Department for Levelling Up, Housing & Communities

Department for Culture, Media & Sport

Department for Energy Security & Net Zero

Research and analysis

Adapting historic homes for energy efficiency: a review of the barriers

Published 3 January 2024

Applies to England

Contents

This publication is available at 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

Ministerial foreword

HM Government has set an ambitious target for the UK to become Net Zero by 2050. To achieve this, we need to take steps to reduce carbon emissions in every aspect of our lives. We have already taken bold steps, including:

- investing £6.6 billion over this Parliament on clean heat and improving energy efficiency in buildings, reducing our reliance on fossil fuel heating
- making available £6 billion of new government funding from 2025 to 2028 - on energy efficiency and low carbon heating
- providing long-term funding certainty for energy efficiency and low carbon heating, supporting the growth of supply chains, and ensuring we can scale up our delivery over time.

A vital part of our journey to Net Zero is ensuring that our homes are as energy efficient as possible. Many homeowners are already taking action to increase the energy efficiency of their homes, but we recognise that this may not always be straightforward. In particular, historic homes have specific consideration when adapting them for energy efficiency.

Historic homes are a vital part of our country's rich heritage and play a crucial role in fostering pride in place. They are cultural assets that we need to protect, conserve and adapt for the benefit of future generations. Ensuring they can be adapted to accommodate energy efficiency measures and low carbon heating in a sensitive fashion is key to ensuring their long-term survival.

Alongside the need to protect and conserve, historic homes have an important contribution to make in meeting our Net Zero objectives, both in terms of their contribution to the broader UK energy efficiency and low carbon heat agenda, and in the carbon which is saved through their continued use and reuse. Historic properties make up a significant proportion of the UK's building stock, with 5.9 million buildings constructed before 1919. Historic properties can and should be part of the solution, and this report is intended to maximise their potential in supporting our progress towards Net Zero.

Through this review, we have gained a better understanding of the practical barriers that owners of listed buildings and homes in conservation areas face when they want to install energy efficiency or low-carbon heating measures in their properties.

The wide-ranging actions which the government has committed to take forward will ensure that this country's historic homes are fit for the future and play their part in helping us to meet our 2050 target.

Baroness Joanna Penn
Parliamentary Under Secretary of State (Housing and Communities)

Department for Levelling Up, Housing and Communities

Lord Parkinson of Whitley Bay
Minister for Arts and Heritage
Department for Culture, Media and Sport

Lord Callanan
Minister for Energy Efficiency and Green Finance
Department for Energy Security and Net Zero

1. Introduction

1.1. UK Transition to Net Zero

The UK Government is firmly committed to achieving Net Zero carbon emissions by 2050.

The Heat and Buildings Strategy (https://www.gov.uk/government/publications/heat-and-buildings-strategy), published in October 2021, set out the actions we would be taking to reduce carbon emissions from buildings in the near term and provides a clear, long-term framework to enable industry to invest and deliver the transition to low carbon heating. We committed to upgrading as many homes to Energy Performance Certificate (EPC) band C by 2035 as is practical, affordable, and cost-effective. We have already made good progress, with 47% of homes in England now having reached EPC C levels (https://www.gov.uk/government/statistics/english-housing-survey-2021-to-2022-headline-report), up from 14% in 2010, but we recognise there is more to do.

In addition to taking action to reduce carbon emissions, the government is taking steps to adapt the UK's housing stock to climate change. This can help reduce the costs from climate change impacts and make our economy and society more resilient. The Heat and Buildings Strategy committed to considering current and possible future climate scenarios, including overheating risk and indoor air quality risk when developing future policies to future-proof buildings. The commitment was reiterated in the Third National Adaptation Programme (NAP3) (https://www.gov.uk/government/publications/third-national-adaptation-programme-nap3), which also committed to conducting further targeted research on related risks and impacts. In addition, NAP3 included a specific risk on adapting cultural heritage in response to the impact of climate change (H11), which included actions in relation to historic homes.

In the 2022 Autumn Statement, the government announced a new national ambition to reduce the UK's final energy consumption from buildings and industry to 15% by 2030 against 2021 levels. This will be supported by an investment of £6.6 billion for energy efficiency over this parliament, and an additional £6 billion from 2025 to 2028.

1.2. The role of historic buildings

Improving the energy efficiency of homes is critical to achieving Net Zero by 2050. We must decarbonise the way we heat, cool and power our homes, which will also provide households with cost savings, improvements in thermal comfort and value of their homes.

Historic buildings have a significant role to play in the transition to Net Zero by 2050, and we believe that improving the energy efficiency and protecting historic and architectural interest are compatible and complementary goals. Appropriate retrofit of historic buildings is part of the solution to achieving Net Zero. Indeed, improving the energy efficiency of historic homes is necessary for their long-term survival as it will ensure they continue to be desirable places to live and will ensure they are maintained as important heritage assets.

The UK is home to around 30 million buildings. The Climate Change Committee's 2023 Progress Report to Parliament (https://www.theccc.org.uk/publication/2023-progress-report-to-parliament/) states that buildings remain the UK's second highest-emitting sector, accounting for 17% of total emissions. The 2022 Council Tax: stock of properties (https://www.gov.uk/government/statistics/council-tax-stock-of-properties-2022) shows that UK has the oldest building stock in Europe, with 5.9 million buildings (21%) built before 1919 and a further 4.3 million (15%) before 1944. Historic England's 2022 data (https://historicengland.org.uk/research/heritage-counts/indicator-data/assets/) shows there are approximately 350,000 listed dwellings in England, and an estimated 2.8 million homes in conservation areas.

Listed homes and homes within conservation areas are a small but important proportion of the existing UK housing stock. Retrofit of these buildings can be more challenging and costly due to the specific skills and materials required, along with additional permissions required in some cases. It is important, however, to ensure that historic buildings are adapted appropriately, with the right design based on the construction and use of the building, to ensure that the most cost and energy efficient approaches are implemented. Selecting the right measures upfront can help to avoid unnecessary costs further down the line. The special considerations required when assessing the impact on the historic and architectural

significance of a building provide an opportunity to ensure the right design for the function and construction of the buildings is developed.

Our existing building stock, including historic buildings, provides opportunities to achieve Net Zero more sustainably while enabling the continued use and care of the nation's heritage. The most sustainable building is often one that already exists. Successful retrofit leads to the continued use and care of buildings to prevent waste, and it avoids the increase in carbon emissions from new builds.

Embodied carbon accounts for the carbon emitted over the whole lifecycle of a building, including during construction, use and demolition. Evidence presented in Historic England's 2020 Understanding Carbon in the Historic Environment: Scoping Study (https://historicengland.org.uk/research/results/reports/215-2020) demonstrates that if embodied carbon emissions are excluded, the carbon emissions of a new building can be underestimated by up to 31% over 60 years. Research presented in Embodied Carbon: Three reasons we should care (https://www.open.edu/openlearn/nature-environment/environmental-studies/embodied-carbon-three-reasons-we-should-care) show that making energy efficiency improvements to existing buildings is at least 4% more beneficial, in lifecycle carbon terms, than to demolish and replace. In some cases, this benefit can increase to nearly 60%. Maintenance, periodic renewal, and conservation-focused refurbishment have the potential to save between 30% and 50% of carbon emissions and, additionally, to save up to 40% in energy consumption.

In addition to carbon reduction opportunities, adapting historic buildings for energy efficiency also brings economic opportunities. Research present in Heritage and Carbon: Addressing the Skills Gap (https://www.grosvenor.com/news-insights/heritage-and-carbon) shows that retrofitting the UK's historic buildings could generate £35bn of economic output a year while creating new construction jobs and supporting the country's Net Zero ambitions.

Furthermore, given the age of the UK housing stock, work to lessen the barriers for retrofitting listed homes and those in conservation areas can potentially help to enable broader retrofit of UK buildings, for example through strengthening related supply chains for materials and skills. We therefore recognise that, although historic homes make up only a small part of the retrofit challenge, there are wider benefits to be achieved through progressing work in this area.

1.3. Purpose of the review

In the British Energy Security Strategy (https://www.gov.uk/government/publications/british-energy-security-strategy), published April 2022, we committed to undertake a review of the practical planning barriers "that households can face when installing energy efficiency measures such as improved glazing, including in conservation areas and listed buildings".

This review involved collaboration and contributions from across government and has been developed in partnership by the Department for Levelling Up, Housing and Communities (DLUHC), Department for Energy Security and Net Zero (DESNZ), and the Department for Culture, Media and Sport (DCMS), supported by Historic England.

This review was set up to investigate the perceived practical planning barriers to retrofitting historic homes, and to identify where further work is needed.

This review explores the issues and sets out a package of actions and recommendations to meet objectives in this area.

1.4. Scope of the review

The review was asked to focus on listed homes and dwellings, and those in conservation areas. Despite this specific brief, the findings of the review may also be applicable to other undesignated, traditionally constructed properties.

The original focus of the review was on the 'practical planning barriers' to installing energy efficient measures. Evidence collected during the review and feedback from stakeholders highlighted that barriers were wider than just the planning system. The scope of the review was therefore broadened to examine a wider set of challenges to retrofit, including actions already in progress and the steps required to make further improvements.

This review originally focussed on the barriers to the installation of energy efficiency measures, which reduce energy demand (e.g., double glazing and insulation). Feedback from the roundtables, our wider research and engagement reinforced the point that, whilst installing energy efficiency measures will reduce demand and energy costs, installation of low carbon heating measures (e.g., heat pumps) is also an essential part of work to achieve Net Zero targets. Therefore, where relevant, experiences of installing low carbon heating measures have been included within the scope of this review.

We also recognise that, in addition to measures designed to improve energy efficiency and reduce carbon emissions, homeowners may wish to carry out

low or zero carbon works to help the building adapt to the impacts of climate change. Measures such as solar shading to keep a building cool. These measures may face similar planning challenges therefore, we have also considered this within the scope of this review.

Given the devolved nature of the planning system, this review focuses on England. However, some evidence, experiences and actions set out in this report may apply to, and benefit, the UK more broadly.

Through cross-government and stakeholder engagement the review identified several themes that required further attention. Whilst not exhaustive, the themes highlight the breadth of issues requiring attention and should be seen as enablers of effective historic homes retrofit:

- the planning system
- local authority skills, training, and capacity
- guidance and information
- construction industry skills, training, and capacity
- affordability and financial incentives

1.5. Approach to the review

The review gathered evidence from a range of stakeholders and organisations and considers existing published research, as well as emerging data on the topic of energy efficiency.

This evidence collection included:

- stakeholder feedback gathered through four regional roundtable events across the country, including homeowners and those involved in the planning process (see more on this, below)
- separate roundtable discussions with interested parties, including the Historic Environment Forum (https://historicenvironmentforum.org.uk/) and the Heritage Council (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1090260/FINAL_Minutes_7th_Heritage_Council.pdf)
- Historic England's review of available literature regarding the barriers to energy efficiency for historic properties
- Historic England's sampling of the handling of applications for solar photovoltaics (solar PV) in conservation areas and on or near listed buildings
- DLUHC consultations on proposed changes to the National Planning Policy Framework (NPPF) and on solar permitted development rights (solar PDR)

- Country Land Association/ Historic Houses survey of members 2022
- Historic England's 2022 Listed Building Owner/ Occupier survey
- Heritage and Carbon: Addressing the Skills Gap report (https://www.grosvenor.com/heritageandcarbon)
- Complex-to-decarbonise Homes Rapid Evidence Review 2023
- Historic England' Local Data on the Demand for Retrofitting Skills and Economic Growth (2023)
- Historic England Local Authority Staffing Survey (2023, forthcoming)

For a full list of evidence and organisations consulted as part of the review see the Annex.

