Energy Efficiency and Historic Buildings – Fabric Upgrades and Energy Generation

September 2024

[1st Edition]

Contents

Introduction

Climate change is recognised as the biggest threat facing our planet today. In July 2019, Babergh and Mid Suffolk District Councils recognised and declared a climate emergency. Energy usage from carbon-based systems in buildings generate a considerable amount of carbon emissions and thus contribute to climate change, and a notable proportion of this comes from historic buildings/heritage assets. Reducing carbon emissions from historic buildings, either through reducing the amount of energy that needs to be used, or by providing more renewable sources of energy generation, can therefore play an important role in combating climate change. Nonetheless, this does not mean that reducing carbon emissions in historic buildings is acceptable at any cost - instead a balanced approach is generally required, having regard also to the legal and policy requirements to protect the historic interest of heritage assets.[1]

[1] As set out in the Planning (Listed Buildings and Conservation Areas) Act 1990 and the National Planning Policy Framework (NPPF).

General Advice

*Please note that the following guidance is subject to change, including to align with changes in national policy and advice. HM Government are currently reviewing the adaption of historic homes for energy efficiency nationally. For more information, please see - https://www.gov.uk/government/publications/adapting-historic-homes-for-energy-efficiency-a-review-of-the-barriers/adapting-historic-homes-for-energy-efficiency-a-review-of-the-barriers.

Preliminary Considerations

Before considering alterations to a historic building to improve energy efficiency, it is important to ensure that the building is well-maintained and in good repair. Issues such as cracked render, blocked gutters, ill-fitting or rotten windows, and inappropriate impermeable materials e.g. cement renders, can lead to damp problems, impacting energy efficiency and the effectiveness of upgrades. Addressing these issues first is essential.

It is advised to consult the Heritage and/or Development Management (Planning) Departments to determine if Listed Building Consent and/or Planning Permission are needed to address such issues, at:

- heritage@baberghmidsuffolk.gov.uk / 0300 123 4000 Option 5, Option 3
- planning@baberghmidsuffolk.gov.uk / 0300 123 4000 Option 5, Option 3

Every historic building has unique characteristics, so alterations acceptable for one might not be suitable for another. Applications for works are considered relative to the specific circumstances of the building in question. Proposals must therefore justify the works clearly and convincingly, aligning with the specific building's special interest. If your building is also in a Conservation Area, you should also consider the impact of the works on the character and appearance of the Conservation Area.

It is recommended to adopt a holistic approach, identifying areas throughout the building where energy efficiency gains can be made without harming the building's historic or architectural interest, or else minimising the harm. While some upgrades might be ad-hoc, a thoughtful, whole building strategy is often more beneficial. For more information, please see https://stbauk.org/whole-house-approach/.

An additional financial cost associated with a less/non-harmful option will generally not be considered clear and convincing justification for pursuing a more harmful scheme.

There are some simple upgrade options to improve efficiency that do not require any form of permission. This includes:

- Curtains
- Draught excluders
- Rugs/carpets
- Insulating hot water tanks
- Changes to energy use

Building Regulations

Work to designated heritage assets[2] does not need to comply fully with Building Regulations ventilation or energy efficiency requirements (outlined in Parts F and L of the Building Regulations) *where to do so would unacceptably alter the dwelling's character or appearance*. But work must comply with Parts F and L, as relevant to the type of work proposed, where this would not unacceptably alter the asset's character or appearance. The work should comply with standards in the approved document to the extent that it is reasonably practicable. For more information, please see https://www.gov.uk/government/publications/ventilation-approved-document-f https://www.gov.uk/government/publications/conservation-of-fuel-and-power-approved-document-l.

Energy efficiency measures are likely to impact the passive ventilation of historic buildings. As per Part F Section 3 of the Building Regulations work, the ventilation of the dwelling

[2] Statutorily listed buildings, buildings within a designated conservation area and scheduled ancient monuments.

should either meet the standards in the relevant approved document or not be less satisfactory than before the work was carried out. In order to assess the impact of a scheme of works on the ventilation of a domestic historic building, an assessment should be carried out either by applying the simplified method as outlined in Part F Section 3 or by seeking expert advice. For more information, please see https://www.gov.uk/government/publications/ventilation-approved-document-f

In regard to historic buildings, it may not be considered necessary or reasonable for works to meet Building Regulation standards. A more balanced approach, also having regard to the special historic or architectural interest of the building, will often be more appropriate.

