containing expanded vermiculite, but these tend to give significantly lower insulating values. They can, however, sometimes be applied in circumstances where other options aren't feasible.

You can find a guide to some conservation friendly insulation products [here](#).

## **Further guidance**

[Heritage Energy Efficiency Tool \(HEET\)](#)

[A Bristolian's guide to Solid Wall insulation](#)

Historic England – [Insulating Solid Walls](#)

Sustainable Traditional Buildings Association – [responsible retrofit guidance](#)

[Breathable insulation materials directory](#)