

RIBA Response

Environmental Audit Committee - Possible Future Inquiries

The Royal Institute of British Architects champions better buildings, stronger communities and higher environmental standards through the practice of architecture and our 40,000 members. We provide the standards, training, support and recognition that put our members – in the UK and overseas – at the peak of their profession. With government and our partners, we work to improve the design quality of public buildings, new homes and new communities.

The built environment is responsible for around 40% of global carbon emissions and architects have a significant role to play in reducing UK greenhouse gas emissions. The RIBA joined the global declaration calling an environment and climate emergency on 29 June 2019; just two days after the UK government passed a law stipulating the UK end its contribution to global warming by 2050, by bringing all greenhouse gas emissions to net zero.

In order to support our members to help reach this goal, the RIBA launched the [2030 Climate Challenge](#). The Challenge asks architects meet net zero (or better) whole life carbon for new and retrofitted buildings by 2030 by reducing operational energy, embodied carbon and potable water usage. The 2030 Climate Challenge targets consider recommendations from the Green Construction Board and have been validated through consultation with UK professional bodies and with the Committee on Climate Change.

The RIBA welcomes the direction of travel signified by many of the measures proposed in recent Government consultations to help the UK reach net zero. The RIBA has responded to the following consultations:

- [Ministry of Housing, Communities and Local Government: Future Homes Standard](#)
- [Department for Business, Energy and Industrial Strategy: Non-domestic private rented sector minimum energy efficiency standards: trajectory to 2030](#)
- [NHS net zero: call for evidence](#)

However, we believe that there is a need for greater ambition on behalf of the Government if we are to significantly improve the performance and reduce the environmental impacts of the built environment.

The RIBA recommends the Environmental Audit Committee should pursue inquiries into:

- energy efficiency of existing homes; and
- local authorities and net zero

Energy efficiency of existing homes

The scale of the problem

The UK has the least energy efficient housing stock in Europe. This exacerbates fuel poverty (around 2.5 million English families currently live in fuel poverty¹) and contributes to deaths due to the cold (approximately 3,000 per year²). In the UK, 19% of carbon emissions come from heating buildings and 77% of this comes from heating homes.³

It is expected that 85% of current housing stock will still be in use in 2050⁴ and, therefore, renovating existing buildings to make them more energy efficient is a key element of addressing the climate emergency and meeting the legislated net zero target by 2050.

The House of Commons Business, Energy and Industrial Strategy Committee report: *Energy efficiency: building towards net zero* highlighted a swathe of recent Government policies that have been discontinued or had their funding reduced; these include, the Warm Front scheme, the Green Deal, Zero Carbon Homes regulations and the Energy Company Obligation (ECO).⁵ In 2017, the Government announced its new Clean Growth Strategy which included the target to bring all homes to Energy Performance Certificate (EPC) band C by 2035, “where practical, cost-effective and affordable”.

Currently, only 29% of homes meet the required standard of EPC band C; which leaves a remaining 71%, equating to around 19 million homes, to be retrofitted if the UK is to meet its energy efficiency target.⁶

Key issues

The RIBA welcomes the ambition by Government for homes to reach EPC band C by 2035; however, EPCs have been proven to be extremely inaccurate when compared to actual energy usage. The RIBA suggests that EPCs are not the best measure of energy efficiency and, EPCs should be reformed to better reflect the actual energy usage of a building.

In 2018, the Government consulted on EPCs and how they can be improved, however, we are still awaiting a response. Understanding how much actual energy a building uses is crucial to identify where, and which, energy efficiency improvements can be made.

In addition, despite the pledge to for existing homes to be retrofitted to reach EPC band C by 2035, and several Government consultations on energy efficiency in buildings, few new policies to achieve this target has been announced since 2017.

Improving the energy efficiency of homes must be a national infrastructure priority, with clear governance arrangements, targets, a long-term action plan and funding. This includes providing

¹ House of Commons Business, Energy and Industrial Strategy Committee, *Energy efficiency: building towards net zero*, <https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1730/1730.pdf>, pg. 7

² The Independent, *Fuel poverty crisis: 3,000 Britons dying each year because they can't heat their homes, study shows*, <https://www.independent.co.uk/news/business/news/cold-weather-uk-winter-deaths-europe-polar-vortex-a8224276.html>, posted 22 February 2018

³ House of Commons Business, Energy and Industrial Strategy Committee, *Energy efficiency: building towards net zero*, <https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1730/1730.pdf>, pg. 6

⁴ UK Green Building Council, *A housing stock fit for the future: Making home energy efficiency a national infrastructure priority*, <https://www.ukgbc.org/sites/default/files/A%2520housing%2520stock%2520fit%2520for%2520the%2520future%2520-%2520Making%2520home%2520energy%2520efficiency%2520a%2520national%2520infrastructure%2520priority.pdf>, pg. 5

⁵ House of Commons Business, Energy and Industrial Strategy Committee, *Energy efficiency: building towards net zero*, <https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1730/1730.pdf>, pg. 10

⁶ House of Commons Business, Energy and Industrial Strategy Committee, *Energy efficiency: building towards net zero*, <https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1730/1730.pdf>, pg. 13

adequate incentives for 'able to pay' homeowners and landlords; and a long-term approach to delivery in which local authorities play a core role in tackling fuel poverty, creating demand and growing local supply chains. A retrofitting programme of this scale is unprecedented and announcements from Government on how they plan to achieve their target is crucial.

