Retrofit: Know your options

Below is a general guide to retrofit interventions you can make and their levels of complexity and investment. Please note that this is general, not exhaustive, and specialist advice should be sought taking your own building, its condition, location, character, significance, any statutory protection, and use into account to make sure that measures are appropriate. Not all measures may be compatible to your building or to each other.





KEY

Risk takes into account reversibility, and risk to building and occupants if the installation is inappropriate, e.g. inconsiderate installation can damage finishes and structural elements that are costly and difficult to repair, poor installation could pose a fire risk, or health risk due to condensation and mould growth. Wet walls lose more heat, undermining the reason for many interventions if those interventions trap moisture in the fabric.

Complexity takes into account the number of interactions with other building elements that need to be considered when designing the system and/or the specialist skill required for installation.

Cost is the likely investment needed for successful high-quality implementation of a measure

Scores given have balanced these considerations. It should be noted, however, that each measure is likely to have different options that may be more or less suitable to your specific building and circumstances.

Low

Options that are unlikely to damage the building, could be implemented at a relatively low cost and/or could be undertaken by a competent DIYer. You will generally not require statutory consents for these works.

Medium

You will need specialist advice to ensure that interventions are appropriate, safe, and well designed, and are likely to require a competent tradesperson to install them at a moderate cost. You are likely to require statutory approvals for most works.

Medium-High

Are options that are more complex and disruptive to the building than medium interventions, and are more difficult to reverse; therefore, may pose a higher risk to the building if not competently/appropriately implemented. Specialist advice and specification from a building surveyor/architect, and competent tradespeople will be required for this at a higher cost. You are likely to require statutory approvals for most works.



Are options that are more complex and disruptive to the building, are difficult to reverse or can't be reversed, and will require specialist specification, installation and in most cases will require statutory approvals. They would pose a high risk to the building and its character if not competently/appropriately implemented. These works are likely to be a higher cost.





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Maintenance & Servicing

Keep the building dry through good maintenance to reduce heat loss. Service systems & appliances to maximise efficiency and minimise need for replacement

Monitor Energy Use

Monitor energy use (e.g. with a smart meter) to see which appliances use most energy, and understand heating system controls to help you make savings choices. However, retain adequate heating for comfort & air quality.

Draughtproofing

Install draught excluders, keyhole covers, brush strips etc. Don't obstruct vents or airbricks and retain enough ventilation to manage moisture and temperature. when closed

Improve air tightness

E.g. minimise gaps in existing doors, windows & floors, insulate loft hatches, and reduce heat loss from chimneys through register plates/ chimney balloons. Retain good ventilation to prevent mould, poor air quality and heat loss.

Install Secondary Glazing

Retain windows and install a second internal window (keep openable to allow fire escape & ventilation). This results in a highly thermally and accoustically efficient arrangement.

Install Loft Insulation

Reduce heat loss through a vapour permeable insulation system. Needs to be well designed, installed and ventilated to minimise risk to building & occupants.

MEDIUM HIGH

MEDIUM

Install Floor Insulation

Increase efficiency through insulating below floors/between joists, on top of the floor structure, or above the finished surface. Design & detailing is very important to prevent trapped moisture and disruption of character features.

Install Wall Insulation

Insulation can be applied internally or externally. It needs to be well detailed with appropriate materials to prevent trapped moisture. It is likely to have a big visual impact, and may not be suitable for protected buildings.

HIGH

SF COST & COMPLETITY



Install new heating system

New heating and/or hot water systems not reliant on fossil fuels can reduce carbon emissions and bills. To ensure lower running costs, it is usually advised to improve the energy performance of the building first. Installation can be disruptive and a big investment.

Install new electricity generation

There may be an opportunity to introduce electricity generation, such as solar PV panels or wind generation, however this will be site and building specific and may not be suitable due to visual impact.

Upgrade wiring and iahtina

Upgrading wiring is necessary for safety when it comes to the end of its life. It can also improve efficiency through increased control, but can be disruptive.

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Refurbish Old Window Shutters

Window shutters, heavy curtains or insulated blinds can significantly reduce heat loss

Insulate Pipes & Tanks

Insulate heating pipes and hot water tanks to reduce heat loss.

Improve Hot Water Storage

Increase efficiency through a new insulated cylinder and/ or thermostat

Refurbish Heating System & Controls

E.g. replacing older radiators, pipework and cleaning the system; and improving controls and zoning heating to improve adjustments, efficiency and reflect patterns of use.

Install Insulated Finishes

Insulated lime plasters can improve thermal performance, with or without additional insulation, when there is a restoration opportunity.



Replace Windows

Replacing old windows with double glazed windows or retaining frames and upgrading glazing can improve performance but could impact character, and good quality, sympathetic windows are expensive. Where historic windows are sound. other options such as secondary glazing should be considered. Ventilation should be well considered for occupant and building health.