

Response to HSE Consultation: Review of Approved Document B: Fire Safety

Consultation	Review of Approved Document B: Fire Safety
Responding organisation	The Engineers Reuse Collective (tERC)
Response type	Organisational response
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1. Introduction

The Engineers Reuse Collective (tERC) is a UK not-for-profit group of engineering consultancies and associated professionals championing, accelerating and delivering reuse in the built environment to support the transition of the UK's built environment to Net Zero Carbon. Our mission is to dramatically increase reuse within the built environment, with minimal reprocessing, to support the transition to circular economy principles and to urgently reduce the carbon intensity of the built environment.

We welcome the opportunity to respond to the review of Approved Document B (ADB), and we recognise and support the central purpose of this review: implementing the recommendations of the Grenfell Tower Inquiry and improving life safety in buildings.

We recognise that the consultation does not propose an outright ban on structural timber: it proposes an 11m threshold above which ADB guidance cannot be relied upon as a sole route to compliance for buildings using combustible elements of structure, with a fire-engineered approach required instead. However, we believe the practical effect in the market is likely to be very close to a ban for the reasons set out in our responses to the consultation.

We are concerned that the proposals represent a retrograde step at precisely the moment the construction sector needs to be moving in the opposite direction. The reuse, retention and extension of existing buildings is now widely recognised as one of the most significant and immediately deliverable levers available to reduce the built environment's contribution to climate change. Structural timber is frequently the only practical structural choice for the lightweight extensions, roof-top additions and adaptations that make this reuse possible. A regulatory change that constrains timber risks closing off, or substantially increasing the cost of, one of the few practical routes available for the sector to meet both its decarbonisation obligations and its housing delivery ambitions through reuse rather than demolition and rebuild. We ask BSR to treat this not as a side effect to be mitigated, but as a central consideration in judging whether the proposed threshold is proportionate.

This response focuses on Section 5 of the consultation (the proposed 11m height threshold above which ADB guidance cannot be used where combustible elements of structure, including timber, are present), and on Section 4 (clarification of ADB's applicability to existing buildings). We also respond to Consultation question 39 on environmental impacts.

Our concern throughout is to ensure that fire safety policy is proportionate to risk, is calibrated against the much larger and faster-growing risk to life from climate change, and does not inadvertently obstruct the reuse, retrofit and adaptation of the UK's existing building stock, which is recognised as one of the most significant levers available for climate mitigation in the built environment.

2. Response to Question 5

Question 5: Do you agree that the proposed text improves clarity and encourages alignment with the fire strategy, fire safety management plan, and fire risk assessment? Yes/No.

Our response: No

3. Response to Question 6

Question 6: Do you have views on the content, structure, and style of the proposed text?

Our response: Yes. The text should explicitly and affirmatively state that structural timber is an acceptable choice for extending, adapting or altering existing buildings above 11m, subject to a proportionate fire-engineered approach for the new work.

We support the broad intent of the proposed Section 4 text, aligning the fire strategy, fire risk assessment and fire safety management plan, and avoiding a lowering of safety as a result of building work. However, the drafting is entirely generic on the question of materials and structural form. It speaks throughout of 'dutyholders' assessing 'broader implications' and 'proportionate' measures, but at no point addresses how this applies to structural timber specifically, nor does it cross-refer to the proposed height threshold.

This is a significant gap, for three reasons:

- Read together with Section 5, the existing buildings text leaves open whether a dutyholder extending or materially altering a building above 11m, for example, adding a lightweight timber storey to an existing masonry building, is expected to treat the whole proposed structure as falling outside ADB, triggering a full fire-engineered approach for what may be a modest, localised intervention.
- The text's repeated emphasis on assessing whether 'what may appear to be a minor modification can introduce new risks' is, in isolation, neutral guidance but combined with market perception of the proposed height threshold, it is likely to be read by building control bodies, insurers and lenders as a signal of caution specifically directed at lightweight and timber interventions, even though the text does not say this.
- As drafted, the text gives no positive indication that structural timber is an acceptable, supported choice for extending, adapting or adding to existing buildings above 11m. Silence is not neutral here: where guidance is silent on a material and a separate part of the same document introduces a threshold restricting that material, the reasonable reading by a risk-averse market is that the silence confirms the restriction.