Regional roundtables

Four (virtual) roundtables were held to investigate regional variations in experiences in adapting listed buildings and homes in conservation areas. However, evidence gathered to support this review suggests that similar challenges are experienced across the country, with no specific regional disparities.

Participants included local authority conservation officers, heritage consultants and architects, heritage organisations, construction industry representatives, and homeowners. The annex lists the organisations involved.

The four roundtables discussed the barriers households face when adapting historic homes, and in particular:

1. Whether there is evidence to support the claim that barriers to retrofit exist, and;

2. If so, what these barriers are and if they have any regional variation.

3. How might these barriers be addressed?

4. What further work could be done to mitigate or reduce the barriers?

Results from these roundtables and feedback from stakeholders have informed this report.

2. The planning system

2.1. Evidence and issues

'Planning' was identified as one of the key barriers for installing energy efficiency and low carbon heating measures (such as solar panels, heat pumps or double glazing) in listed homes and homes in conservation areas. A common assertion from roundtable attendees was that, while there is a recognised need for special rules for protecting designated historic buildings, obtaining planning permission or listed building consent took "too long", which not only led to frustration but could also mean losing out on financial support. It was suggested that some people have been put off from pursuing retrofit measures for their home by their perception that the planning process is too complex and uncertain to navigate.

This concern about complexity and uncertainty was driven by the fact that some energy efficiency works require applications for planning permission, others require separate applications for listed building consent, and some require neither (as explained further in section 2.2 below).

Some stakeholders were also concerned about the absence of any reference to climate change in the heritage chapter of the National Planning Policy Framework, which sets out the government's economic, environmental, and social planning policies for England. This meant planners and conservation officers were able to disregard the desirability of carbon-saving measures when considered in the context of heritage impacts. Managers of multiple traditional buildings also fed back that they found it hard to implement energy measures across their portfolios because applications were considered on a case-by-case basis with views about what was acceptable varying across local planning authorities.

However, stakeholders were positive about the potential impact of Local Listed Building Consent Orders (LLBCOs) for solar panels and other measures which provide a general grant of listed building consent for these works, removing the need to submit individual applications. Roundtable participants spoke in favour of the further rollout and usage of listed building consent orders to enable listed building retrofit.

DLUHC statistics show that there are around 27,000 listed building consent applications to local planning authorities per year, many of them focusing on minor works to Grade II listed buildings. While the response of local planning authorities is generally positive (93% approved) and the application is free, the need for listed building consent often creates delays for owners who want to make energy efficiency improvements quickly - with only 76% of applications decided within the expected 8-week timescale.

There can be significant variance among local planning authorities. Historic England's sampling of the local planning authorities handling of applications for solar photovoltaics (PV) in conservation areas and on or near listed buildings, for example, suggested that almost all applications were granted

in some planning authorities, while other authorities were much more restrictive, sometimes owing to poor planning knowledge and/ or practices. Solar cells, also called photovoltaic cells, convert sunlight directly into electricity. Photovoltaics (often shortened as PV) gets its name from the process of converting light (photons) to electricity (voltage), which is called the photovoltaic effect. The perception that consents are slow to obtain was not supported in the sample, with eight weeks being typical, although there were some exceptions.

Additionally, the results of the joint Historic Houses/ Country Land and Business Association survey conducted over the summer of 2022 revealed a very strong (87%) perception amongst respondents that planning permission and/ or listed building consent were a barrier to improving energy efficiency. While most of the survey respondents considered the heritage protection system (including listed building consent as well as planning permission) was working ‘adequately’ or better, a substantial minority (48%) described its working as ‘poor’ or ‘very poor’ and 75% viewed it as a barrier to them carrying out decarbonisation/ energy efficiency works. The Listed Properties Owners’ Club survey, conducted in February 2022, also found energy efficiency to be as significant a challenge to owners as maintaining the property, with obtaining consent for alterations a close third.

Historic England’s (2022) survey of owners and occupiers of listed buildings and buildings in conservation areas found that most residents of listed buildings support the requirement to obtain listed building consent, with 81% agreeing that listed building consent is important to protect the special architectural and historic character of the property. Of the respondents, 30% said they had applied for listed building consent, down from 35% in 2017. It is not clear whether this reflects a decrease in the desire to make alterations or an increase in non-compliance with the requirement for prior consent. Taking retrofitting measures was the fifth most frequent reason for making an application. There has been a decline in the proportion of respondents rating their overall experience of applying for listed building consent as ‘good’ (down to 35% from 51% in 2017).

To summarise, the review’s findings confirm:

- there is confusion in the public’s mind about the type of approval, if any, needed
- there are inconsistencies between local planning authorities
- the process can be too slow and uncertain

2.2 The current planning system

Under the Town and Country Planning Act 1990, development - the carrying out of building operations or the use of buildings and land – requires planning permission, although the legislation sets out exemptions, including maintenance, internal works, and alterations which do not materially affect the building's external appearance. In addition, permitted development rights - which are a national grant of planning permission by the Secretary of State – cover a wide range of types of development so property owners and occupiers can undertake works without the need to apply for planning permission.

This framework ensures many energy efficiency improvements - e.g., double glazing, internal insulation, some solar panels and heat pumps - for ordinary dwellings can be made without the need to apply for planning permission.

However, there are some additional restrictions on permitted development rights relating to listed buildings and buildings within conservation areas to protect their special interest.

Those restrictions do not prohibit those works. Rather they mean that a planning application must be submitted to ensure that the impacts of those proposals can be properly assessed.

Where planning permission is required, the local planning authority is subject to special heritage legal duties which require them to consider the desirability of preserving the listed building or conservation area when determining the application. These legal duties underpin the heritage planning policies in the National Planning Policy Framework, which emphasise the importance of identifying the heritage impacts, and set out the tests to be applied by local planning authorities in determining applications with impacts on heritage assets.

Listed building consent

Separate to planning permission, works to listed buildings which would affect their special architectural or historic interest also require listed building consent from the local planning authority. Unlike planning permission, these works could include internal alterations and so could extend to a wider range of energy efficiency improvements where those works impact on the special interest of the building.

However, there are a variety of energy efficiency improvements that are unlikely to impact the special interest of a listed building and could, therefore, be carried out without the need for listed building consent: for example, installing loft insulation or switching to a more efficient boiler which does not use carbon-based fuels.

Where listed building consent is required, local planning authorities must have special regard to the desirability of preserving the listed building.

Similar to planning permission, the heritage planning policies in the National Planning Policy Framework provide a policy framework for local planning authorities which complements this duty.

The listed building consent framework also enables local planning authorities to make a Local Listed Building Consent Order (LLBCO). Such an order grants listed building consent for specified alterations or extensions (but not demolition) to some or all of the listed buildings in their area. The Secretary of State can also make national Listed Building Consent Orders (LBCO) giving listed building consent for alterations or extensions (but not demolition) to different types of listed buildings in England.

2.3. Current action

The government is committed to protecting the historic environment. The historic environment is an important part of the character of this country, and is important for the economy, tourism, and community health and wellbeing. The government recognises that the planning system (including the special controls for listed buildings) plays a crucial role in protecting and conserving the historic environment for future generations. At the same time, it is important that planning is not a barrier to the take up of energy efficiency improvements in historic buildings, especially domestic dwellings, to support the transition to Net Zero.

DLUHC is already reforming the planning system more broadly so that it supports good design and environmental outcomes better, is less complex, and easier to engage with. The Levelling-up and Regeneration Act 2023 contains an important package of reforms to improve local plans, decision making and funding for infrastructure. This includes further measures to protect heritage assets.

DLUHC have published, in December 2023, a revised National Planning Policy Framework. This revised Framework includes for the first time a new policy setting out that local planning authorities should give significant weight to the need to support energy efficiency and low carbon heating improvements to existing buildings. In doing so, provides greater clarity to local planning authorities about the balance between protecting listed buildings and conservation areas and climate change and energy efficiency when considering applications for planning permission (and listed building consent where appropriate) for energy efficiency improvements.

This was consulted on between December 2022 and March 2023 and the government’s response and an updated NPPF has now been published with textual changes to address feedback received and with advice from Historic England, to ensure it will effectively support policy objectives.

The consultation also sought views about the role of National Development Management Policies – a key reform in the Levelling-up and Regeneration Act which will strengthen national policies in decision making over the longer term. In addition, DLUHC published a consultation in February 2023 on changes to permitted development rights for solar equipment and a new permitted development right for solar canopies. Following analysis of the consultation responses, DLUHC introduced changes to solar permitted development rights in November 2023. Full details of the changes can be found at: The Town and Country Planning (General Permitted Development etc.) (England) (Amendment) (No. 2) Order 2023 (https://www.legislation.gov.uk/uksi/2023/1279/contents/made).

DLUHC recognises that homeowners can sometimes experience challenges when looking to install low carbon heating, particularly heat pumps, in listed buildings and in conservation areas. This is because most heat pump installations in listed buildings and in conservation areas require prior permission, and where permission is required, local guidance can be inconsistent (as discussed elsewhere in this review) and often any conditional remediations proposed can be prohibitively expensive. Remediations might include an acoustic enclosure reducing heat pump noise, or an aesthetic enclosure sympathetic to the character of the property.

DESNZ commissioned an independent review of noise emissions from air source heat pumps2 to determine whether existing permitted development rules in England are fit for purpose and in keeping with progress to make heat pumps quieter. The research included a literature review, household survey, and interviews with key stakeholders, including Local Planning Authorities, heat pump manufacturers, heat pump installers, and industry bodies. Although listed buildings were not included in the scope this research, the principles of best practice on noise mitigation and installation are relevant across housing archetypes.

The review of noise emissions suggested revisions to the current planning regulations to best reflect the latest evidence; including strengthening the noise assessment document and removing some of the conditions in the current permitted development rights. The permitted development right does not apply to listed buildings or land within their curtilage.

Government is taking action as a result of these research findings and MCS have opened a consultation on changes to the MCS 020 Standard, which is the noise assessment referenced in permitted development rights, based on the recommendations of the research. At the Chancellor's Autumn Statement on 23 November 2023, it was announced that government would consult on amending the existing permitted development right for air source heat pumps to remove the requirement that all parts of the development must be at least one metre from the property boundary. Further details on the consultation will be announced in due course.

Historic England fully supports urgent climate action. Climate action and heritage protection are compatible goals and Historic England is committed to supporting decision-makers to help them deliver climate change mitigation and adaptation in the historic environment. It believes that it is not a question of 'if' change can be accommodated to enable climate change mitigation and adaptation, it is a question of 'how', and believes that every historic building can become more energy efficient.

To help local planning authorities and others involved in the planning process, Historic England is consulting on a Historic Environment Advice Note (HEAN) on Climate Change and Historic Building Adaptation. The HEAN includes advice on the common types of changes that householders may wish to carry out to reduce carbon emissions and improve the energy efficiency of historic homes, including advice on the permissions and consents needed. The HEAN also includes advice to help decision-makers determine proposals for energy efficiency measures in historic buildings, and advice on how local plans and other planning mechanisms can deliver a positive strategy for historic buildings that proactively supports climate action. Providing greater clarity at the outset to those living in historic homes on their options and the associated planning requirements, and improved advice to decision-makers on taking balanced decisions, will facilitate consistent and faster decision-making.

