Building Regulations – advice for potential energy efficiency works in your historic home

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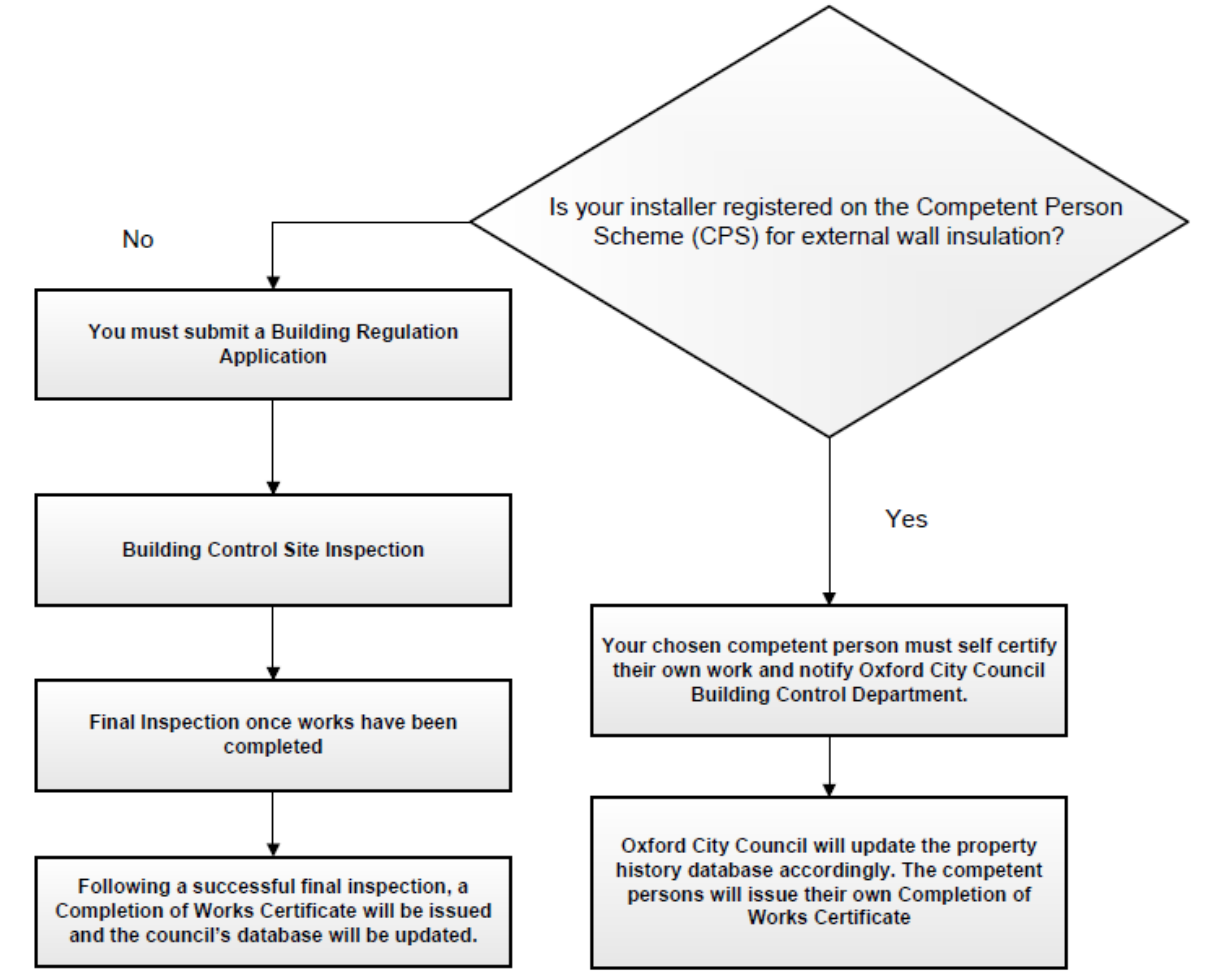
Building Regulations

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 materially change buildings in certain ways. However, 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 (CPS) 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^{2}K or greater if the external wall is solid 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 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 (overleaf) and to the document for more details on what this requirement means in practice.