A written statement from the Local Planning Authority stating that a building cannot meet the standards for Parts F and/or L without unacceptably altering its character and appearance may be required to qualify for an exemption. This should be sought through our paid pre-application service (see below).

Please note that Building Regulations may be subject to change.

The Building Control team can be contacted at:
building.control@baberghmidsuffolk.gov.uk

Minimum Energy Efficiency Standards (MEES)

Similar requirements to Part L of Building Regulations as outlined above apply for the private renting of buildings, where Minimum Energy Efficiency Standards (MEES) apply.

Exemptions apply, including for listed buildings and buildings within a Conservation Area, but again only insofar as compliance with the minimum energy requirements would unacceptably alter their character and appearance. For more information on this, please see - https://www.babergh.gov.uk/w/listed-buildings#minimum-energy-efficiency-standards or https://www.midsuffolk.gov.uk/w/listed-buildings#minimum-energy-efficiency-standards.

A written statement from the Local Planning Authority may also be required for MEES stating that a building cannot meet the minimum standards without unacceptably altering its character and appearance may be required to qualify for an exemption. This should be sought through our paid pre-application service (see below).

Please note that Minimum Energy Efficiency Standards may be subject to change.

Seeking Advice

The Heritage Team can provide initial advice by email exchange regarding the need for Listed Building Consent – and the Development Management Department can provide this regarding questions on the need for Planning Permission (see contact details above).

For more specific guidance on the acceptability of works requiring any form of permission, formal pre-application advice can be sought - for more information please see https://www.babergh.gov.uk/planning/pre-application-advice/ or https://www.midsuffolk.gov.uk/pre-application-advice.

Investigation to assess the potential for adding insulation to improve the thermal performance of the building may require Listed Building Consent where this involves opening up. Please check with the Heritage Team before carrying out such investigative work.

Below is a list of the most common alterations to improve thermal efficiency and generate low carbon energy for which permission may be required, including information on the likely permissions required and some general advice regarding acceptability. However, please remember, the specifics of permission and acceptability depend on the building and works in question. Seek professional advice for your unique case.

Fabric Upgrades

Windows and Doors

1. Draught Proofing

The addition of seals around the edges of windows and doors, or between opening and fixed parts of windows.

Requirement for Permission

- Listed Building Consent – No, in most circumstances.
- Planning Permission – No.
- Building Regulations – No.

General Advice

- Some draught-proofing measures require routing out channels in the window frames. This may require Listed Building Consent.
- Draught-proofing restricts ventilation and can impact how buildings manage moisture, potentially leading to condensation issues. All buildings require some ventilation to provide fresh air and expel moisture laden air. Extractors can often be installed to control ventilation but may require Listed Building Consent or at least agreement that Listed Building Consent is not required by email exchange with the Heritage Team.
- Heavy curtains, blinds and shutters can also provide draught proofing. Curtains and blinds do not require

permission, but new shutters on a Listed Building do require Listed Building Consent.
Further Advice - Historic England - https://historicengland.org.uk/images-books/publications/traditional-windows-care-repair-upgrading/heag039-traditional-windows-revfeb17/ - Historic England, Page 19 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

2. Secondary Glazing

A secondary, lightweight window installed internally to the existing window and frame.

Requirement for Permission

- Listed Building Consent – Generally no, providing they can be installed without having to alter or remove historic fabric, other than for small fixings, and if the form, pattern, and method of opening of the secondary glazing matches the pattern of the window. The Council is currently considering whether such works can be conditionally consented in principle through a Local Listed Building Consent Order.
- Planning Permission – No.
- Building Regulations – No.

General Advice

- This is the best way of upgrading the thermal efficiency of historic windows while retaining them.
- Products can be produced that accurately reflect the form of the existing window in order to limit any visual intrusion.
- Some secondary glazing can be temporarily removed, e.g., to reduce the risk of overheating in the summer. Others are openable, allowing access to the inside of historic windows for maintenance and natural ventilation.

Further Advice

- Historic England - https://historicengland.org.uk/images-books/publications/traditional-windows-care-repair-upgrading/heag039-traditional-windows-revfeb17/
- Historic England, Page 20 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

3. Adding Double Glazing to Existing Windows or Doors

Replacing the existing glass with Insulated Glass Units, while otherwise retaining existing window frames and associated joinery.

Requirement for Permission

- Listed Building Consent – Generally yes, particularly where it relates to historic windows on a listed building, including curtilage listed structures.
- Planning Permission – No.
- Building Regulations – No.