2.4. Future commitments

Engagement with stakeholders and the evidence assessed in this review has made it clear that the planning system, whilst not a significant barrier to the installation of energy efficiency measures, can be streamlined further to help householders to make energy efficiency improvements and install low carbon heating technologies within the historic homes they own and inhabit.

The current work outlined above will support this ambition, but it is clear from the review that more is needed to enable energy efficiency improvements in listed buildings and homes in conservation areas and the government is keen to take further action.

First, as part of the implementation of National Development Management Policies following Royal Assent of the Levelling-up and Regeneration Act, DLUHC will create new National Development Management Policies (NDMPs), including a policy specifically for improvements to historic buildings. This policy will be integrated into the wider suite of heritage National Development Management Policies which will replace current policy affecting decision making in chapter 16 of the National Planning Policy Framework. In doing so, this will help to ensure greater certainty and consistency about decisions on applications for energy efficiency improvements affecting listed buildings and buildings in conservation areas

across England. The government will consult on this new policy as part of its development of National Development Management Policies.

Second, the review has demonstrated there is a significant appetite for increasing the use of Local Listed Building Consent Orders to provide upfront listed building consent for certain common energy efficiency improvements on listed buildings so owners can make these improvements without the need to apply for consent. There is not, however, a clear consensus from stakeholders about how and when Local Listed Building Consent Orders should be used to support these energy efficiency improvements. In particular, it will be important that these orders do not permit energy efficiency measures which harm the significance of listed buildings.

As a first step, DLUHC will consult on the opportunities for using Local Listed Building Consent Orders to support energy efficiency improvements on listed buildings. The consultation will specifically ask about:

- the role for Local Listed Building Consent Orders prepared by local planning authorities; and
- the potential for a Listed Building Consent Order made by the Secretary of State which would grant listed building consent for certain improvements across England.

To support this, subject to the outcome of the consultation, Historic England will continue to work with local planning authorities that wish to develop exemplar Local Listed Building Consent Orders building on best practice.

Finally, to provide greater certainty to local planning authorities and applicants in the shorter-term Historic England will publish a final Historic Environment Advice Note (HEAN) on Climate Change and Historic Building Adaptation.

3. Local authority skills, training, and capacity

3.1. Evidence and issues

Roundtable participants at all four events raised the issue of skills, training and capacity within local planning authorities as a significant barrier to securing timely planning and listed building consent for energy efficiency improvements.

Statistics published by the UK government on planning applications (https://www.gov.uk/government/statistical-data-sets/live-tables-on-planning-application-statistics) in showed that, of the applications for listed building consent (to alter or extend) made during the second quarter (July to September) of 2022, a total of 6,767 decisions were issued by local planning authorities; of those decisions, a total of 6,260 (or 93%) were granted consent. During the second quarter of 2022, 83% of applications for listed building consent, to alter or extend, were decided within the expected timescale of 8 weeks. These statistics do not capture abandoned or incomplete applications.

Whilst it is not possible to drill down further to identify how many of the above applications for listed building consent were for energy efficiency improvements, these figures indicate that there is a good prospect of achieving consent for alterations to listed buildings, but that decisions might be taking longer than necessary to be issued in some cases.

In Historic England's 2023 Local Authority Staffing Survey, 59% of responding local authorities said that the volume of casework involving decisions, advice, or pre-application enquiries about retrofit had increased over the last year. When asked to rate staff confidence in making decisions on energy efficiency retrofit only 16% said they felt very confident.

Local planning authorities have generally been facing challenges relating to increasing workloads. In the year ending December 2021, authorities received a total of 474,100 planning applications, up 15% on the year ending December 2020, although applications have started to decline in figures comparing 2021 and 2022. The government has increased planning fees (35% for major development, 25% for other applications) which will help to address cost pressures and provide additional income to improve capacity and capability generally, but fees are not charged for applications for listed building consent.

Many local planning authorities have no conservation officer and either share a post with neighbouring councils or buy-in heritage advice from consultants. In addition, the high turnover of staff in planning departments is exacerbated by the underlying problem of under-resourcing and lack of training.

Historic England's ongoing labour market intelligence survey has tracked the number of conservation experts employed in local authorities since 2006. In the period between the first survey in 2006 and the survey conducted in 2022, the number of conservation specialists fell by 43%. More recent data shows staff numbers continue to decline annually.

There is, however, no training available that specifically draws heritage, sustainability, and retrofit together. Where these skilled individuals exist, it is because conservation officers/ local planning authorities have pursued additional training in this area themselves. This lack of training was

noticeable to contributors who said that planners were not taking into account homeowners' experience of living in their homes. There was perceived to be a lack of confidence in today's planners and conservation officers to say 'yes' to proposed energy efficiency proposals. A more constructive approach from planners would help, the contributors said, co-designing solutions rather than standing back and leaving homeowners and occupiers to propose measures that were likely to be refused.

Roundtable attendees shared the view that installing energy efficiency measures in listed homes was perfectly practical but that conservation officers were not always interested in the Net Zero agenda, instead being entirely focused on short-term heritage concerns. The point was made that excessive restrictions in the short-term risk making buildings unusable in the longer term. One contributor observed that too stringent an interpretation of 'alteration' was bringing more into the realm of listed building consent than was ever envisaged when the legislation was drawn up. Similar to points made previously in this review about inconsistent application of guidance, it was widely held that there is a 'postcode lottery' regarding conservation officers' and planners' opinions; what is permissible in one area is discouraged in another.

3.2. Current action

The additional £65 million announced by the Chancellor at the 2021 Spending Review will enable investments in improvements to the planning system, (delivered through a new digital system), that communities can easily engage with and that will deliver better outcomes for the environment, our neighbourhoods, and quality of design.

While many of the reforms themselves can be enacted by legislative and policy changes, we also need to support local authorities to develop critical skills and build capacity.

The UK government is asking councils to do more: embrace digitalisation, implement a more streamlined plan-making and decision-making process, and put locally led design at the heart of planning.

Supporting capacity and capability

We want to encourage good-quality, well-designed development and infrastructure that strengthens the connections between people and their communities.

Highly skilled planners are fundamental to proactive local planning, securing high quality local design and placemaking and running an efficient planning service for the communities they serve. They are invaluable in creating

communities that people are proud to call home, in beautifully designed places.

However, the government recognises that local authorities, as well as the wider planning sector, face serious capacity and capability challenges which have resulted in delays, including in the processing of planning applications, impacting on homeowners and developers alike.

To address this, we have developed a comprehensive Planning Capability and Capacity programme which provides the direct support that is needed now, delivers funding to local government, providing upskilling opportunities for existing planners, and further developing the future pipeline into the profession.

The £29 million Planning Skills Delivery Fund has now been launched and will help planning authorities deal with the backlog of planning applications as well as support them with upskilling ahead of the forthcoming changes to the planning system. We have also announced £13.5 million for a Planning Super Squad that will deploy teams of specialists into local planning authorities to accelerate the delivery of homes and development.

There is also funding to Public Practice, a social enterprise in the built environment sector, as well as to the Royal Town Planning Institute (RTPI) and the Local Government Association (LGA) to provide new pathways in to planning. DLUHC also continues to provide ongoing funding to the Planning Advisory Service to support the capacity and capability of local authorities. This includes providing specialist training and peer support.

As part of our wider approach to engaging with local planning authorities, DLUHC has funded over 100 local authorities to participate in pilots and pathfinder programmes covering a wide range of topics, ranging from digital local plans through to design codes and Neighbourhood Plans. Pilots allow us to understand more about the practical implications of policy and where challenges are faced by local planning authorities, including skills and capacity challenges and constraints.

We have also increased planning fees by 35% for major applications and 25% for all other applications. An increase to planning fees will help provide additional resources to support the delivery and improvement of planning services. We are also continuing to support local authorities through the development of new digital tools that will help to make planning processes more efficient.

Historic England also supports the development of local authority planning officers and heritage staff and is committed to improving this service. Historic England has developed a new online training service that will allow training to be delivered to all local planning authorities quickly, disseminating quality training effectively and efficiently. A climate change training package is in development to share the advice set out in the final

HEAN on climate change and historic building adaptation, and to train local authority decision-makers on applying the advice.

Planning fees and resourcing local planning authorities

When it comes to fees and resources:

- it is vital that we have well-resourced, efficient, and effective planning departments, capable of delivering a planning service that both local people and applicants expect, and which will be able to implement our planning reforms
- DLUHC recognises many local authorities, as well as the wider planning sector, are facing capacity and capability challenges
- planning application fees provide essential income for local planning authorities to be able to deliver their planning service. Currently, the income from planning application fees does not cover the cost of processing those planning applications, leaving the taxpayer to make up the difference
- DLUHC recently increased planning fees for major applications by 35%, and fees for all other applications by 25%.

3.3. Future commitments

As part of our work, we will need to consider the capacity and capability in specialist areas of local planning authorities, including heritage teams.

As such, the following actions will be taken:

- DLUHC will work to ensure that the evidence gathered as part of this review of the capacity and capability issues in the heritage specialism within local authorities is fed into the department's work on planning capacity and capability.
- Historic England will deliver training for local authority staff, including through its new online training system, on how to apply advice set out in the final HEAN on Climate Change and Historic Building Adaptation.
- Historic England will improve the targeting and promotion of its broad training offer (including written guidance, training and technical webinar series) to ensure maximum impact on professional audiences.

4. Guidance and Information (for homeowners and occupiers)

4.1 Evidence and issues

Feedback from stakeholder engagement made clear that a real barrier for many homeowners in listed homes and those in conservation areas was a lack of effective, clear, non-technical guidance and information. This was highlighted as one of the first tools homeowners look for when considering energy efficiency measures for their historic homes. While there is a wealth of guidance and information available, it is often complex, sometimes contradictory between organisations, and is not easy to understand for most homeowners. Accessibility of credible guidance and information is therefore a key aspect of enabling historic home retrofit.

Historic England's 2022 Survey of Listed Building Owners and Occupiers (https://historicengland.org.uk/research/current/social-and-economic-research/listed-building-owners-survey/#2022) found that over half (54%) of owners and occupiers think it is difficult to find reliable guidance about how to retrofit listed homes. The range of information sources on retrofitting which owners turn to is broad, varied, and includes information from local councils (16%), architects (14%), builders (13%), professional organisations (9%), Historic England (8%), UK Government sources (7%), and local heritage organisations (4%).

The findings of Historic England's 2022 survey reflect the views of stakeholders at roundtables held for this review. Contributors highlighted the multiple sources of available information, with people having to rely on social media for advice when they cannot access a local conservation officer. Despite the wealth of information, there is no one dominant source. While stakeholders acknowledged the quality of some guidance, they observed that there was also inconsistency between publications.

Where free, credibly sourced guidance did exist, it was often thought to be overly technical and not designed for homeowners, or alternatively too generic and therefore not helpful for considering specific circumstances. Meanwhile, seeking independent, impartial, tailored advice can be expensive. Many homeowners are therefore left uncertain about what they are able to do and whether they need permission or consent from their local planning authority to do it.

Roundtable participants questioned whether Energy Performance Certificates (EPCs) were fit for purpose in considering the unique needs and attributes of historic buildings. Recommendations from EPCs are often used by homeowners to inform retrofit activities, but, stakeholders argued, are not effectively designed to consider the more specific physical needs of traditionally constructed buildings, and risk recommending costly, ineffective, and/or damaging interventions. This could lead to maladaptation, harming the building fabric, undermining the character of the property, and causing potential health and wellbeing issues for occupants.