We do not think this is BSR's intent. Paragraph 53 of the consultation is explicit that BSR 'continue[s] to support the use of timber', and paragraph 54 confirms timber remains usable above 11m 'by ensuring a full fire engineered approach is taken'. But this intent is stated only in the commentary to Section 5; it is absent from the guidance text for existing buildings in Section 4, which is the part of ADB that a dutyholder or designer will actually consult when planning a reuse, retrofit or extension project.

This concern is further heightened by how ADB defines the Alternative Compliance Route that the consultation itself relies upon to preserve timber's usability above 11m. Section 0 of ADB provides that 'if alternative methods are adopted, the overall level of safety should not be lower than the approved document provides'. But in the absence of any text in the guidance affirmatively supporting timber's use, the only available benchmark against which 'the overall level of safety' can be measured is the prescriptive classification the guidance itself sets for elements of structure, namely A2-s3,d2 or better; a standard defined, in substance, as the absence of

combustibility. A combustible material cannot, by definition, be shown to equal a standard whose defining characteristic is non-combustibility, however robust the fire engineering applied to it. Read literally, this makes the Alternative Compliance Route fundamentally unable to validate any combustible structural system, including encapsulated mass timber, regardless of the fire-engineered justification offered. We do not believe this is the intended effect of the proposed wording (paragraph 54 of the consultation's commentary is explicit that timber remains usable above 11m via a fire-engineered approach) but the guidance text itself does not deliver on that intention, and as drafted appears to close off the very route paragraph 54 describes as remaining open.

We note that the BRE research (referenced at paragraph 56) specifically states that ADB should 'be sufficiently clear to ensure that guidance can be interpreted correctly where there is the potential for ambiguity or insufficient detail available'. In our view, the proposed wording introduces additional ambiguity and insufficient detail, particularly with regards to extending, adapting or altering existing buildings at or around a height threshold.

We propose that the existing buildings text proposed in Section 4 be amended to include explicit, affirmative wording confirming that structural timber, including engineered mass timber, is an acceptable structural choice for the extension, adaptation or alteration of an existing building, including where the building or the affected part of it exceeds 11m in height, subject to appropriate fire engineering. We further propose that the fire engineering required should be proportionate to the scale and fire risk profile of the new work and should not require re-justification of the existing structure beyond the requirements of Regulation 4(3).

4. Response to Question 7

Question 7: Do you have views on what impact this text may have on industry?

Our response: Yes. As noted within our response to Question 6, the drafting is entirely generic on the question of materials and structural form. It speaks throughout of 'dutyholders' assessing 'broader implications' and 'proportionate' measures, but at no point addresses how this applies to structural timber specifically, nor does it cross-refer to the proposed height threshold.

This is a significant gap, for three reasons:

- Read together with Section 5, the existing buildings text leaves open whether a dutyholder extending or materially altering a building above 11m, for example, adding a lightweight timber storey to an existing masonry building, is expected to treat the whole proposed structure as falling outside ADB, triggering a full fire-engineered approach for what may be a modest, localised intervention.
- The text's repeated emphasis on assessing whether 'what may appear to be a minor modification can introduce new risks' is, in isolation, neutral guidance but combined with market perception of the proposed height threshold, it is likely to be read by building control bodies, insurers and lenders as a signal of caution specifically directed at lightweight and timber interventions, even though the text does not say this.
- As drafted, the text gives no positive indication that structural timber is an acceptable, supported choice for extending, adapting or adding to existing buildings above 11m. Silence is not neutral here: where guidance is silent on a material and a separate part of the same document introduces a threshold restricting that material, the reasonable reading by a risk-averse market is that the silence confirms the restriction.