General Advice

- This option requires the loss of existing glass, which may be historic. The appearance of modern double glazing is also very smooth and uniform, in contrast to historic glass, which has ripples and different reflective qualities. The visual impact of even this subtle change can be detrimental to the appearance of some listed buildings.
- This would not reduce any heat loss through the frame.
- Old windows and doors may be distorted or uneven, making installation difficult.
- Existing and proposed measured section drawings of the windows or doors would be required to demonstrate the proposed alteration and to ensure

historic joinery could be retained and would not be unduly impacted. - In the majority of cases, secondary glazing will be a less harmful alternative to this, with similar benefits, so will be strongly preferred.
Further Advice - Historic England - https://historicengland.org.uk/images-books/publications/traditional-windows-care-repair-upgrading/heag039-traditional-windows-revfeb17/ - Historic England, Page 20 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

4. Replacing with Double Glazed Windows or Doors

Adding windows with two layers of glass, with a void in between. The thickness of the glass and size of the void can be varied to allow for thicker or thinner frames.

Requirement for Permission

- Listed Building Consent – Yes, where it relates to any windows on a listed building, including curtilage listed structures.
- Planning Permission – Potentially, dependent upon whether there is a visual difference from the existing as assessed by the Planning Department.
- Building Regulations – Yes, double glazing is typically required to meet the minimum requirements. Where double glazing would harm the significance of a listed building this justification would be required.

General Advice

- The Heritage Team generally does not support the replacement of historic windows or doors without clear and convincing justification, even for thermal benefits. Consider draught-proofing and secondary glazing as alternatives which can avoid loss of historic fabric.
- Where the principle of replacement is considered acceptable because the existing windows are not historic, some form of double glazing will often be acceptable, subject to detail. The Council is currently

considering whether such works can be conditionally consented in principle through a Local Listed Building Consent Order.

- For historic houses with traditional domestic-style windows, new double glazing would need to be of the slimline form, because it can, and thus should, reflect traditional domestic-style joinery details – including slender frames, structural glazing bars and putty beading.
- Standard double glazing may be acceptable for new doors with small areas of glazing, but slimline should be used for large amounts of glazing such as for French doors.
- For other types of historic building, such as former industrial or agricultural buildings, now converted, not historically characterised by windows, standard double or even triple double glazing may be acceptable. Off-the-shelf products may be more acceptable than for domestic-style buildings.
- In all cases, details such as flush framing and balanced forms should be adopted, while trickle vents or drip moulds should not be used.
- Applications to replace windows or doors should include detailed elevation and section drawings of the new windows, at 1:10 and 1:2 respectively, and details of materials and finishes.
- Where historic windows or doors require replacement, e.g., due to their condition, the new

should normally match them as closely as possible – this may include requiring replica single glazing. - If the existing windows are not sympathetic in form, replacing them with more appropriate windows or doors may be necessary, rather than matching the existing units.
Further Advice - Historic England - https://historicengland.org.uk/images-books/publications/traditional-windows-care-repair-upgrading/heag039-traditional-windows-revfeb17/ - Historic England, Page 21 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

Insulation

1. Loft Insulation/Ceiling Level Insulation in Pitched Roofs

Insulation added between and/or above the floor joists of the attic.

Requirement for Permission

- Listed Building Consent – Generally no, if breathable insulation, e.g. sheep's wool is used, and the works would not require the removal/alteration of ceiling/floor finishes, and are not mechanically fixed. Otherwise, Listed Building Consent may be required.
- Planning Permission – No.
- Building Regulations – No.

General Advice

- The temporary lifting of floorboards to install insulation below and/or between joists, may be considered acceptable in some cases, but this process can be damaging. Sometimes it may be requested that a few boards are lifted initially, to assess the ease of removal before further advice can be offered.
- The use of impermeable insulation at loft level may be considered acceptable, if not mechanically fixed, subject to the specific details, such as eaves ventilation.

- Spray foam insulation or similar is not considered acceptable, as it can be irreversible and can cause damage to the building's historic fabric.
Further Advice - Historic England - https://historicengland.org.uk/images-books/publications/eehb-insulating-pitched-roofs-ceiling-level-cold-roofs/heag077-cold-roofs/ - Historic England, Page 22 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

2. Rafter Level Roof Insulation

Insulation added directly below, between and/or above rafters (or 'joists', in the case of flat roofs).