4.2. Current action

Digital resources

For many, digital information is an important source of retrofit guidance. In Summer 2022, the government launched a digital service, find ways to save energy in your home (https://www.gov.uk/improve-energy-efficiency), on GOV.UK. The service provides impartial and trusted advice to help people make their homes greener and cheaper to run. It includes high-level, tailored advice and information on retrofit recommendations suitable to the home of the individual user.

The digital tool will be continually improved to ensure consumers can access the most relevant, tailored recommendations to help improve their homes. The ambition is for the GOV.UK site to become an easy-to-access and trusted source of retrofit information and guidance for users at the start of their retrofit journey and will continue to enhance the offer for consumers.

Historic England, as the government's advisor on heritage matters, is likewise committed to improving its advice and guidance for people living in historic homes, to help them choose the most appropriate and effective energy saving measures for their properties, and to help them understand the various consents and permissions that may be needed.

Historic England began improving access to its advice and guidance in 2022 with a refresh of its Your Home (https://historicengland.org.uk/advice/your-home) webpages, which provide guidance for homeowners and occupiers of historic homes. Further updates have continued throughout 2023, including improvements to pages related to energy saving measures and reducing carbon in the home, information on what effects energy efficiency in historic homes, and the importance of repair and maintenance, which is vital to achieving energy efficiency in historic buildings. The links between the GOV.UK digital service and Historic England's Your Home pages will also be improved to provide clearer signposting to relevant advice.

Other sources of information

In addition to its online provision (https://www.gov.uk/improve-energy-efficiency), the UK Government has launched a phoneline service (telephone: 0800 098 7950) that will help provide consumers in England and Wales with tailored and impartial information about how to improve the energy performance of their homes. Through this service, individuals who cannot access the digital service on the GOV.UK website, need further assistance, or are still unsure about making home energy improvements, will receive bespoke telephone advice and support. This service is not currently designed to give guidance that is specific to historic homes, but can still be accessed by consumers seeking more general retrofit advice

Historic England currently funds a technical advice line (https://www.spab.org.uk/advice/technical-advice-line) (telephone: 020 7456 0916) run by the Society for the Protection of Ancient Buildings (SPAB). The advice line is a free and confidential service open to anyone with a technical enquiry relating to traditional buildings.

Pre-application advice

In addition to online advice and guidance, Historic England also provides direct pre-application advice to homeowners in relation to Grade I and II* listed buildings, advice to local authorities on applications relating to proposed changes to Grade I and II* listed buildings, and on local plans and some conservation area plans.

Where planning permission is required, pre-application advice with the local planning authority, statutory consultees, elected members or the local community can offer significant potential to improve both the efficiency and effectiveness of the planning system and improve the quality of applications and their likelihood of success. Applicants can arrange pre-application advice through their local planning authority. Further information on the benefits of pre-application advice can be found online through the Planning Practice Guidance (https://www.gov.uk/guidance/before-submitting-an-application).

Further research

Historic England is improving its existing energy efficiency evidence to inform further advice on measures appropriate for traditional buildings. Research (https://historicengland.org.uk/images-books/publications/air-source-heat-pumps-historic-buildings/) has been carried out on the efficiency of air source heat pumps in small-scale historic buildings, and Historic England will be publishing new guidance on this subject for non-domestic buildings. Historic England guidance on solar panels has already been updated to include advice on mitigating the risk of fire.

To provide more support locally, DESNZ has launched a series of local, in-person advice demonstrator projects (https://www.gov.uk/government/publications/local-energy-advice-demonstrator-competition-successful-projects) across England in 2023. These projects will create opportunities to test and learn from different approaches and to address the advice needs of specific groups; for example, homes that are more complex to decarbonise, which often include listed buildings and homes in conservation areas.

Energy Performance Certificates (EPC)

EPCs provide essential information on a property's energy use, typical energy costs, and make recommendations about how to reduce energy use and save money. Some historic buildings are exempt from having an EPC

where, in order to comply with certain minimum energy efficiency requirements, they are required to install energy efficiency recommendations that would unacceptably alter their character or appearance. This can lead to homeowners being unsure as to whether they are exempt from the need to have an EPC, as they do not know what recommendations are likely to be made for their property. The EPC guidance states that they should contact building control where they are in doubt as to whether they are exempt.

Where a listed domestic private rented property, or a property within a conservation area, is required to have an EPC, that property will be within the scope of the Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015 ("PRS Regulations") and will need to be compliant (complying means either being at a minimum of EPC band E, or having a valid exemption registered for it). These PRS Regulations make provisions for a number of exemptions to ensure that the costs and circumstances relating to energy performance improvements are proportionate and fair to landlords with different types of properties. More information about this can be found in the Guidance on PRS exemptions and Exemptions Register evidence requirements (https://www.gov.uk/government/publications/private-rented-sector-minimum-energy-efficiency-standard-exemptions/guidance-on-prs-exemptions-and-exemptions-register-evidence-requirements). These exemptions seek to ensure that the costs and circumstances relating to energy performance improvements are proportionate, and fair to landlords as far as possible.

The government is committed to making the methodology underpinning the EPC more accurate, robust and fit for purpose to support our commitments to Net Zero. A consultation is planned on reforms to the Energy Performance of Buildings (England and Wales) Regulations 2012 in the coming months, led by DLUHC, in partnership with DESNZ. These reforms may include proposals to improve the energy efficiency recommendations on EPCs for historic buildings with the aim ensuring that EPCs are better able to support the retrofit of historic homes.

Historic England is supporting government in improving EPCs through its advice on the review panel for Reduced Data Standard Assessment Procedure (RdSAP) 10.2, the methodology informing EPCs, and by offering technical support to inform the next iteration, SAP 11.

Historic England has an ongoing programme of research to support technical development and to provide advice to help homeowners to understand the use of EPCs. A range of training webinars on the subject are available through Historic England's website (https://historicengland.org.uk/services-skills/training-skills/training/webinars/recordings/).

Furthermore, Historic England has recently commissioned research using University College London (UCL) 3D Buildings Information Model for

conservation areas, to help quantify the energy usage of buildings in conservation areas to inform improvements to EPCs.

4.3. Future commitments

This chapter highlights the need for improved guidance and information to be made available to homeowners and the breadth of work by government and Historic England already in train. Additionally, the following actions will be taken:

- DLUHC will work with Historic England to set out clearly which energy efficiency measures need planning permission or listed building consent; this information will be hosted on GOV.UK
- DESNZ will continue to improve the user journey for our digital service 'find ways to save energy in your home' on GOV.UK to better redirect owners of historic homes to the right information and guidance on Historic England Your Home webpages
- DLUHC will look to consult on EPC reforms in the coming months
- Historic England will further improve its evidence, advice and guidance on improving the energy efficiency of traditional homes by:
  - continuing to review and refresh its homeowner advice to make the language and format more accessible, including the provision of a retrofit glossary of terms
  - reviewing its published advice and technical guidance and promoting it to wider audiences, including via external partners with a remit for energy efficiency
  - working with heritage sector partners to improve existing technical advice services for people living in traditional homes so that they have access to better advice
  - continuing to research the way heritage and traditional buildings perform to provide advice, including examples, on the most appropriate and effective energy efficiency options based on building construction and use
  - continuing to develop evidence to inform and advise on the review of EPCs to ensure they can be a useful tool to inform energy efficiency in traditional buildings
  - continue to support government departments to achieve the key outputs of the EPC Action Plan

5. Construction industry skills, training, and capacity

5.1. Evidence and issues

To support the transition to Net Zero, a skilled workforce is required to effectively assess, design and undertake works to improve the UK's historic homes and buildings. A number of skills and training challenges exist that require partnership from government and industry to address, but these challenges also present green job opportunities.

The skills issue within the heritage sector was repeatedly raised during the roundtables. Contributors identified the loss of skills in the heritage construction industry as a key barrier to adapting historic homes. This view is supported by the Construction Industry Training Board (CITB) in England (https://www.citb.co.uk/about-citb/construction-industry-research-reports/construction-skills-network-csn/), Scotland and Wales Construction Skills Network Industry Outlook 2023-27 (https://www.citb.co.uk/about-citb/construction-industry-research-reports/construction-skills-network-csn/), published January 2023, which suggests that the heritage sector is facing an unprecedented skills crisis in two ways: the skills gap and workforce shortages.

There is also a need to upskill mainstream construction workers to ensure the industry understands appropriate methods to adapt historic buildings. The CITB report Building Skills for Net Zero (https://www.citb.co.uk/about-citb/construction-industry-research-reports/search-our-construction-industry-research-reports/building-skills-for-net-zero/), published in 2021, suggested a need to train around 12,000 construction workers a year to 2025, with annual recruitment ramping up by 30,000 each year in the following five years to meet the government's Net Zero targets and achieve a 'fabric first' approach to retrofit, indicating a need for rapid and vast deployment of training. Furthermore, the Industry Outlook 2023-27, (https://www.citb.co.uk/about-citb/construction-industry-research-reports/construction-skills-network-csn/) published in January 2023, suggests an extra 225,000 construction workers may be needed by 2027 to support the trajectory of future labour needs.

Building on the CITB model, recent heritage-specific research shows that more than 105,000 new workers, including 14,500 more electricians and 14,300 more plumbers, will be needed to work solely on decarbonising the UK's historic buildings every year for the next three decades for the UK to meet its 2050 net zero target (Capital Economic, 2023). Retrofitting the UK's historic buildings could generate £35bn of economic output a year while

creating new construction jobs and supporting the country's Net Zero ambitions, according to the Heritage and Carbon report.

The skills gap refers to a disparity between workforce skill type, level and capacity and market requirements. Roundtable attendees noted that in their experience, existing construction industry skillsets are not usually sufficient to appropriately retrofit historic buildings. This is because construction training rarely includes working with traditional, existing buildings, traditional and sustainable materials, or with traditional building techniques. Instead, construction training today focuses on newbuilds, modern building materials and the respective skills required.

Alongside these concerns, reflections were shared on how this should be viewed as an opportunity to boost the 'green economy'. As well as outlining some of the key challenges presented by the current gap in skills, the recent 2023 Heritage & Carbon: Addressing the Skills Gap report (https://www.grosvenor.com/heritageandcarbon) backs this claim, outlining how "heritage can, and should, support green jobs, and play a key role in the transition to a green economy".

Multiple accounts from roundtable attendees alluded to a shortage of appropriately skilled contractors leading to project delays, and in some instances resulting in the installation of unsuitable measures. Additionally, it was noted that the few skilled contractors in the market preferred larger projects to work on, leaving householders struggling to find reliable and suitably skilled people, especially in rural areas. Historic England's 2022 Survey of Listed Building Owners and Occupiers (https://historicengland.org.uk/research/current/social-and-economic-research/listed-building-owners-survey/#2022) supports these findings; the survey results found that over half expected that it would be difficult to find construction professionals who could advise them on retrofitting.

Further regional analyses have highlighted the skills shortages in retrofitting, both now and in the future. A 2021 Retrofit Skills Market Analysis for the West of England Combined Authority (https://www.westofengland-ca.gov.uk/wp-content/uploads/2021/07/WECA_Green-Jobs-and-Skills_Retrofit_Report-1_Final_01_06_2021.pdf) (PDF, 2.6 MB) showed the scarcity of TrustMark registered retrofit installers even in the vicinity of a market as substantial as Bristol and Bath. In the North East and Yorkshire, meanwhile, a 2022 domestic retrofit skills needs assessment commissioned by the Local Enterprise Partnership (https://evidencehub.northeastlep.co.uk/domestic-retrofit-skills-needs-assessment) found a shortage of 66,000 full-time equivalent jobs would need to be filled if the 2050 target for Net Zero was to be reached.

