

Proposed Domestic Building Environmental Standards (Scotland) Bill

Introduction

A proposal for a Bill to introduce new minimum environmental design standards for all new-build housing to meet the Passivhaus standard or a Scottish equivalent in order to improve energy efficiency and thermal performance.

The consultation runs from 4 May 2022 to 27 July 2022

All those wishing to respond to the consultation are strongly encouraged to enter their responses electronically through this survey. This makes collation of responses much simpler and quicker. However, the option also exists of sending in a separate response (in hard copy or by other electronic means such as e-mail), and details of how to do so are included in the member's consultation document.

Questions marked with an asterisk (*) require an answer.

All responses must include a name and contact details. Names will only be published if you give us permission, and contact details are never published – but we may use them to contact you if there is a query about your response. If you do not include a name and/or contact details, we may have to disregard your response.

Please note that you must complete the survey in order for your response to be accepted. If you don't wish to complete the survey in a single session, you can choose "Save and Continue later" at any point. Whilst you have the option to skip particular questions, you must continue to the end of the survey and press "Submit" to have your response fully recorded.

Please ensure you have read the consultation document before responding to any of the questions that follow. In particular, you should read the information contained in the document about how your response will be handled. The consultation document is available here:

[Consultation Document](#)

[Privacy Notice](#)

I confirm that I have read and understood the Privacy Notice which explains how my personal data will be used.

About you

Please choose whether you are responding as an individual or on behalf of an organisation.

Note: If you choose "individual" and consent to have the response published, it will appear under your own name. If you choose "on behalf of an organisation" and consent to have the response published, it will be published under the organisation's name.

an individual

Which of the following best describes you? (If you are a professional or academic, but not in a subject relevant to the consultation, please choose "Member of the public".)

Professional with experience in a relevant subject

Which of the following best describes you? (If you are a professional or academic, but not in a subject relevant to the consultation, please choose "Member of the public".)

Optional: You may wish to explain briefly what expertise or experience you have that is relevant to the subject-matter of the consultation

Architect with 20 years experience working on industry-leading energy efficient building projects, including Passivhaus-certified projects.

Please select the category which best describes your organisation

No Response

Please choose one of the following:

I am content for this response to be published and attributed to me or my organisation

Please provide your Full Name or the name of your organisation. (Only give the name of your organisation if you are submitting a response on its behalf).

(Note: the name will not be published if you have asked for the response to be anonymous or "not for publication". Otherwise this is the name that will be published with your response).

Sam Foster

Please provide details of a way in which we can contact you if there are queries regarding your response. Email is preferred but you can also provide a postal address or phone number.

We will not publish these details.

Aim and approach - Note: All answers to the questions in this section may be published (unless your response is "not for publication").

Q1. Which of the following best expresses your view of the proposed Bill? Please note that this question is compulsory.

Partially supportive

Please explain the reasons for your response.

While the aim of this consultation is spot-on - i.e. to improve energy efficiency standards in the Building Regulations - it's fundamentally important that we consider this idea really carefully. In addition to the points Dr. Baker makes there are three really important things to think about:

1. Passivhaus (and it's refurbishment equivalent, 'EnerPHit') is run by the Passivhaus Institute, a private German company. Making Passivhaus mandatory would clearly benefit that (foreign) company massively. It also removes one of the Scottish Building Regulations' biggest strengths, which is that they aren't prescriptive, meaning applicants for a building warrant can show a project complies with the regs in any

Q1. Which of the following best expresses your view of the proposed Bill? Please note that this question is compulsory.

number of ways. It would be much wiser for the Building Regulations to be improved so that new and refurbished homes have to meet a specific, very high, energy efficiency standard *equivalent to* Passivhaus - allowing applicants to use Passivhaus or any other agreed method to demonstrate compliance;

2. It's technically possible to build a Passivhaus home from barrels of nuclear waste, as long as all the Passivhaus boxes are ticked. I'm not sure anyone would want to live in a house with such clear health risks, yet every day homes are being built from materials that are toxic to health, like PIR insulation, treated timber and vinyl flooring. The point is that energy efficiency *is* important, but it's essential that they're also built from natural, non-toxic materials and finishes that don't have a negative impact on occupants or the environment. As such a) the 'embodied carbon' - i.e. the pollution generated from making building materials and building the homes - must be seen as an equal priority to making them energy efficient, using the RIBA 2030 targets. (The Passivhaus software, a large excel spreadsheet, can help calculate this if it's asked), and b) we need a wholesale switch to using natural, non-toxic materials like straw, hemp and solid timber;

3. There are a limited number of ways in which existing buildings (particularly traditional buildings, e.g. pre-1919 stone and brick homes) can be insulated and draughtproofed without causing very serious problems of dampness, mould and poor health for occupants. Applying Passivhaus to traditional buildings is entirely possible but needs a lot of understanding and care to get right: it's a different job entirely from building a new Passivhaus. Because of this it makes sense for refurbishments, *especially* if aiming to achieve Passivhaus, to be done in parallel with best practice guidance, e.g. from Historic Environment Scotland, Retrofit Academy, AECB etc.

Q2. Do you think legislation is required, or are there other ways in which the proposed Bill's aims could be achieved more effectively? Please explain the reasons for your response.