Requirement for Permission

- Listed Building Consent –Yes, for installation in a listed building, including curtilage listed buildings.
- Planning Permission – Changes to the external appearance of the roof may require Planning Permission.
- Building Regulations – Yes, if internal / external surfaces are removed. Where installing insulation would harm the significance of a listed building this justification would be required.

General Advice

- Various options for roof insulation at rafter level - below, between and/or above the rafters, are available, but each has specific heritage impacts that affect acceptability. Appropriateness of options is specific to the building. Approval to remove finishes, and the removal itself, may be necessary before finalising the insulation approach.
- **Above Rafter Insulation**: Requires stripping of roof coverings, which may cause damage to fabric, and changes to the external appearance of the building, including junctions with chimneys, eaves and verge, and, where relevant, attached buildings. This option

may be appropriate where a roof requires stripping and relaying due to its condition.

- **Between Rafter Insulation**: Involves the loss of any historic infill material if present, which is relatively rare, but likely to make it unacceptable, loss of rafter depth expression and stripping of the roof or removal of internal finishes for installation.
- **Below Rafter Insulation**: Requires the loss of historic internal finishes, if present, obscuring or covering historic features, such as exposed timbers, and changes to the internal dimensions of the space.
- **Flat Roofs:** Similar considerations apply as with pitched roofs. This may include parapet, rather than eaves and verge, junction details. The risks of condensation within the construction fabric are greater than with pitched roofs.

- A vapour open, “breathable” build-up is usually the most appropriate choice.
- The impact of the additional weight of the insulation should also be considered.
- Additional roof ventilation may be required, and can also be a heritage consideration.

- **Ecological Surveys:** Works to roofs are likely to require the need for Ecological Surveys, especially concerning bats, and will need to be submitted alongside any necessary Listed Building Consent application. This is because the Council must adhere to its legal duties in

relation to ecology even where the only material considerations are heritage-related. - **Detailed Proposals:** Comprehensive plans, elevations and section drawings showing proposed insulation extent, build-up, including internal and external finishes, along with manufacturers' literature, and junction details, as appropriate, are essential.
Further Advice - Historic England – Pitched Roofs - https://historicengland.org.uk/images-books/publications/eehb-insulating-pitched-roofs-rafter-level-warm-roofs/heag070-insulating-pitched-roof-rafter-warm-roofs/ - Historic England – Flat Roofs - https://historicengland.org.uk/images-books/publications/eehb-insulating-flat-roofs/heag078-flat-roofs/ - Historic England- Thatched Roofs - https://historicengland.org.uk/images-books/publications/eehb-insulating-thatched-roofs/heag079-thatched-roofs/ - Historic England, Page 22 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

3. Wall Insulation

Insultation added to the outside or inside of a wall, between the structural members of a wall, or in a cavity.

Requirement for Permission

- Listed Building Consent – Yes, for any listed building, including curtilage listed buildings.
- Planning Permission – External changes related to external wall insulation may require Planning Permission.
- Building Regulations – Yes, any insulation would typically need to meet minimum requirements. Where installing insulation to meet these requirements would harm the significance of a listed building then justification would be required.

General Advice

- Various options for wall insulation exist - on the outside, inside or within the wall (e.g. between studs in a timber-framed building, or within the cavity of a cavity wall). The acceptability of these options depends on specific heritage impacts, making appropriateness unique to each building. Approval to remove finishes, and the removal itself, may be necessary before an insulation approach can be agreed.
- **External Wall Insulation:** Typically involves covering of exposed external fabric, and/or the removal of

finishes such as render or weatherboarding, and changes to the external thickness of the wall and junctions (e.g. with windows, plinths and roofs). It is generally not considered appropriate for exposed brick, stone or timber-frame buildings, but there may be more scope with rendered or boarded buildings. Fixings can be particularly damaging to historic renders or clay lump, so may not be appropriate where these exist.

- **Internal Wall Insulation:** Requires the covering over of any historic fabric that is exposed internally, as well as changes to the internal wall build-up. It is generally considered more appropriate for brick and stone buildings, to allow the retention of their appearance externally, though there may be exceptions. It is generally less appropriate for timber-framed buildings where the frame was designed to be on show internally, for clay lump buildings, or where historic internal plaster finishes survive.
- **Between Timber Frame Insulation:** Requires the loss of existing infill, which may be of historic interest, making it unlikely to be considered acceptable, where this exists, plus the loss/removal of internal or external finishes to gain access.
- **Cavity Wall Insulation:** Most historic buildings will not have cavity walls. This approach will have less impact on the appearance of a building but poses moisture movement risks. The creation of openings through

historic fabric in order to install the insulation may also be required.