Historic England recently published local data on the estimated need for retrofitting skills to deliver Net Zero for England's historic buildings (https://historicengland.org.uk/advice/climate-change/delivering-net-zero-local-data-demand-for-retrofitting-skills). The new data set is intended to support local authorities and relevant organisations on the requirements for retrofitting

historic buildings within a given local authority. For example, it is estimated Greater Manchester needs around 5,000 workers to retrofit the city region's 311,000 buildings built before 1919, generating approximately £570m of direct economic output every year.

5.2. Current action

The government recognises the need for a skilled, competent, and robust workforce to deliver the improvements and adaptations to historic buildings necessary to meet our Net Zero targets. Specialist skills are needed for retrofitting and adaptation, beyond those needed for more general retrofit, as historic homes utilise both materials and techniques not often taught in conventional construction training. Failure to build and deploy the right specialist skillsets risks damage to the fabric and character of our existing building stock, as well as incurring additional expense to correct mistakes or risks to health.

As well as addressing the skills gap, proactive steps are also required to address skill shortages. As outlined in DESNZ's 2021 Heat and Buildings Strategy (https://www.gov.uk/government/publications/heat-and-buildings-strategy), the government is committed to creating the low carbon workforce we need. This requires investment in skills, both through retraining and upskilling the existing workforce and developing the next generation of skilled workers.

If retrofit is carried out by those who do not have the necessary skills, there is a higher risk of poor outcomes, ranging from a performance gap, through issues with mould and damp which could have health implications, to structural damage. This can have knock on consequences by undermining consumer confidence and decreasing trust in installers. This is true of all retrofit but the risks are even higher for specialist retrofit methodologies where the pool of suitable qualified installers is smaller. Consumers may need to support to ensure that their installer is adequately qualified or to know what consumer protection should be available to them.

Addressing the Skills Gap

In March 2023, DESNZ announced an additional £5 million to support low carbon heating training (https://www.gov.uk/government/news/14-million-cash-boost-to-accelerate-rollout-of-low-carbon-heating), expected to support around 10,000 training opportunities. This is in addition to the £15 million committed to skills in the energy efficiency and low carbon heating sectors since 2020 through the Home Decarbonisation Skills Training Competition, supporting over 16,000 training opportunities for people working in the energy

efficiency, retrofit and low carbon heating sectors in England. This will help grow the retrofit supply chain.

A new £8.85 million phase of the Skills Training Competition (https://www.gov.uk/government/news/thousands-of-low-cost-training-spaces-available-in-boost-to-green-jobs-sector) launched in July this year and covers insulation installation and retrofit professional qualifications. It is expected that the funding could result in up to 8,000 training opportunities. This looks to build on the initial progress made through previous programmes to support skills and aims to build the workforce required to meet our Net Zero targets.

Training being delivered includes a Level 3 Award in Energy Efficiency Measures for Older and Traditional Buildings which directly supports learners to achieve accredited training in the sympathetic and effective retrofitting of traditional buildings. Historic England has carried out research into the availability of, demand for, and barriers to delivering the Level 3 Award due to its crucial role in upskilling existing, non-heritage specialist construction workers and is considering how to address the findings. Historic England is also a member of the Trailblazer group (https://www.instituteforapprenticeships.org/developing-new-apprenticeships/trailblazer-group/) developing the occupational standard for the retrofit coordinator.

Government is also working with key industry bodies to consider what other actions are necessary both from industry and government to continue to grow this industry.

In response to the Heritage and Carbon: Addressing the Skills Gap report (https://www.grosvenor.com/heritageandcarbon), government is committed to working with the wider sector to address these recommendations. This includes, ensuring future retrofit programmes take on board the considerations of historic buildings and specific requirements around training. Historic England is supporting Local Skills Improvement Plans (LSIPs) developed by Employer Representative Bodies (ERBs) to engage with local retrofit skills needs and support ERB retrofit priorities to ensure they are delivered appropriately.

Historic Environment Skills Forum

As part of the challenge to ensure we have a trained and available workforce in place, Historic England, as the government's advisor on heritage matters, and the heritage sector have convened the Skills Forum. Launched in November 2022 and led by a Steering Group made up of employers representing different occupational areas within the sector including construction, the aim is to provide a collective view of the skills challenges facing the sector, prioritise further action to tackle these, and through Action Groups, seek to deliver specific interventions that address the challenges.

National Retrofit Hub

Several organisations are already working in the retrofit sector to fulfil some of the proposed role for Retrofit Hubs. This includes the five, government funded local Net Zero Hubs and TrustMark, the government endorsed quality mark for retrofit. The Construction Leadership Council have launched a National Retrofit Hub focused on industry activity and we are aware of the consumer offer from some businesses for retrofit management services, offering assistance with the process of determining which measures are appropriate for their home and joining them up with reputable and high-quality tradespeople and, in some cases, links to finance.

DESNZ continues to work with the various organisations already undertaking this sort of activity, to consider whether more could be done and whether there is a role for further government support and signposting.

Standards

Energy efficiency measures installed under current government schemes (for example, the Energy Company Obligation Scheme (ECO) and Social Housing Decarbonisation Fund (SHDF)), must be done in accordance with the PAS 2035/2030 standards (https://knowledge.bsigroup.com/products/retrofitting-dwellings-for-improved-energy-efficiency-specification-and-guidance-3/standard) to ensure installations are done to the highest quality, protecting the consumer against poor workmanship. These standards were developed by British Standards Institute (https://www.bsigroup.com/en-GB/) (BSI) through an industry-led working group in response to the recommendations of the independent Each Home Counts review.

One of the aims of PAS 2035 is the protection and enhancement of the architectural and cultural heritage represented by the building stock. Protected buildings are defined in PAS 2035:2023 as a “building that is listed as of special architectural or historic interest or located in a designated conservation area”. For protected buildings, PAS 2035:2023 requires a full assessment to be carried out in accordance with the BS 7913:2013 Guide to the conservation of historic buildings (https://knowledge.bsigroup.com/products/guide-to-the-conservation-of-historic-buildings/standard).

To ensure the PAS 2035/2030 documents remain fit for purpose and reflect best industry practice, government sponsors BSI to undertake regular revisions to the PAS 2035/2030 documents. These revisions are drafted by a technical author which sits within a wider industry-led steering group. This steering group is comprised of individual industry experts, who represent specific key areas within the energy efficiency and home retrofit industry, including bodies from the heritage sector working closely with historic buildings. Each revision process includes a public consultation stage

providing an opportunity for the public to comment on proposed changes to the PAS 2035/2030 document.

The latest revision to the PAS 2035/2030 documents was published in September 2023 and is freely available for download on British Standards Institution webstore (https://www.bsigroup.com/en-GB/products-and-services/standards/). Making PAS 2035/2030:2023 freely available will increase accessibility of the document to retrofit professionals across the energy efficiency supply chain and encourage uptake of a 'whole house' retrofit approach, which minimises risks of unintended consequences and provides a high level of standard for homeowners.

In addition to the revision of PAS 2035/2030, BSI is developing BS 40104: Assessment of dwellings for retrofit which will aim to provide standardisation of the method of retrofit assessment described in PAS 2035 ensuring that the building is assessed prior to any retrofit work being designed or carried out. This is being developed with industry professionals and a representative at Historic England and is expected to go out for public consultation in early 2024.

5.3. Future commitments

The government is committed to supporting the industry to improve the availability of retrofit-related skills across the construction sector through the following actions:

- DCMS, Historic England and DESNZ will work together to ensure future programmes to support development and retraining of industry skills continue to address the specific requirements of historic buildings
- government, alongside partners in the heritage sector, to review the recommendations of the Heritage and Carbon Report and any implication for government policy
- continue to share Historic England's experience and grow its understanding of delivering heritage building skills work-based training and apprenticeships with interested parties and sector partners. This will be achieved through a range of mechanisms but primarily through the cross-sector Historic Environment Skills Forum
- work with awarding bodies and training providers to ensure that construction training and qualifications, including apprenticeship standards, cover traditionally constructed buildings and the use of traditional materials, focusing on the most impactful areas. This work will be connected to work that is already underway through the Institute for Apprenticeships and Technical Education's (IfATE) current review of occupational standards

- as identified in Heritage and Carbon: Addressing the Skills Gap report (https://www.grosvenor.com/heritageandcarbon), Historic England will continue to support Local Skills Improvement Plans (LSIPs) developed by Employer Representative Bodies (ERB) to engage with local retrofit skills needs and support ERB retrofit priorities to ensure they are delivered appropriately

6. Affordability and financial incentives

6.1. Evidence and issues

Challenges around the planning process, local authority and industry skills, training and capacity, and guidance for homeowners and occupiers explored above, all contribute to issues around affordability and cost of retrofitting historic homes, which stakeholders have identified as a key barrier to adapting historic homes.

It was noted that the affordability of retrofit was a widespread problem, impacting all homes, not just those considered 'historic'. Cost is routinely identified as a key barrier to deployment, in terms of upfront and running costs, as well concerns about long payback periods.

From a heritage perspective, Historic England's 2022 survey of owners and occupiers of listed buildings found that cost was a common barrier to retrofitting, more so than lack of knowledge, difficulty finding a contractor, the disruption of works, or concerns around damaging the character of the home.

When communicating concerns about scarcity of skills (see chapter 5 for more detail), roundtable contributors also raised concerns about scarcity of the needed traditional materials. It was raised that the lack of supply of both had knock-on consequences for costs, meaning historic home retrofit came with a higher price tag for consumers living in these homes.

Given the current economic climate, stakeholders have stressed (both in the roundtables and since) the impact of challenges with the cost of living, identifying this as an exacerbating factor in the deployment of retrofit, meaning fewer households are able to afford the required works. This, in combination with increased costs for historic home retrofit skills and materials, makes comprehensive retrofit action unobtainable for many householders.

In discussions on applications for listed building consent, it was raised that making an application carries no fee. However, roundtable contributors pointed out that there were hidden costs of an application including, pre-application advice charges, statements of significance from consultants, and architectural technicians' fees for drawing up the required detailed plans.

Given the disproportionate costs faced by owners of historic homes, stakeholders suggested further action and intervention from government was needed to rebalance and negate the additional costs, and therefore burden, of retrofit, where the occupants could be considered vulnerable or low income.

Stakeholder feedback on affordability and cost also referenced the VAT treatment of repair and maintenance services (subject to 20% VAT) and compared this to the zero-rate applied to new builds, which was introduced to increase housing supply. Some roundtable stakeholders noted that basic repairs and maintenance are an effective measure for improving the energy efficiency of a historic home (and an essential precursor to the installation of energy efficiency measures). Stakeholders pointed to the temporary zero-rating of VAT on energy-saving products (from 1 April 2022 until 31 March 2027) as an aid for improving the affordability of retrofit activities, and suggested that additional, complementary tax incentives could be considered for the specific needs of historic home retrofit. Some roundtable stakeholders expressed the view that retrofit measures for heritage buildings could be considered 'allowable expenses' for landlords when completing tax returns.