We are concerned that the practical effect of the proposed height threshold in Section 5 may be considerably more restrictive than its technical intent, and that in practice:

- insurers, lenders, building control bodies, and risk-averse design teams treat a height threshold in statutory guidance as a de facto prohibition, regardless of the technical routes nominally left open beyond it;
- the dynamic from the proposed wording will increase perceived risk and reduce the appetite to finance or insure the use of structural timber in the extension, adaptation or alteration of existing buildings; and
- the cost of a fire-engineered route becomes prohibitive for the small-scale retrofit, extension and conversion projects most relevant to building reuse, even where it remains technically available, meaning the 'optionality' preserved in the wording is largely theoretical for this part of the market.

In other words, we are concerned that the industry is likely to react to the existence and position of the threshold itself, rather than to the technical detail of what remains permissible beyond it. This is a foreseeable and avoidable outcome. We ask BSR to consider how the final wording, and any accompanying guidance or FAQ material, can pre-empt this reaction, for example through clear, prominent confirmation that timber remains a supported structural choice above 11m subject to fire engineering, and through proportionate, cost-effective routes to compliance for smaller-scale reuse and extension projects specifically.

5. Response to Question 8

Question 8: Do you have views on potential benefits of the change?

Our response: No. In our view, the proposed wording introduces additional ambiguity and insufficient detail, particularly with regards to extending, adapting or altering existing buildings at or around a height threshold, and therefore does not provide any potential benefits, and rather will lead to increased design time, reduced compliance and potentially compromised safety levels.

6. Response to Question 9

Question 9: Do you agree that Approved Document B should include a threshold above which the guidance should not be used when combustible elements of structure are utilised? Yes/No.

Our response: No.

7. Response to Question 10

Question 10: Do you agree that the 11m threshold is appropriate? Yes/No. If you do not agree, at what height do you believe the threshold should be set?

Our response: No. We have not seen fire-specific evidence justifying 11m as the appropriate point at which ADB guidance ceases to be usable for combustible structures, as distinct from the structural disproportionate-collapse rationale.

We note that BSR references the BRE research (paragraph 56 of the consultation), which itself does not recommend a 11m height threshold, and which is supportive of timber's fire performance. In both large-scale timber experiments (CLT and timber framing with 60-minute design fire resistance) conducted as part of the research, the compartments survived complete burnout of the fire load while maintaining overall stability, with no integrity or insulation failure against the criteria used in standard fire testing, matching the performance recorded for the non-combustible systems tested in the same programme. From the CLT testing, some hours after the fire

was extinguished, localised smouldering combustion developed and led to reignition over several days. This is a genuine finding requiring further research and work, but we disagree that introducing a blanket, fixed 11m threshold to the use of load-bearing elements of structure achieving a minimum classification of A2-s3, d2 or better is a proportionate response.

We also note that elsewhere in this consultation, BSR accepts trade-offs of comparable or greater fire risk where the benefit is judged proportionate, for example, retaining an evidence-led, performance-based approach to laminated glass balustrades rather than a blanket ban (Section 6 of the consultation). We ask that structural timber below height thresholds requiring full fire engineering be given the same evidence-led, performance-based treatment, rather than a default exclusion justified primarily by analogy to structural, rather than fire, guidance.

If a threshold is retained, we ask BSR to consider a higher height, or a risk-based rather than purely height-based approach, particularly for lightweight timber extensions and additions to existing buildings, where the fire risk profile of a localised addition is materially different from that of a new-build mass timber structure of equivalent overall height.

8. Response to Question 11

Question 11: Do you have any comments on the draft guidance text?

Our response: Yes. Our key concern is that any changes to ADB and fire safety policy are proportionate to risk, are calibrated against the much larger and faster-growing risk to life from climate change, and do not inadvertently obstruct the reuse, retrofit and adaptation of the UK's existing building stock, which we regard as one of the most significant levers available for climate mitigation in the built environment.

We ask BSR and MHCLG to weigh the proposed restriction on structural timber against the comparative scale of the two risks it sits between: fire safety in the relatively small number of medium- and high-rise buildings affected, and the excess deaths the UK already faces, and will increasingly face, from climate change. We make this comparison not to diminish the importance of fire safety but because building regulation is necessarily a trade-off between risks, and we submit that this trade-off has become lopsided.