- A vapour open, “breathable” build-up is usually the most appropriate choice.
- If structural walls were historically plastered over, but have since been exposed, re-covering with insulation might be acceptable.
- Clay lump can be particularly difficult to insulate, but is often a better insulator as is than other traditional materials.
- **Insulation Products as Render/Plaster Backing:** While some insulation products can also serve as render/plaster backing, they generally should still be used in conjunction with traditional laths in historic buildings, unless justified otherwise.
- **Details Proposals**: Comprehensive plans, elevations and section drawings displaying the extent of insulation and proposed build-up, including internal and external finishes, along with manufacturers literature, and junction details, as appropriate, are essential.

Further Advice

- Historic England – Solid Walls - https://historicengland.org.uk/images-books/publications/eehb-insulating-solid-walls/heag081-solid-walls/
- Historic England – Timber Frame Walls - https://historicengland.org.uk/images-books/publications/eehb-insulating-timber-framed-walls/heag071-insultating-timber-framed-walls/
- Historic England – Cavity Walls - https://historicengland.org.uk/images-books/publications/eehb-early-cavity-walls/heag083-early-cavity-walls/
- Historic England, Pages 23-26 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

4. Floor Insultation

Insulation generally added above or below the lowest habitable floor of a building, which could be a cellar.

Requirement for Permission

- Listed Building Consent – Generally Yes for any listed building or curtilage listed building.
- Planning Permission – No.
- Building Regulations – Yes, any insulation would typically need to meet minimum requirements. Where installing insulation to meet these requirements would harm the significance of a listed building then justification would be required.

General Advice

- Options exist for floor insulation above or below existing floor finishes. Approval to lift floor finishes, and the lifting itself, may be required before insulation below can be agreed.
- **Installing Above**: Requires the covering over of existing floor finishes, which may not be acceptable if they are of historic interest. It would also affect wall junctions, joinery such as covings, architraves and skirting boards, and head heights in rooms, including at doorways.
- **Installing Below**: Requires lifting current floor finishes, which may be of historic interest, and excavating material below. It may be appropriate where the

historic floor finish could be re-laid above the insulation. Excavation may not be acceptable if it requires removal of previous historic floor finishes below the current finish or if works would compromise shallow foundations. - Vapour permeable insulation/a breathable build-up is most appropriate. - **Excavation Considerations**: This may also require the involvement of Suffolk County Council Archaeology. Conditions may be applied regarding monitoring, restricting, and recording the excavation of current floor levels. - **Draught-Proofing** can also be conducted to floorboards – Consent may be required for this, subject to detail. - **Detailed Proposals:** Comprehensive plans, elevations and section drawings showing insulation extent and proposed build-up, including finishes, along with manufacturer's literature, and junction details are essential.
Further Advice - Historic England – Suspended Timber Floors - https://historicengland.org.uk/images-books/publications/eehb-insulation-suspended-timber-floors/heag086-suspended-timber-floors/

- Historic England – Solid Floors - https://historicengland.org.uk/images-books/publications/eehb-insulating-solid-ground-floors/heag087-solid-floors/
- Historic England, Page 23 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

Other

1. Chimneys and Flues

The addition of features to chimneys and flues to control the loss of heat.

Requirement for Permission

- Listed Building Consent – Potentially, depending on nature of works.
- Planning Permission – External alterations to a chimney stack may require Planning Permission. Check with the Planning Department.
- Building Regulations – No.

General Advice

- For operational open-fire chimneys, installing a damper to close the chimney when it is not in use.
- For disused chimneys, an external cap or internal flue balloon could be installed, while ensuring that there is still some ventilation to the stack.
- These works may not be contentious, subject to detail.

Further Advice

- https://historicengland.org.uk/images-books/publications/eehb-open-fires-chimneys-flues/heag080-chimneys/