Table 3 **Upgrading retained thermal elements**

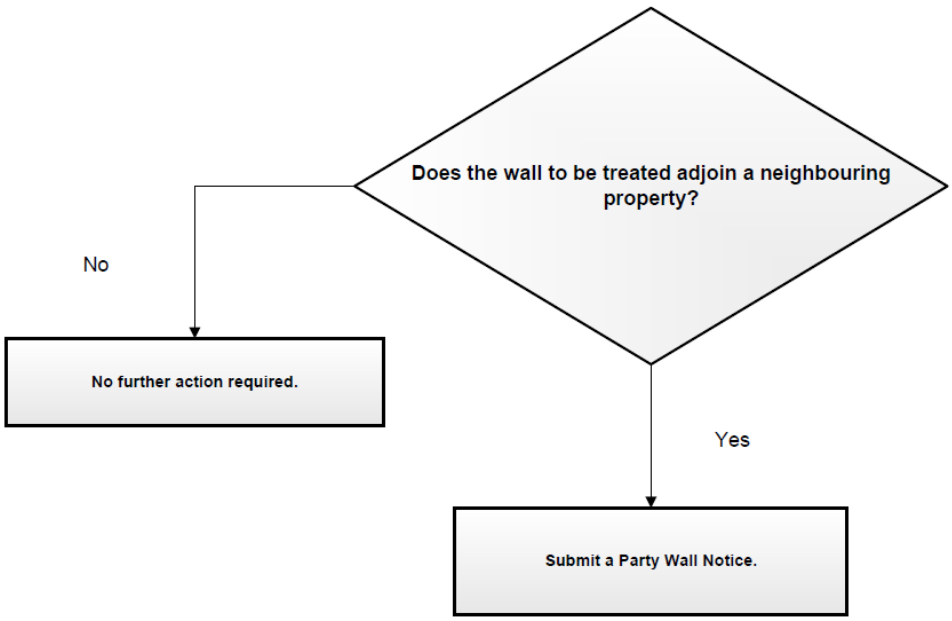
Element[1]	(a) Threshold U-value W/(m²·K)[8]	(b) Improved U-value W/(m²·K)[8]
Wall – cavity insulation[2]	0.70	0.55
Wall – external or internal insulation[3]	0.70	0.30
Floor[4,5]	0.70	0.25
Pitched roof – insulation at ceiling level	0.35	0.16
Pitched roof – insulation between rafters[6]	0.35	0.18
Flat roof or roof with integral insulation[7]	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

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.

Possible measures, costs and Building Regulations' status

For all insulation measures notifiable to building control, the following applies 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.

Measure	Cost	Building Regulations Application needed?
Insulate your void roof/loft space with insulation to a minimum depth of 300mm cross-layered mineral wool insulation. (Ensure appropriate ventilation is provided and the insulation is not compressed by floor coverings).	£250-500 (less if you DIY)	Building Regulations application is required if the work is part of the removal of a thermal element e.g. more than 50% of the roof covering.
Ensure your loft hatch is insulated and draught proofed by fixing a rigid board insulation product to the rear of the hatch.	Under £100	No Building Regulations application required.
Draught proof around windows, doors, ventilation gaps etc.	£120-290 DIY £200-£580	No Building Regulations application required.
Seal between the boards of suspended timber floors	£15-20 DIY	No Building Regulations application required.
Use a removable chimney balloon or part blocker to prevent unnecessary heat loss	£15-£30	This work can be DIY or may be part of the process of a

through warmed air flowing up the chimney. (Ensure appropriate ventilation is provided e.g. a hit a miss vent to the chimney breast).		Building Regulations application.
Install LED lighting (bulbs & fittings only) throughout the house – *Can reduce your lighting costs by 90%*	£5 per bulb; more if need to change light fittings	This work can be DIY or may be part of the process of a Building Regulations application.
Insulate water tanks (if you have one) and water pipes where you can	£30-35	No
Put radiator foil behind radiators fitted on external walls	£2.50 per m^2 DIY	No
If you have a cavity in your wall, cavity wall insulation may be possible (*Contact a CIGA Approved Installer for advice*)	£400-£500	This work would be carried out by specialists under the CIGA Approved installers
Use of shutters or heavily lined curtains.	Various	No
Replace existing gas boiler with energy efficient condensing gas boiler	£1500-£3000	Gas Safe Competent Persons scheme

NB: It is very important in older buildings to ensure that they have adequate ventilation to prevent a build-up of damp which can lead to fabric decay and ultimately to loss of building fabric.

Step Three

The below measures cost more but make more of an impact. Please seek advice if you are in a Conservation area or have a Listed building.

Measure	Cost	Building Regulations Application needed?
Secondary glazing or double glazing	£2000-6000	FENSA Competent Persons Scheme or Building Regulations application.
Floor insulation	Varies depending on floor type	Yes if the work is part of substantial work of more than 50% of a thermal element (in this case the floor) and/or if work is being done to over 25% of the whole building fabric
Full install of gas central heating system	£4000-£6500	Gas Safe Competent Persons scheme
High efficiency (new)? Electric Storage heaters replacing existing electric heating	£500-800 per storage heater	Competent Persons scheme
Installation of wood burner in main living room replacing electric or oil heating. These need to meet certain clean air standards (see here) and should only be used to burn dry wood.	£2500 ish	HETAS Competent Persons scheme
Insulation between and or below rafters if the loft is used as a habitable room.	Varies depending on situation	Building Regulations application required.

Step Four – More intrusive insulation

This is usually not possible in listed buildings because it has a substantially harmful impact on the building fabric and the size and proportion of rooms.

Measure	Cost	Building Regulations Application needed?
External Wall insulation - whole house	Approx. £10,000	Competent Persons Scheme
Internal Wall insulation	£10,000+	Yes if the work is part of substantial work of more than 50% of a thermal element (in this case the wall) and/or if work is being done to over 25% of the whole building fabric
External wall insulation or internal wall insulation – part of house, eg extension	Pro rata from above	Competent Persons Scheme or Building Regulations application.