Fire deaths in medium- and high-rise buildings

Home Office and MHCLG fire statistics show that fire deaths in England are low in absolute terms and overwhelmingly concentrated in low-rise dwellings, not the medium- and high-rise buildings targeted by the proposed threshold:

- Over the past 16 years, the total number of primary fires recorded in England is 1,180,453; and of these, 489,731 (41%) occurred in dwellings.
- 3,468 fatalities (in total) in dwelling fires were recorded over the past 16 years in England, an average of 217 fatalities per annum.
- Of these fatalities, 279 fatalities (in total), 8%, were recorded as occurring in purpose built medium-rise and high-rise flats/maisonettes.

The buildings directly affected by the proposed combustible-structure threshold, medium- and high-rise buildings, therefore account for a small minority of an already small annual fire death toll. This is, of course, partly a consequence of regulation working as intended; we do not present this data to argue that fire safety in taller buildings does not matter. We present it because the consultation's own impact assessment does not set this risk

in the context of other risks to life that building and planning policy can influence, most significantly, the risk from climate change set out below.

Excess deaths from climate change

The Climate Change Committee's (CCC) most recent independent climate risk assessment and progress reports set out a markedly larger and fast-growing mortality risk:

- Heat-related excess deaths in the UK already range from 1,400 to 3,000 a year in heatwave periods, and are predicted to exceed 10,000 in an average year by 2050.
- In the record-breaking heatwave of summer 2022, over 3,000 early deaths were attributed to extreme heat in England and Wales alone.
- It is estimated that heat-related mortality, lost productivity and health treatment in England alone costs £6.8 billion annually, rising to £14.7 billion by the 2050s.
- The CCC has been explicit that the UK is not prepared for these impacts, scoring no adaptation outcome as 'good' in its 2025 progress report, and stating that "adaptation cannot wait" and that keeping people secure "is already being compromised by climate change."

Set side by side, the comparison is stark over a 25-year horizon: cumulative fire deaths in medium- and high-rise buildings, even held flat at current low levels, will be measured in the hundreds; cumulative excess deaths from heat alone are projected by the UK's own statutory climate advisers to be measured in the hundreds of thousands, on a worsening trajectory. We ask BSR to make this comparison explicit in the impact assessment that accompanies any final policy, alongside the existing cost-benefit analysis, so that the proportionality of restricting a key low-carbon structural material can be properly tested against the comparative scale of the two risks.

The proposed height threshold for use of ADB

We recognise that the consultation does not propose an outright ban on timber: it proposes an 11m threshold above which ADB guidance cannot be relied upon as a sole route to compliance for buildings using combustible elements of structure, with a fire-engineered approach required instead. We address this distinction further in Section 5 below, because we believe the practical effect in the market is likely to be very close to a ban, for reasons set out there.

Whether interpreted as a hard prohibition or as a high-friction threshold that pushes timber out of mainstream specification, this issue is of particularly significant for the reuse, retrofit and extension of the UK's existing building stock and we do not believe the proposal is justified by the evidence presented.

The carbon case for reuse is well established: the embodied carbon of a new building is typically significantly higher than reuse and retrofit, and demolition and rebuild releases the embodied carbon already locked into existing structure while adding the full embodied carbon of new materials. With the vast majority of buildings that will exist in 2050 already built today, retrofit and adaptation of the existing stock is the dominant lever available to reduce the built environment's contribution to climate change, and by extension to climate-related excess deaths.

Structural timber is frequently the only practical structural choice for this work. Lightweight timber framing is, in many cases, the only viable option for:

- roof-top extensions and additional storeys on existing masonry or concrete buildings, where the existing structure and foundations cannot accept the additional dead load of masonry, concrete or steel construction;

- infill and extension works to existing buildings, where minimising imposed load is essential to avoid extensive (and carbon-intensive) strengthening of existing foundations and structure; and
- conversions and adaptive reuse projects more broadly, where a lightweight, dry, rapidly-erected structural system reduces disruption, cost and risk to the retained building.