2. Low Energy Lighting Replacing existing lighting with lower energy lighting/bulbs.
Requirement for Permission - Listed Building Consent – Works to historic light fittings in listed buildings are likely to require Consent. The installation of new external lighting, and internal lighting in certain cases, particularly in highly decorative rooms or when chasing through historic lath and plaster, is also likely to require Consent. Replacement of modern internal light fittings in the same locations as existing is unlikely to require Consent. - Planning Permission – No. - Building Regulations – No, except where new light fittings are installed.
General Advice - Replacing modern light bulbs with lower energy ones is acceptable. - Some buildings retain early gas or electrical lighting, which generally should be retained. - Upgrading historic light fittings that have lost historic bulbs to use modern bulbs may be possible. - Where new lighting is to be installed in new locations, consideration should be given to whether the arrangement of the current lighting is a historic feature, and whether the new lighting would affect

this, as well as any decorative schemes or other historic features. - New external lighting is likely to affect the historic character of the building, with consideration of design, appearance, location, materials and light pollution required. - New external lighting may also be required to meet legislation in regard to Building Regulations and Protected Species (Ecology).
Further Advice - Historic England – Internal Lighting - https://historicengland.org.uk/advice/technical-advice/building-services-engineering/internal-lighting-in-historic-buildings/ - Historic England – External Lighting - https://historicengland.org.uk/advice/technical-advice/building-services-engineering/external-lighting-of-historic-buildings/

Energy Generation

1. Solar Panels /Photovoltaics (PVs)

Panels/cells that convert sunlight into electrical energy (PV Panels). There are also versions which just heat water (solar heating panels). They can be either roof, wall or ground mounted. They are also available in the form of solar slates.

Requirement for Permission

- Listed Building Consent – Yes if installed directly on a listed building, including curtilage listed buildings.
- Planning Permission – May be required dependent on various factors, including, but not confined to; extent and height, attachment to a listed building, location within the grounds of, or on any building within the grounds of, a listed building, and on any building fronting a highway within a Conservation Area.
- Building Regulations – Yes.

General Advice

- A sequential approach should always be taken when considering the installation of solar panels to ensure that the least harmful location is used. The siting of ground-mounted panels or on the roofs of modern outbuildings away from prominent areas are likely to be acceptable. The Council is currently considering whether such development could be conditionally permitted by Local Development Order.

- **Ground-Mounted Panels** or **Modern Outbuildings** may require buried cabling, which may require the involvement of Suffolk County Council Archaeology.
- **Installation on Modern/Later Extensions** is often preferable to installation on the most historic parts of buildings and is most likely to be acceptable on flat roofed structures, using low pitched or flush lying panels. Consideration should be given to the relative historic interest of each part of the building, where it incorporates ranges of different periods.
- **Installation directly on Historic parts of Buildings** can be considered if there are no other less impactful viable locations. This is more likely to be acceptable the more hidden from view they would be, such as when positioned within the valley of an 'M'-shaped roof or behind a parapet. The potential impact of the additional weight and risk of fire should also be considered.
- **Thatch –** Solar panels should not be installed on/directly adjacent to thatch, as this is a fire hazard.
- **Minimising Impact**: Different panel finishes are available, which may assist with minimising their impact, where they are considered acceptable in principle. PV/solar cells are also available in the form of tiles or slates or integrated with glazing. These may be less visually intrusive but may instead require the loss of or change from traditional materials, which may not be supported, particularly directly on a historic building. This also applies to replacing current

roof covering materials with standard solar panels, rather than installing them above.

- **Equipment Location:** Consideration should be given to the proposed location of associated equipment, such as batteries, and connection to the historic building. Batteries are normally located internally. If they are located in a modern outbuilding or discreet space, then Consent may not be required.
- **Ecological Surveys:** Works to roofs may necessitate Ecological Surveys, particularly regarding bats, which will need to be submitted within any necessary application.
- **Proposal Details:** Any proposals should include measured plans, elevations and section drawings, and manufacturer's literature, to show the proposed location, height and design of the panels, and details of fixings to historic fabric.

Further Advice

- Historic England – Solar Electric (Photovoltaics) - https://historicengland.org.uk/images-books/publications/eehb-solar-electric/heag173-eehb-solar-electric-photovoltaics/
- Historic England, Pages 30-32 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

2. Heat Pumps

Pumps that absorb and release heat energy from the outside air or the ground. They can also be used on water sources, though possibly not on a domestic scale.

Requirement for Permission

- Listed Building Consent – Pumps which are directly attached to listed/curtilage listed buildings generally require Listed Building Consent. Freestanding units generally do not, but the associated pipework connecting to the building may still be considered to do so, subject to detail.
- Planning Permission – This may be required, particularly for above ground units within the grounds of a Listed Building or in a Conservation Area.
- Building Regulations – Yes.