Tax policy is a matter for HM Treasury (HMT) and representations on tax issues are considered as part of the fiscal event process. Additional feedback received as part of this Review has been passed to HMT and HM Revenue and Customs (HMRC).

Although the UK tax system differs in important ways to the tax systems of other countries, and so international comparisons should be treated with caution, case studies from overseas can sometimes be a useful means of better understanding the circumstances under which financial incentives can be used to achieve specific outcomes. Indeed, stakeholders pointed to financial incentives in other jurisdictions as evidence that they can successfully stimulate economic activity in the heritage-related construction market, and improve the energy efficiency, whilst protecting the historic integrity of historic buildings. The Historic Tax Credit Scheme in the US was noted as an example of such a scheme, which incentivises individuals and organisations to undertake a substantial rehabilitation of a historic building by providing a 20% federal tax credit (https://www.congress.gov/bill/115th-congress/house-bill/1).

6.2. Current action

Cost is consistently identified as a key barrier to retrofit. As outlined in DESNZ's Heat and Buildings Strategy, published in 2021, the Department aims to put fairness and affordability at the heart of its approach, to ensure a just transition to Net Zero, which is fair and proportionate across the UK. DESNZ is continuing work to improve its approach to affordability.

Support available

Although not exclusively designed to support the upgrade and retrofit of historic homes, the government has put together a suite of measures to support the upgrade of homes with energy efficiency measures and low carbon heating systems, including, but not limited to the upgrade of low income homes through our current Energy Company Obligation schemes, ECO4 and the Great British Insulation Scheme, the Home Upgrade Grant (HUG), as well as retrofitting social housing as part of the Social Housing Decarbonisation Fund (SHDF).

The government is investing £6.6 billion over this Parliament on clean heat and improving energy efficiency in buildings, reducing our reliance on fossil fuel heating. In addition, £6 billion of new government funding (https://www.gov.uk/government/news/families-business-and-industry-to-get-energy-efficiency-support) will be made available from 2025 to 2028. This provides long-term funding certainty, supporting the growth of supply chains, and ensuring we can scale up our delivery over time.

The government introduced a four-year, £4 billion extension and expansion of ECO3, with ECO4 now accelerating our efforts to improve homes to meet fuel poverty targets. ECO4 supports low-income and vulnerable households, delivering multi-measure, whole-house retrofits. We estimate that over its four years, ECO4 will upgrade around 450,000 homes, most of them to EPC Band C. ECO4, began in July 2022 and will run until March 2026.

The government has also introduced further energy efficiency support through the Great British Insulation Scheme which is estimated to help around 300,000 households, reduce their energy bills in response to the global energy crisis and make our energy system more secure over the longer term by reducing energy demand. The scheme complements ECO4 and will predominantly deliver one insulation measure per home, with the aim of driving delivery of the most cost-effective insulation measures to a broader pool of households in the least efficient homes. Established in Summer 2023, the scheme will run until March 2026 and will be worth up to £1 billion, delivering an average household saving of around £300-£400 per year.

To support the deployment of heat pumps in homes and small non-domestic buildings, the Boiler Upgrade Scheme (BUS) offers grants of £7,500 for air

source and ground source heat pumps, and £5,000 for biomass boilers. This is one of the most generous schemes of its kind in Europe and the grant uplift introduced in October 2023 has improved access to the scheme by covering more of the upfront cost differences of a heat pump and ensuring that no property is left behind. Following successful delivery since the launch in May 2022, the BUS has been extended until 2028 with £1.5 billion of additional funding, helping more families move to clean, efficient heating.

The government has also announced a new £400 million energy efficiency grant, launching in 2025. It is envisaged that the grant will provide support for consumers who wish to upgrade their insulation to reduce their energy bills or their radiators where necessary to enable a heat pump to work best. The scheme is in early stages of development and more detail is to follow in due course.

The Home Upgrade Grant (HUG) awards funding to local authorities to provide energy efficiency measures and low carbon heating to low income households living in the worst quality, off gas grid homes in England to tackle fuel poverty and make progress towards Net Zero.

The second phase of HUG has made £630 million of grant funding available to successful local authorities. This is in addition to the £218 million that was made available to Home Upgrade Grant Phase 1, which closed in March 2023.

The government also awarded £287 million to local authorities through for the Local Authority Delivery Phase 3, which provided support low-income households heated by mains gas and closed in September 2023; as well as the £500 million awarded through the Local Authority Delivery Phases 1 and 2, which was available to all types and tenures of low-income households, and closed in 2022.

To build on the successes of both the LAD and HUG programmes, the government has announced a new local authority-led retrofit scheme, allocated £500 million from 2025 to 2028. Eligibility is expected to include over 5 million low-income households living in the worst performing (and coldest) homes in England both on and off the gas grid. This includes over 1 million low-income households off the gas grid who are currently eligible for the Home Upgrade Grant (HUG) programme.

The Social Housing Decarbonisation Fund aims to upgrade a significant amount of the social housing stock currently below EPC band C up to that standard, delivering warm, energy efficient homes, reducing carbon emissions and fuel bills, tackling fuel poverty, and supporting green jobs.

The SHDF Demonstrator, Wave 1 and Wave 2.1 have already committed over £1 billion combined to support social housing landlords to install energy efficiency measures and low carbon heating in social housing. In

addition, a new SHDF Wave 2.2 competition will allocate up to £80 million of grant funding from April 2024. The government has allocated a further £1.25 billion from 2025 to 2028, to provide further support for the retrofit of social homes in England, improving energy performance and lowering bills.

Historic homes and government support

To a varying extent across these schemes, historic homes have not featured significantly due, in part, to perceived challenges around obtaining any necessary permissions and carrying out potentially complex retrofits within the delivery windows available for these schemes. Some projects report having replaced historic homes (due to concerns about them being harder to treat or to decarbonise) with properties considered easier to treat, because of concerns about the time needed to obtain any necessary permissions.

Under the Local Authority Delivery (LAD) Scheme, the average cost thresholds by property type (£10,000 for owner-occupiers, and £5,000 for rented) have meant local authorities have needed to offset the costs of more complex, harder to treat properties where planning costs are incurred with a greater number of lower cost measures in conventional stock within permitted development. Many schemes have been set over a specific timeframe to make progress against fuel poverty targets and carbon budgets; however, owing to permissions needed to treat historic or complex homes, grant recipients have typically focussed on easier to treat homes to minimise the risk of under-delivery.

While not specific to historic homes, projects across the LAD Scheme, HUG, and SHDF have also reported that the approach of local authority planning departments to retrofit varies considerably, as discussed earlier in this review. The inconsistencies have been raised by installers across the country who have reported that they have experienced different responses for identical works proposed. Uncertainties or ambiguities about the scope of permitted development or need for listed buildings consents for certain measures (such as external wall insulation or air source heat pumps) have generated delays on projects, and in some cases is leading to lower levels of delivery. Furthermore, projects have reported that planners often have limited working knowledge of carbon reduction measures, technologies, and practical applications. This indicates a need for enhanced guidance to clarify and simplify the process, particularly in terms of which retrofit works fall into the category of permitted development.

These experiences have continued to highlight the need for early engagement with local planning authorities by individuals or organisations undertaking complex energy efficiency projects, particularly for historic buildings.

To further support local authorities and registered providers of social housing with these technical challenges on HUG and SHDF, DESNZ has

set up a Technical Assistance Facility (TAF). Externally this is marketed as the Home Upgrade Hub (HUH) (https://homeupgradehub.org.uk/) for HUG prospective applicants and as the Social Housing Retrofit Accelerator (SHRA) for SHDF. TAF focusses on building the capability, capacity and knowledge of prospective applicants to both schemes in delivering domestic retrofit. Local authorities who were interested in applying to the second phase of HUG received technical support through the Home Upgrade Hub. Applicants to SHDF have received similar assistance through the SHRA, including project development and technical advice around planning, and will continue to do so for SHDF Wave 2.2, which was announced in October 2023. Support from both services is intended to produce high quality retrofit applications and support access to funding and can be accessed by applicants at any stage during the development of their applications.

In light of the scheme delivery challenges with historic homes and government support, relevant government departments will continue to work together to explore how retrofit funding programmes can support complex-to-decarbonise homes and historic buildings.

Complex-to-Decarbonise homes research

The UK government is committed to ensuring that no-one is left behind in the transition to Net Zero, supplying solutions that work for all buildings, income groups, and housing types.

Buildings of all periods (including historic homes) can present a range of attributes that can add complexity to improving energy efficiency and utilising low carbon heating solutions because of materials, detailing, size, location and/ or availability of gas and electricity grid connections.

Therefore, research was commissioned by the Department for Energy Security and Net Zero (DESNZ) to develop a definition for housing stock for which the presence, and combination, of attributes and contextual factors can add complexity to improving energy efficiency and utilising low carbon heating solutions. Central to this is the development of a methodology identifying and measuring this stock, to simplify the upgrading of homes that may be at risk of being left behind in the transition to Net Zero.

The research was undertaken as a collaboration by the University College London Institute for Environmental Design and Engineering, and urban innovation agency, DG Cities, and concluded in August 2023.

This research aimed to create a definition for housing stock for which the presence, and combination, of attributes and contextual factors can add complexity to improving energy efficiency and utilising low carbon heating solutions.

The research consisted of:

- rapid evidence review to assess what evidence exists to identify CTD homes
- data survey to identify other literature that may not be publicly available
- interviews to explore the challenges of CTD homes and approaches to retrofit
- case studies to explore in detail some retrofit projects on CTD homes
- synthesis of findings from across the study to answer the research questions
- development of an identification framework for CTD homes using Python

A full description of the methods used can be found in in the CTD report annexes.

The research successfully introduces complex-to-decarbonise (CTD), terminology which emerged from the rapid evidence review of existing published evidence and key extensive engagement with key stakeholders. This definition can be used to identify and measure this stock, to simplify the retrofit of homes that may otherwise be at risk of being left behind in the transition to Net Zero:

Complex-to-decarbonise (CTD) homes are those with either one, or a combination of, certain physical, locational, occupant demographic, or behavioural attributes that prevent the effective decarbonisation of that home until they are addressed. These attributes may constrain the design and delivery of measures to improve energy efficiency, decarbonise heating, and realise occupant benefits (e.g., increased comfort and affordability of domestic heat and energy). These effects may be amplified by one or a combination of numerous system-level factors including financial (e.g., feasibility and affordability of measures), economic (e.g., supply chain and materials availability), and/or organisational capacity and capability (e.g., workforce skills).

The research found that historic homes, particularly homes with listed status, located in conservation areas, and traditionally constructed buildings, make up a significant proportion of the UK stock of CTD homes, due to the many elements to consider, including but not limited to: planning permissions, technical constraints and risks to damaging heritage value, particularly for breathability and aesthetic protection.

The research, including the case studies, found that these homes can be successfully retrofitted, but that there are complexities that may include additional costs and which require due care and knowledge to be applied in the retrofit. Interviewees emphasised the importance of strategies including:

- installing internal wall insulation (IWI) instead of external wall insulation (EWI).

- assessing and protecting natural ventilation
- carefully applying appropriate infill materials
- replacing window-panes while retaining heritage frames
- improving fabric and insulation through the use of traditional materials to preserve character
- enabling the reinstatement of traditional finishes and details

The government is currently carefully considering the findings of the research, which can be found at: Defining and identifying complex to decarbonise homes (https://www.gov.uk/government/publications/defining-and-identifying-complex-to-decarbonise-homes).