Legislation is required for two specific and separate aspects:

1. To implement in the Building Regulations energy efficiency targets that are compatible with achieving net zero by 2040;
2. To implement in the Building Regulations adequate post-occupancy building performance evaluation to demonstrate EITHER a) that buildings are performing in terms of energy efficiency as they're expected to, or b) that they do not and that remedial work is needed to achieve this.

Q3. Which of the following best expresses your view on setting the Passivhaus standard or a Scottish equivalent as the most appropriate new build housing standards to contribute to eradicating fuel poverty?

Partially supportive

Please explain the reasons for your response.

Passivhaus (and it's refurbishment equivalent, 'EnerPHit') is run by the Passivhaus Institute, a private German company. Making Passivhaus mandatory would clearly benefit that (foreign) company massively. It also removes one of the Scottish Building Regulations' biggest strengths, which is that they aren't prescriptive, meaning applicants for a building warrant can show a project complies with the regs in any number of ways. It would be much wiser for the Building Regulations to be improved so that new and refurbished homes have to meet a specific, very high, energy efficiency standard *equivalent to* Passivhaus - allowing applicants to use Passivhaus or any other agreed method to demonstrate compliance.

Q4. Which of the following best expresses your view on setting the Passivhaus standard or a Scottish equivalent as the most appropriate new build housing standards to contribute to a reduction in emissions?

Partially supportive

Please explain the reasons for your response.

Those with experience of delivering Passivhaus-standard buildings will confirm that they tend to achieve the intended level of energy efficiency (and, by extension, emission reductions) compared to buildings delivered solely to a certain level of Building Regulations. This is solely down to the extent of obligatory quality checking and evidence provision associated with Passivhaus construction, which is missing from standard construction.

Q5. Which of the following best expresses your view of the process set out to ensure that the new standards are met in all new build housing? (see pages 14 to 16 in the consultation document)

Partially opposed

Please explain the reasons for your response, including your views on how effective the process would be in removing the 'performance gap' and on how the proposed verification process might work in practice.

The performance gap is the difference between how a building is expected to perform and how it really performs. How it really performs can *only* be fully known after a particular period of occupant and normal use. As such, sign off (and the accompanying completion certificate) cannot be reasonably issued with any confidence until *after* it is known how the building really performs.

It may be prudent to consider a two-part sign-off process: the first, when complete, to allow occupation and the second after one year (coinciding with the Defects Liability Period) once energy performance of the occupied building has been measured and verified.

Q6. What could be the market effects of the introduction of this proposal?

No Response

Financial Implications

Q7. Any new law can have a financial impact which would affect individuals, businesses, the public sector, or others. What financial impact do you think this proposal could have if it became law?

some increase in costs

Please explain the reasons for your answer, including whom you would expect to feel the financial impact of the proposal, and if there are any ways you think the proposal could be delivered more cost-effectively.

Building to a better standard of quality and using more materials (e.g. through increased levels of insulation) will inevitably cost more than building to a poor standard of quality. This is to be expected, so trying to avoid it is fairly pointless. However, building better buildings now will lead to lower long-term health issues for occupants, lower levels of fuel poverty, lower remedial costs associated with climate change and more. We must take a long term view of the decision to build to a higher standard.

This law would have most effect on volume housebuilders, whose very large profit margins are common

Q7. Any new law can have a financial impact which would affect individuals, businesses, the public sector, or others. What financial impact do you think this proposal could have if it became law?

knowledge. This short-term, unsustainable model of growth-at-all-costs is contrary to many ScotGov policies, including Community Wealth Building, Net Zero and Circular Economy principles.

Equalities

Q8. Any new law can have an impact on different individuals in society, for example as a result of their age, disability, gender re-assignment, marriage and civil partnership status, pregnancy and maternity, race, religion or belief, sex or sexual orientation.

What impact could this proposal have on particular people if it became law? If you do not have a view skip to next question.

Please explain the reasons for your answer and if there are any ways you think the proposal could avoid negative impacts on particular people.

Building to a better level of energy efficiency - as long as undertaken with non-toxic materials and in a way that enhances place - has nothing but positive impacts on different individuals in society.

Sustainability

Q9. Any new law can impact on work to protect and enhance the environment, achieve a sustainable economy, and create a strong, healthy, and just society for future generations.

Do you think the proposal could impact in any of these areas? If you do not have a view then skip to next question

Please explain the reasons for your answer, including what you think the impact of the proposal could be, and if there are any ways you think the proposal could avoid negative impacts?

Adopting Passivhaus, or a Scottish Equivalent, blindly may have unexpected consequences on a number of fronts.

1. 'Embodied Carbon' may be high: It is essential that buildings are constructed and refurbished from materials with low 'embodied carbon', so that their initial pollution footprint is as low as their ongoing emissions.
2. Greater quantities of toxic materials will be used. We must move away from petrochemical building products like foam insulation and plastic sheeting so that all building materials are largely plant-based, e.g. straw, hemp and timber. As well as being grown in Scotland, these materials absorb carbon dioxide as they grow, preventing it from being emitted for the lifespan of the building. In addition these materials are largely non-toxic (as long as the timber remains untreated, which it can if appropriately detailed).

General

Q10. Do you have any other additional comments or suggestions on the proposed Bill (which have not already been covered in any of your responses to earlier questions)?

No Response