General Advice

- **Freestanding Units:** These are more likely to be considered favourably, where discreetly located. Mounting units directly on the historic core should be avoided.
- **Additional Screening:** This can reduce the prominence of the units, and may be specifically required, in the form of walls, hedging, willow fencing or similar. This should also be of appropriate design and may also require Permission and/or Consent. For further advice on this, see -

https://www.babergh.gov.uk/documents/d/asset-library-54706/standing-advice-from-our-heritage-team - **Minimising Pipework:** The extent of pipework connecting the pump to the property should be minimised, to reduce the number of openings through historic fabric required. - **Below Ground Works:** This may require the input of Suffolk County Council Archaeology. - **Radiators/Heat Emitters:** Any associated new/replacement radiators/heat emitters should also be suitably designed, and located to avoid obscuring or cutting across historic features. Such works may be agreeable by email exchange with the Heritage Team or may require Listed Building Consent. - **Noise Considerations:** The effects of noise generated by air source heat pumps should also be considered. - **Proposal Details:** Detailed plans and elevations showing the proposed location of the heat pump and any screening, and manufacturer's details of the pump and screening should be submitted for proposals requiring an application.
Further Advice - Historic England – Heat Pumps – https://historicengland.org.uk/advice/technical-advice/retrofit-and-energy-efficiency-in-historic-buildings/low-and-zero-carbon-

technologies/installing-heat-pumps-in-historic-buildings/

- Historic England – Heat Pumps – Case Studies - https://historicengland.org.uk/images-books/publications/air-source-heat-pumps-historic-buildings/heag316-heat-pumps-historic-buildings/
- Historic England, Pages 28-29 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

3. Biomass Boilers

Boilers that use wood chips or pellets as fuel to generate heat.

Requirement for Permission

- Listed Building Consent – No for external, freestanding boilers, unless connection to the building would be particularly intrusive. Potentially required for boilers inside a listed building, depending upon location and degree of physical alteration.
- Planning Permission – External boilers will generally require Planning Permission within the grounds of a listed building and may also do so in the grounds of other buildings; the Council is currently considering whether such development could be conditionally permitted by Local Development Order.
- Building Regulations – Yes.

General Advice

- Both external and internal boilers are more likely to be considered acceptable if discreetly positioned and adequately screened, similar to heat pumps.

Further Advice

- Historic England - https://historicengland.org.uk/advice/technical-advice/retrofit-and-energy-efficiency-in-historic-buildings/low-and-zero-carbon-technologies/#SectionBiomassText

4. Domestic Wind Turbines

A domestic scale version of a turbine fixed to a pole that harnesses energy from the wind.

Requirement for Permission

- Listed Building Consent – Yes if attached to a listed or curtilage listed building.
- Planning Permission – Yes within the grounds of a listed building. It may also be required within the grounds of non-listed buildings.
- Building Regulations – Yes.

General Advice

- Wind turbines attached directly to historic buildings are unlikely to be supported. Even on a modern outbuilding within the grounds of a historic building it may still be considered too prominent.
- There may be more scope for a free-standing turbine subject to position, height and design, but it may still be too prominent.
- Noise impacts are also a consideration with turbines.

Further Advice

- Historic England - https://historicengland.org.uk/advice/technical-advice/retrofit-and-energy-efficiency-in-historic-buildings/low-and-zero-carbon-technologies/#SectionWindTurbinesText

5. Upgrading Existing Heating Systems

Replacing any existing heating system with a more efficient version.

Requirement for Permission

- Listed Building Consent – Generally no, for replacing modern heating systems in listed buildings, but subject to various factors including the degree of change. However, the addition of new/replacement external flues to listed buildings may require Listed Building Consent. Works to historic heating systems are likely to require Listed Building Consent.
- Planning Permission – Generally no, but certain external works such as new flues may do, including on listed buildings and in Conservation Areas.
- Building Regulations – Yes.

General Advice

- Most historic properties have modern heating systems of little historic interest, making their replacement generally unproblematic.
- If new heating systems and associated works are in a similar location, use existing pipe runs, are of a similar design and do not require further openings through historic fabric, then Consent is less likely to be required. Works should avoid notching or removing historic fabric.