The research will support DESNZ in developing an approach (or set of approaches) that are mindful of the diversity of the UK building stock and which reflect the differences between historic buildings, and which also allow individuals to tailor their approach to decarbonisation depending on the building.

Other considerations around affordability and financial incentives

For those not eligible for government support, the government is also catalysing the market for green finance. The Green Home Finance Accelerator (GHFA), launched in October 2022, is providing up to £20 million in grant funding to support the development of innovative green finance products and services, enabling homeowners to decarbonise their homes and improve thermal comfort. The competition is also expected to leverage private investment into the home retrofit sector, increasing UK-wide economic opportunities and developing the energy efficiency and low carbon heating supply chains.

DESNZ has consulted on proposals for mortgage lenders to support homeowners to improve the energy performance of their properties and will publish the response in due course.

We have been clear throughout this review that we want to work with the heritage sector and industry to support owners of historic houses to make positive and proactive choices about how they can repair, maintain and adapt their homes for energy efficiency purposes. This is important for several reasons. Firstly, we want to ensure that historic homes are preserved and protected for the long term, so that they can be enjoyed and experienced by both the current and future generations. Sensitive and appropriate adaptation of historic homes to make them more energy efficient and better able to respond to climate change is a crucial part of this. For example, making it easier for historic homes to be fitted with appropriate insulation can avoid the risk of damp and mould undermining the integrity of the fabric of buildings, thereby contributing to the long-term preservation of important heritage assets.

Alongside the enduring significance of heritage protection, it is also vital that the historic built environment plays its part in contributing to government's broader Net Zero carbon agenda. The UK has the oldest building stock in Europe, and it is, therefore, right that we take steps to ensure that our historic buildings are supported to engage with, and make a positive contribution to, the net zero agenda. Exploring ways in which owners can be encouraged and supported to repair, maintain and adapt can also mitigate the longer-term risk of our historic buildings needing to be demolished, with the consequent release of embodied carbon that entails. Sensitive repair and maintenance also makes economic sense, ensuring that the potential for longer-term, more costly repairs is avoided.

Establishing robust and proportionate incentives that allow historic homes to be adapted to meet these differing challenges is key, and we are clear that that heritage protection is compatible and indeed complementary to support for the energy efficiency and climate adaptation agenda.

Financial incentives can also play a part in supporting householders to improve energy efficiency. A zero-rate of VAT on energy efficiency measures was introduced at the 2022 Spring Statement, running from 1 April 2022 to 31 March 2027. This applies to energy efficiency measures such as insulation, and low carbon heating, making it cheaper for people to invest in their properties and reduce their energy use. As announced at Autumn Statement 2023, the government will introduce legislation to expand the VAT relief available on the installation of energy-saving materials by extending the relief to additional technologies, such as water-source heat pumps, and bringing buildings used solely for a relevant charitable purpose within scope. These reforms will be implemented UK-wide from February 2024. A full response to the public call for evidence on the energy-saving materials VAT relief (https://www.gov.uk/government/consultations/vat-energy-saving-materials-relief-improving-energy-efficiency-and-reducing-carbon-emissions/call-for-evidence-vat-energy-saving-materials-relief-improving-energy-efficiency-and-reducing-carbon-emissions) was published on 11 December 2023. Additional points on tax policy put forward by stakeholders as part of the Adapting Historic Homes for Energy Efficiency review process have been passed to HMT and HMRC.

Looking at the international landscape, the government has also been examining some of the international schemes in place to support the preservation of historic buildings. As part of this work, the National Trust, the Department for Culture, Media and Sport, and University College London are supporting research into the potential effectiveness of the main international financial incentives schemes for repairing historic buildings. The research is expected to conclude early next year.

6.3. Future commitments

DESNZ will continue to consider the applicability of, and challenges faced by, historic homes as part of the schemes and support available.

The government will work with the heritage sector and industry to further examine the evidence base around cost and affordability as barriers to energy efficiency measures in historic homes, including examining the most effective and best value policy mechanisms for addressing the challenges identified.

DCMS will continue to work with DESNZ to explore how retrofit funding programmes can support complex-to-decarbonise homes and historic buildings.

DESNZ will publish the response the mortgage lender consultation in due course.

7. Summary and next steps

This review has helped us to better understand the practical barriers to installing energy efficiency measures and low carbon heating in historic homes. By identifying the key issues, we have been able to develop a package of measures which we know will have a real impact on the ground. This will make life easier for those who own and live in our historic homes while ensuring that an irreplaceable part of this country's heritage is protected for future generations to enjoy.

As part of the ongoing development of new policies to support the retrofit of historic homes, we will consider how our policies and decisions affect people who are protected under the Equality Act 2010 as part of the Public Sector Equality Duty considerations.

Government will continue to work closely with the sector and other organisations in ensuring that the ambitious target for achieving Net Zero by 2050 becomes a reality, and the steps outlined in this report and summarised in the table below, are our next steps in making it easier to improve energy efficiency whilst continuing to protect local amenity and heritage assets.

7.1. Summary of current actions and future commitments

No.	Government action	Responsible department/arm's length body (ALB)
Planning		
1	Delivery of planning reform through the Levelling-Up and Regeneration Act so that it supports good design and environmental outcomes better, is less complex, and easier to engage with	DLUHC
2	Implementation of the newly updated National Planning Policy Framework (NPPF), including a new policy to support energy efficiency improvements to existing buildings	DLUHC
3	Consult on changes to permitted development rights for heat pumps in England	DLUHC
4	Consultation on National Development Management Policies including specifically on improvements to historic buildings	DLUHC
5	Consult on the opportunities for greater use of Listed Building Consent Orders (LBCOs) to support energy efficiency improvements to listed buildings	DLUHC
6	Support Local Planning Authorities that wish to develop exemplar Local Listed Building Consent Orders	HE
7	Publish a Historic England Advice Note (HEAN) on Climate Change and Historic Building Adaptation to help decision-makers deliver climate action while protecting heritage	HE

No.	Government action	Responsible department/arm's length body (ALB)
Local authority skills, training and capacity		
8	Development of a new digital planning system	DLUHC
9	Funding for over 100 local authorities to participate in pilots and pathfinder programmes which identify challenges faced by local planning authorities, including skills and capacity challenges and constraints	DLUHC
10	£1m funding to Public Practice to support their work in helping councils to recruit and develop skilled planners, increase awareness about careers in local government and share best practice around improving communities in the public sector	DLUHC
11	Ongoing funding to the Planning Advisory Service to support the capacity and capability of local authorities	DLUHC
12	Provide new funding for the RTPI Future Planners Bursary Scheme - will see more than 50 young professionals offered a bursary to study an RTPI fully accredited planning masters	DLUHC
13	Development of a new online training platform that can provide training to local authorities	HE
14	Design a suite of targeted interventions to support the	DLUHC

No.	Government action	Responsible department/arm's length body (ALB)
	development of critical skills and to build capacity across local planning authorities	
15.	Evidence gathered as part of this review into the capacity and capability issues in the heritage specialism will be fed into wider work on local authority planning capacity and capability	DLUHC
16	Develop and deliver online training for Local Authority staff to help them apply the Historic England Advice Note (HEAN) on Climate Change and Historic Building Adaptation in decision-making	HE
17	Improve the targeting and promotion of training (including written guidance, training and technical webinar series) to ensure maximum impact on professional audiences	HE
Guidance and information		
18	Launched a digital service, find ways to save energy in your home, on GOV.UK	DESNZ
19	Launched a phoneline service to provide consumers in England and Wales with tailored and impartial information about how to improve the energy performance of their homes	DESNZ

No.	Government action	Responsible department/arm's length body (ALB)
20	Refreshed the Your Home webpages, which provide guidance for homeowners and occupiers of historic homes	HE
21	Funded technical advice line run by the Society for the Protection of Ancient Buildings (SPAB). The advice line is a free and confidential service open to anyone with a technical enquiry relating to traditional buildings	HE
22	Provision of pre-application advice to homeowners in relation to Grade I and II* listed buildings, advice to local authorities on applications relating to proposed changes to Grade I and II* listed buildings, and on local plans and some conservation area plans	HE
23	Research on the efficiency of heat pumps in small-scale traditional buildings to support the development of further advice, and updated guidance on mitigating the fire risk from solar panels	HE
24	Developing a series of local, in-person advice demonstrator projects across England	DESNZ
25	Developing proposals to improve EPC metrics, taking account of Climate Change Committee advice. This will aim to ensure that EPCs are better able to support the retrofit of historic homes	DLUHC/DESNZ
26	Set out clearly which energy efficiency measures need	DLUHC/HE

No.	Government action	Responsible department/arm's length body (ALB)
	planning permission or listed building consent; this information will be hosted on GOV.UK	
27	Improve the digital service 'find ways to save energy in your home' on GOV.UK to better redirect owners of historic homes to the right information and guidance on Historic England's Your Home webpages	DESNZ
28	Consult on reforms to Energy Performance Certificate	DLUHC
29	Reviewing published advice and technical guidance and promote it to wider audiences, including via external partners with a remit for energy efficiency	HE
30	Work with heritage sector partners to improve existing technical advice services for people living in traditional homes	HE
31	Research the way heritage and traditional buildings perform to provide advice, including examples, on the most appropriate and effective energy efficiency options based on building construction and use	HE
32	Inform and advise the review of Energy Performance Certificates (EPCs) to ensure they can be a useful tool to inform energy efficiency in traditional buildings	HE
33	Support government to achieve the key outputs of the Energy Performance Certificate Action Plan	HE

No.	Government action	Responsible department/arm's length body (ALB)
Construction industry skills, training and capacity		
34	Announced an additional £5 million to support low carbon heating training, expected to support around 10,000 training opportunities. Training includes an NVQ Level 3 Award in Energy Efficiency Measures for Older and Traditional Buildings	DESNZ
35	Developing following phases of skills and training support (up to £15m) for retrofit and energy efficiency	DESNZ
36	Research into the availability of, demand for, and barriers to delivering the Level 3 Award in Energy Efficiency Measures for Older and Traditional Buildings	HE
37	Launched the Historic Environment Skills Forum	HE
38	Five government funded local Net Zero Hubs and TrustMark, the government endorsed quality mark for retrofit.	DESNZ
39	Sponsorship of PAS 2035/2030	DESNZ
40	Providing advice to support development of a British Standards Institute BS40101 A Retrofit Pre-Assessment Guide, and the Royal Institute of Chartered Surveyors (RICS) retrofit assessment working group	HE

No.	Government action	Responsible department/arm's length body (ALB)
41	DCMS, Historic England and DESNZ will work together to ensure future programmes to support development and retraining of industry skills continue to address the specific requirements of historic buildings	DCMS/DESNZ/HE
42	Government, alongside partners in the heritage sector, to review the recommendations of the Heritage and Carbon Report and any implication for government policy	DCMS/DESNZ/DLUHC
43	Build further understanding and share experience of delivering work-based training and apprenticeships in 'heritage building skills' with interested parties and sector partners	HE
44	Work with awarding bodies and training providers to ensure that construction training and qualifications, including apprenticeship standards, cover traditionally constructed buildings and the use of traditional materials, focusing on the most impactful areas. This work will be connected to work that is already underway through the IfATE's current review of occupational standards	DfE / HE
45	As identified in the Heritage and Carbon: Addressing the Skills Gap report, Historic England will seek to support LSIPs developed by Employer Representative Bodies (ERB) to engage with local retrofit skills needs and support ERB retrofit priorities to	HE