Why improving energy efficiency in existing homes is important

Energy efficient homes benefit the environment, through reduced carbon emissions, and the individual through lower bills and a reduction in fuel poverty.

In addition, investing in energy efficiency is also beneficial to the economy. Investment would help drive innovation in products and services for low carbon and energy efficient buildings. This will stimulate the market and can create significant clean industrial growth opportunities in the UK and abroad.⁷

Retrofitting homes to make them more energy efficient would also create skilled employment opportunities. Most jobs would be created in the services and construction sectors, and research shows this would create an increase in annual employment of around 100,000 full-time equivalents over the period 2020-2030.⁸

Local authorities and net zero

Local authorities are key players in addressing the climate emergency and many have set themselves very ambitious targets to reach net zero, well before the UK target of 2050. It is imperative that local authorities have the knowledge, skills and clout to address carbon emissions from the built environment.

The RIBA suggests that the Environmental Audit Committee inquiry include a focus on the measures local authorities are taking to reduce carbon emissions in the built environment and highlight additional activities they should be undertaking to help the built environment reach net zero. The below sets out three key areas that the RIBA believe are essential to ensuring a reduction in carbon emissions from the built environment.

Whole life carbon must be considered

Local authorities must consider 'whole life carbon' for any new or retrofitted building. Whole life carbon includes all carbon emissions that are directly related to the type and quantity of the resources used to create, maintain and use a building. A key element of this is embodied carbon.

Embodied carbon refers to the carbon emitted from the processes associated with sourcing materials, fabricating them into products and systems, transporting them to site and assembling them into a building. It also includes the emissions due to maintenance, repair and replacement, as well as final demolition and disposal.

The choice of materials used in construction can significantly impact the amount of carbon emitted during a project. Concrete, for example, is one of the most widely used building materials in the world. It is durable and strong, and when combined with suitable insulation it can make buildings incredibly energy efficient. Despite these positive qualities, concrete is also one of the biggest emitters of carbon, accounting for 8% of CO₂ emissions, globally.⁹

To calculate the embodied carbon and whole life carbon of a project, local authorities should work with architects, surveyors and engineers. Local authorities must consider the whole life carbon of a building to

⁷ EEIG, *Making energy efficiency a public and private infrastructure investment priority*, https://www.theeeig.co.uk/media/1063/eeig_net-zero_1019.pdf, pg. 7

⁸ EEIG, *Making energy efficiency a public and private infrastructure investment priority*, https://www.theeeig.co.uk/media/1063/eeig_net-zero_1019.pdf, pg. 7

⁹ Making Concrete Change: Innovation in Low-carbon Cement and Concrete, <https://reader.chathamhouse.org/making-concrete-change-innovation-low-carbon-cement-and-concrete#>

understand its full environmental impact and reduce and mitigate carbon emissions from the outset of a project.

Local authorities must undertake Post Occupancy Evaluation

It is vital that local authorities gain a better understanding of how their buildings are performing compared to the design intention. Even when a building's design has energy efficiency at its heart, the promised energy efficiency standards are not always met.

It is essential, therefore, that local authorities utilise Post Occupancy Evaluation (POE). POE is the process of obtaining feedback on a building's performance in use after it has been built and occupied. POE accurately measures factors such as energy consumption, water usage, maintenance costs and user satisfaction. Undertaking POE is a key to understanding whether a building's energy performance is in line with expectations.

If POE is not carried out, then the above data is not available. Without this data it is difficult to understand where and how energy efficiency improvements can be made. POE also highlights where a building can be improved, allowing for a process of continuous improvement, and lessons learnt, in the construction industry.

Some local authorities, such as the London Borough of Tower Hamlets, are leading the way by looking to introduce requirements for all housing developments that meet certain requirements (size, density) to have POEs carried out as a condition of receiving planning permission. Under current proposals, developers can either conduct the POEs themselves or provide funding for the council to undertake it on their behalf. More local authorities should follow suit to help embed POE as a standard part of the planning process.

The RIBA recommends that local authorities mandate the use of POE on large scale housing schemes and look to introduce POE for non-domestic buildings.

Local authorities should be able to continue to set higher energy efficiency standards for new homes

Currently, under the *Planning and Energy Act 2008* local authorities are able to set policies for new homes which require compliance with higher energy efficiency standards than currently required by the *Building Regulations*. The Ministry of Housing, Communities and Local Government (MHCLG) consultation on the Future Homes Standard suggested that the *Planning and Energy Act* should be amended to restrict local authorities from this capability.

The RIBA recognises that setting a national energy efficiency standard for homes allows for consistency and creates a national market for innovation in products and skills. However, the suggested uplift in the Future Homes Standard consultation is not sufficient to address the impact of climate change from new dwellings.

For local authorities with ambitious targets, for example those in London, removing the ability to set higher compliance standards would be incredibly regressive. To date, the ability for local authorities to set higher energy efficiency standards has been well received. Research highlights that over half (51%) of all local authorities have implemented standards that go above national requirements.¹⁰ Local authorities have a key role to play in reducing carbon emissions and must have the ability to set standards accordingly.

¹⁰ Half of councils beating out national policy on building standards as Future Homes Standard slammed, https://www.solarpowerportal.co.uk/news/51_of_councils_beating_out_national_policy_on_building_standards_as_future