- However, changes to heating system types and/or designs/locations, or the introduction of heating where none currently exists, is more likely to require Consent. - Some historic heating systems, such as boilers, radiators, and stoves may have historic significance and require preservation, even if non-functional. Whilst uncommon, works on these systems are more likely to necessitate consent.
Further Advice - Historic England – Heating Historic Buildings - https://historicengland.org.uk/advice/technical-advice/building-services-engineering/heating-historic-buildings/ - Historic England, Pages 28-29 - https://historicengland.org.uk/images-books/publications/adapting-historic-buildings-energy-carbon-efficiency-advice-note-18/

Summary

More Likely to Impact Significance/Character and Appearance	Less Likely to Impact Significance/Character and Appearance
Replacing Windows and Doors	Secondary Glazing
	Draught Proofing
Wall, Roof, and Floor Insulation (Internal or External)	Loft Insulation at Joist Level
	Chimney and Flue Upgrades
	Replacement Lighting
Solar Panels Fixed to Historic Building	Ground Mounted Solar Panels, or Fixed to Modern Outbuilding of no significance
External Boilers	New/Replacement Internal Heating Systems
Wind Turbines	

Air Source Heat Pumps	Ground Source Heat Pumps

BUT there will be exceptions, and dependent on detail and the specific building/site.

Useful Resources

Emails

- heritage@baberghmidsuffolk.gov.uk / 0300 123 4000 Option 5, Option 3
- planning@baberghmidsuffolk.gov.uk / 0300 123 4000 Option 5, Option 3

Websites

- Legislation for Designated Heritage Assets – HM Government. *Planning (Listed Buildings and Conservation Areas) Act 1990.* - Planning (Listed Buildings and Conservation Areas) Act 1990 (legislation.gov.uk)
- National Planning Policy – HM Government. *National Planning Policy Framework* - National Planning Policy Framework (publishing.service.gov.uk)

- Heritage Asset Search – Historic England, 2024. *Search The List* - https://historicengland.org.uk/listing/the-list/
- Babergh and Mid Suffolk Conservation Area Appraisals – Babergh and Mid Suffolk District Councils, 2024. *Conservation Areas.* - https://www.babergh.gov.uk/conservation-areas / https://www.midsuffolk.gov.uk/conservation-areas
- Listed Building Consent Process – Historic England, 2021. *Listed Building Consent Historic England Advice Note 16.* - https://historicengland.org.uk/images-books/publications/listed-building-consent-advice-note-16/heag304-listed-building-consent/
- Curtilage Listing – Historic England, 2018. *Listed Buildings and Curtilage: Historic England Advice Note 10.* - https://historicengland.org.uk/images-books/publications/listed-buildings-and-curtilage-advice-note-10/
- Guidance on Planning Permission Requirements – Planning Portal, 2024. - https://interactive.planningportal.co.uk/

- Saving Energy in Historic Buildings – Historic England, 2024. *How to Save Energy in an Older Home.* - https://historicengland.org.uk/advice/your-home/energy-efficiency/making-changes-to-save-energy/
- Householder Energy Generation – Historic England, 2024. *Generating Energy in Your Home.* - https://historicengland.org.uk/advice/your-home/energy-efficiency/generating-energy/
- Retrofitting Measures – Sustainable Traditional Building's Alliance 'Responsible Retrofit Knowledge Centre,' 2024. - https://responsible-retrofit.org/
- Guidance on Solid Wall Insulation - The Society for the Protection of Ancient Buildings (SPAB), 2024. *Findings.* - https://www.spab.org.uk/advice/research/findings
- Ecology Advice – Chartered Institute of Ecology and Environmental Management, 2016. *A Householder's Guide to Engaging an Ecologist Key Considerations.* - https://cieem.net/wp-

content/uploads/2019/02/A_Householders_Guide_to_Engaging_an_Ecologist_Jan_2016.pdf

- Further Ecology Advice – Bat Conservation Trust, 2024. *Getting Personalised Advice.* - https://www.bats.org.uk/advice/im-working-on-a-building-with-bats/getting-personalised-advice
- Archaeology Advice – Suffolk County Council, 2024. *Suffolk Archaeological Service.* - https://www.suffolk.gov.uk/culture-heritage-and-leisure/suffolk-archaeological-service
- Building Regulations on Fuel and Power – HM Government, 2023. *Conservation of Fuel and Power: Approved Document L* - https://www.gov.uk/government/publications/conservation-of-fuel-and-power-approved-document-l
- Minimum Energy Efficiency Standards for privately rented homes – Babergh District Council, 2024. *Minimum Energy Efficiency Standards (MEES).* - https://www.babergh.gov.uk/housing/private-landlords-and-tenants/information-for-private-

renting/minimum-energy-efficiency-standards-mees-in-privately-rented-homes/

- Reducing Energy Usage – Centre for Sustainable Energy, 2024. *Tips for lower energy bills.* - https://www.cse.org.uk/advice/tips-for-lower-energy-bills/