A threshold or restriction that removes structural timber as a viable option above 11m, a height easily reached by a rooftop extension on an existing three- or four-storey building, would directly and disproportionately constrain exactly the kind of retrofit-led, low-carbon adaptation that the government recognises is needed. We ask BSR to recognise explicitly, in the final guidance, that building reuse and adaptation is itself a critical climate mitigation strategy, and that fire safety guidance for existing buildings should be drafted to enable rather than obstruct the use of structural timber in this context.

Industry Response

We are concerned that the practical effect of the proposed wording may be considerably more restrictive than its technical intent. The consultation is explicit that timber remains usable above 11m subject to a full fire-engineered approach, and that BSR “continues to support the use of timber.” However, we are concerned that in practice:

- insurers, lenders, building control bodies, and risk-averse design teams treat a height threshold in statutory guidance as a de facto prohibition, regardless of the technical routes nominally left open beyond it;
- the dynamic from the proposed wording will increase perceived risk and reduce the appetite to finance or insure the use of structural timber in the extension, adaptation or alteration of existing buildings; and
- the cost of a fire-engineered route becomes prohibitive for the small-scale retrofit, extension and conversion projects most relevant to building reuse, even where it remains technically available, meaning the ‘optionality’ preserved in the wording is largely theoretical for this part of the market.

In other words, we are concerned that the industry is likely to react to the existence and position of the threshold itself, rather than to the technical detail of what remains permissible beyond it. This is a foreseeable and avoidable outcome. We ask BSR to consider how the final wording, and any accompanying guidance or FAQ material, can pre-empt this reaction, for example through clear, prominent confirmation that timber remains a supported structural choice above 11m subject to fire engineering, and through proportionate, cost-effective routes to compliance for smaller-scale reuse and extension projects specifically.

We ask that the guidance text include explicit, prominent confirmation that timber remains a supported structural material above the threshold subject to fire engineering, and specific provisions enabling lightweight timber extension and adaptation of existing buildings, to reduce the risk of the wording being interpreted by industry, insurers and lenders as a de facto ban.

9. Response to Question 39

Question 39: Are you aware of any particular environmental impacts for these proposals? How could any adverse impact be reduced and are there any opportunities to advance positive environmental impacts? Please provide evidence to support your response.

Our response: Yes. The proposed combustible structure threshold risks materially constraining the use of low-embodied-carbon structural timber in the height range most relevant to retrofit, extension and reuse of existing

buildings, working against the Timber in Construction Roadmap 2025 and the legally binding Climate Change Act 2008, as amended 2019, which requires net zero by 2050.

Structural timber sequesters roughly 0.9–1 tonne of CO₂ per cubic metre as it grows and avoids embodied carbon emissions of around 2 tonnes of CO₂ relative to a concrete equivalent (producing a cubic metre of concrete emits in the order of 300kg of CO₂; a tonne of steel, over a tonne of CO₂). Reuse and retrofit of existing buildings, rather than demolition and new build, is itself one of the most significant levers available to reduce the built environment's contribution to climate change: the embodied carbon of a new building is significantly higher than retrofit, refurbishment and extensions; and demolition releases the embodied carbon already locked into existing structure while adding the full embodied carbon of new materials. With the vast majority of buildings that will exist in 2050 already built today, constraining the structural material best suited to lightweight extension and adaptation of that stock carries a real climate cost that should be weighed in the impact assessment.

This climate cost should, in turn, be weighed against the comparative scale of the risk the threshold is intended to address. The Climate Change Committee's most recent assessment finds that heat-related excess deaths in the UK already range from 1,400 to 3,000 a year and are predicted to exceed 10,000 a year by 2050, at an annual cost (mortality, lost productivity and health treatment) of £6.8 billion today rising to £14 billion by mid-century. By comparison, fire deaths in medium-rise and high-rise dwellings are an order of magnitude lower (refer to our response to Consultation Question 10).

We ask BSR to commission or reference a specific assessment of the embodied carbon and climate impact of the proposed threshold, set against this comparative risk picture, as part of the impact assessment for this policy, and to ensure that the final guidance for existing buildings explicitly enables rather than obstructs the use of structural timber in reuse, retrofit and extension projects.

References

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