No.	Government action	Responsible department/arm's length body (ALB)
	ensure they are delivered appropriately	
Affordability and financial incentives		
46	Funding scheme delivery, including Local Authority Delivery Scheme (LAD), Home Upgrade Grant (HUG), Social Housing Decarbonisation Fund (SHDF), Public Sector Decarbonisation Scheme (PSDS), Boiler Upgrade Scheme (BUS), Great British Insulation Scheme (GBIS), Energy Company Obligation (ECO), new energy efficiency grant, new local authority-led retrofit scheme	DESNZ
47	Scheme delivery support: Social Housing Retrofit Accelerator (SHRA), Technical Assistance Facility (TAF)	DESNZ
48	Complex-to=Decarbonise Homes Research	DESNZ
49	Green Home Finance Accelerator (GHFA)	DESNZ
50	Spring Statement 2022 announced that qualifying energy saving material installations, such as insulation, heat-pumps and solar panels, would benefit from a temporary VAT zero-rate in Great Britain until 31 March 2027. Autumn Statement 2023 announced an expansion of the VAT relief available on the installation of energy-saving materials by extending the relief	HMT/HMRC

No.	Government action	Responsible department/arm's length body (ALB)
	to additional technologies, such as water-source heat pumps, and bringing buildings used solely for a relevant charitable purpose within scope. These reforms will be implemented UK-wide from February 2024.	
51	Working with partners, research into the potential replicability of the main international financial incentives schemes for repairing historic buildings.	DCMS
52	Consider the applicability of and challenges faced by historic homes as part of the schemes and support available	DESNZ
53	The government will work with the heritage sector and industry to further examine the evidence base around cost and affordability as barriers to energy efficiency measures in historic homes, including examining the most effective and best value policy mechanisms for addressing the challenges identified.	DCMS/HMT
54	Explore how retrofit funding programmes can support complex-to-decarbonise homes and historic buildings.	DCMS/DESNZ
55	Publish the response to the mortgage lender consultation	DESNZ

Evidence bibliography

Research papers/reports

BMG Report (2022), Historic England 2022 Listed Building and Conservation Area Owner/ Occupier Survey (https://historicengland.org.uk/research/current/social-and-economic-research/listed-building-owners-survey/#2022).

British Standards Institution and Department for Business, Energy and Industrial Strategy (2022), PAS 2035:2019 (Incorporating Corrigenda No. 1 and No. 2 and Amendment 1): Retrofitting dwellings for improved energy efficiency – Specification and guidance.

British Standards Institution and Department for Business, Energy and Industrial Strategy (2022), PAS 2030:2019 (Incorporating Corrigenda No. 1 and No. 2 and Amendment 1) Specification for the installation of energy efficiency measures in existing Dwellings BRE Housing.

Capital Economics Report (2022) Retrofitting traditional buildings – helping progress to Net Zero: an analysis of the current skills gap and economic impacts of implementing a full retrofit programme for traditional buildings (https://www.grosvenor.com/getattachment/c61fd95c-8bae-46e0-8726-eaba71f9e841/Final-CE-Data.pdf) (PDF, 698 KB).

Climate Change Committee, Element Energy, and University College London (2019), Analysis on abating direct emissions from 'hard-to-decarbonise' homes (https://www.theccc.org.uk/publication/analysis-on-abating-direct-emissions-from-hard-to-decarbonise-homes-element-energy-ucl/).

Department for Energy Security and Net Zero (2024), Defining and identifying complex-to-decarbonise homes (https://www.gov.uk/government/publications/defining-and-identifying-complex-to-decarbonise-homes).

Department for Business, Energy and Industry Strategy and Ministry of Housing, Communities and Local Government (2016), Each Home Counts: Review of Consumer Advice, Protection, Standards and Enforcement for Energy Efficiency and Renewable Energy (https://www.gov.uk/government/publications/each-home-counts-review-of-consumer-advice-protection-standards-and-enforcement-for-energy-efficiency-and-renewable-energy).

Department for Digital, Culture, Media and Sport (2022), Roundtable Adapting Historic Houses for Energy Efficiency - Summary Notes. Unpublished.

Energy Saving Trust (2008), Hard to Treat Homes using the English house condition survey (https://files.bregroup.com/bre-co-uk-file-library-copy/filelibrary/pdf/rpts/Hard_to_Treat_Homes_Part_I.pdf) (PDF, 194 KB).

Grosvenor (2023), Heritage and Carbon: Addressing the Skills Gap (https://www.grosvenor.com/heritageandcarbon), with The Crown Estate, Historic England, National Trust, and Peabody.

Historic England (2022), Combined Notes from Energy Efficiency Review Round Table sessions – Sept/Oct 2022. Unpublished.

Historic England (2022), Historic England Listed Building Owner/Occupier Survey Retrofit Key Findings. Unpublished.

Historic England (2022), Local Authority Staffing Survey: An annual survey of staffing numbers in local authority heritage teams (conservation and archaeology) 2020 - 2022 (https://historicengland.org.uk/images-books/publications/la-staff-resources-2020-22/).

Historic England (2021), Heritage and Microgeneration - A rapid review of Recent Planning Practice. Unpublished.

Historic England (2018), The Heritage Dimension of Planning Applications (https://historicengland.org.uk/research/current/planning-research/).

Historic England (2021), The Heritage Dimension of Commercial Renewable Energy Development in Planning (https://historicengland.org.uk/images-books/publications/heritage-dimension-commercial-renewable-energy-development-planning/).

Historic England (2019), There's No Place Like Old Homes: Re-use and Recycle to Reduce Carbon (https://historicengland.org.uk/research/heritage-counts/2019-carbon-in-built-environment/carbon-in-built-historic-environment/), Heritage Counts, Historic Environment Forum.

Historic England (2023), Local Data on the Demand for Retrofitting Skills and Economic Growth (https://historicengland.org.uk/advice/climate-change/delivering-net-zero-local-data-demand-for-retrofitting-skills).

Historic England (2023, forthcoming) Local Authority Staffing Survey.

Historic Environment Scotland, Our Past, Our Future: The Strategy for Scotland's Historic Environment (https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=79204155-9eb2-4d29-ab14-aff200ec2801).

National Housing Federation and Local Government Association (2022), Hard to decarbonise social homes (https://www.local.gov.uk/publications/hard-decarbonise-social-homes).

National Trust (2021), Decarbonising traditional buildings. Unpublished.

Sustainable Traditional Buildings Alliance (2019), Retrofit of domestic buildings under PAS 2035: A guide to assessing the significance of traditionally constructed buildings that are not protected (https://retrofitacademy.org/knowledge/pas-2035/).

Welsh Government (2021), How to Improve Energy Efficiency in Historic Buildings in Wales (https://cadw.gov.wales/advice-support/climate-change/how-to-improve-energy-efficiency-historic-buildings-wales).

Online blogs and websites

Cowell, Ben (2022), Policy: A plan for change (https://www.historichouses.org/news/policy-a-plan-for-change/). Historic Houses website.

GOV.UK (various dates), Published guidance on energy efficiency (https://www.gov.uk/environment/climate-change-energy-energy-efficiency#guidance_and_regulation).

Historic Houses (2022), Our places matter: Sustainability Matters (https://www.historichouses.org/our-places-matter/sustainability-matters/).

Retrofit Academy (2022), A Retrofit Toolkit: Here to Help Local Authorities Deliver PAS 2035 Compliance (https://retrofitacademy.org/midlands-toolkit/).

Sustainable Traditional Buildings Alliance (2020), Research List (https://stbauk.org/stba-research/).

Sustainable Traditional Buildings Alliance (2023), Guidance and case studies (https://responsible-retrofit.org/).

List of organisations engaged as part of the Review

1. Atkins Martin Associates Ltd
2. Austin-Smith: Lord
3. BBC Studios
4. BCP Council
5. Blue Willow Heritage
6. Brimble Lea
7. Brows Holme Hall
8. 20th Century Society

9. Central Association of Agricultural Valuers
10. Centre for Sustainable Energy
11. CLB Heritage Ltd
12. Clovelly Estate Company
13. Combermere Abbey Estate
14. Country Land and Business Association
15. Court Design & Conservation
16. CPRE Kent and Kent Historic Buildings Committee
17. Cranbrook & Sissinghurst Parish Council
18. Dean Knight Partnership Ltd
19. Demetra Lindsay Architecture
20. Ecotecture Ecological Design Ltd
21. ELG Planning
22. Energy Saving Trust
23. Energy UK
24. Enfield Council
25. FB Heritage
26. Freelance
27. GDCT
28. George Barnsdale Timber Windows and Doors
29. Gillard Associates Ltd
30. Glass and Glazing Federation
31. Harrogate Borough Council
32. Herefordshire Council
33. Historic Buildings Committee, CPRE Kent
34. Historic England
35. Historic Environment Forum
36. Historic Houses
37. Horsham District Council
38. Hutton + Rostron
39. Ian Keys
40. Inspire Heritage Services
41. Institute of Historic Building Conservation
42. Julie Godefroy Sustainability
43. Liquid Gas UK
44. Llewellyn Harker Lowe
45. Maidstone District Council
46. Mendip District Council
47. Naked Energy Ltd.

48. National Trust
49. NDM Heath Ltd.
50. NRLA
51. Oxford Brookes University
52. Planning Inspectorate
53. Renzo Lattanzio
54. Rock Davidson Associates
55. Ryedale District Council
56. Sanctuary Housing Association
57. SAVE Britain's Heritage
58. Savills
59. Simon Cartlidge Architect
60. Society for the Protection of Ancient Buildings - SPAB
61. South Somerset District Council
62. Southwark Council
63. Springfield Business Supplies Ltd
64. St Hugh's College, University of Oxford.
65. Structural & Civil Consultants Ltd
66. Sustainable Energy Association
67. Sustainable Traditional Buildings Alliance
68. SWIGA
69. Swinton Park
70. Telford & Wrekin Council
71. The Athena Foundation
72. The Heritage Alliance
73. The IAA
74. The Listed Property Owners' Club
75. The Open University
76. Timber Windows (UK) Limited
77. Tissington Estate
78. Trev Stay
79. TrustMark
80. Tunbridge Wells Borough Council
81. UK Antarctic Heritage Trust
82. UK Finance
83. Willcox & Ingham Architects Limited
84. Windhager UK Ltd
85. Worlledge Associates
86. Yorkshire Dales National Park Authority

Glossary

BSI	British Standards Institute
CITB	Construction Industry Training Board
DCMS	Department for Culture, Media and Sport
DESNZ	Department for Energy Security and Net Zero
DLUHC	Department for Levelling Up, Housing and Communities
ECO	Energy Company Obligation Scheme
EPC	Energy Performance Certificate
ERB	Employer Representative Body
HE	Historic England
HEAN	Historic Environment Advice Note
HMRC	His Majesty’s Revenue and Customs
HMT	His Majesty’s Treasury
HUG	Home Upgrade Grant
LAD	Local Authority Delivery Scheme
LBCO	Listed Building Consent Order
LLBCO	Local Listed Building Consent Order
LSIP	Local Skills Improvement Plan
NDMP	National Development Management Policy
NPPF	National Planning Policy Framework
NVQ	National Vocational Qualification
PAS	Publicly Available Specification
PDR	Permitted Development Right
RTPI	Royal Town Planning Institute

SHDF	Social Housing Decarbonisation Fund
SHRA	Social Housing Retrofit Accelerator
TAF	Technical Assistance Facility
VAT	Value-Added Tax
NAP3	Third National Adaptation Programme